



Kristiina Mäkelä

ESSAYS ON INTERPERSONAL LEVEL
KNOWLEDGE SHARING WITHIN
THE MULTINATIONAL CORPORATION

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Abstract

Knowledge sharing on the interpersonal level is increasingly being recognized as a fundamentally important aspect of intra-company knowledge flows within the multinational corporation (MNC). Interpersonal interaction between managers during the course of ongoing organizational routines - such as meetings, e-mails, telephone calls, projects, and informal encounters - is the primary mechanism through which the daily work of the MNC is conducted. However, despite its fundamental nature, knowledge sharing on the interpersonal level has received relatively little attention in the literature concerning MNC knowledge flows, with the current focus being on organizational level knowledge transfer, such as transfer of best practices. The present thesis addresses this research gap. The purpose of the study is to examine knowledge sharing in the interpersonal relationships of MNC managers, with a particular focus on knowledge sharing across borders. The specific research question it addresses is, "*How is knowledge being shared in the interpersonal cross-border relationships of MNC managers?*". The main research question is further divided into two more specific sub-questions relating to how (i) the relationship characteristics and (ii) the interaction context influence interpersonal cross-border knowledge sharing.

The introductory part of the thesis builds a theoretical framework explaining knowledge sharing in interpersonal cross-border relationships, which is then examined through the four essays using both quantitative (structural equation modeling on 518 cross-border relationships), and qualitative (embedded, in-depth case-study of 22 MNC managers) research methods. The framework examines three layers of social, interaction related factors influencing interpersonal cross-border knowledge sharing. In the layer of the relationship, the characteristics of the relationship are important determinants of knowledge sharing. In the layer of the immediate interaction context, the issue of boundary crossing is particularly relevant, and in the layer of the overall MNC context, internal connectivity becomes a key issue. The use of theoretical and methodological triangulation in the four essays enabled several new insights to emerge. First, Essay 1 established that interaction frequency, perceived interpersonal trust and shared cognitive ground are important determinants of interpersonal cross-border knowledge sharing. Secondly, Essay 2 added that expatriate relationships provide strong cross-border ties that make them particularly effective for cross-border knowledge sharing. Thirdly, Essay 3 found that when managers interact across borders, they have to overcome several cognitive boundaries in order to shared personal knowing effectively, and identified six means of overcoming such boundaries. Fourthly, Essay 4 argued that informal connecting points may provide one explanation why knowledge is not being shared evenly in multinational organizations. It further explained, that one such connecting point, interpersonal homophily, can create an informal clustering effect in which knowledge is shared more effectively within clusters than between them. Finally, the thesis also discussed the micro- and macro-level consequences of interpersonal cross-border knowledge sharing. On the micro level, interpersonal cross-border relationships provide access-related benefits, facilitating the creation of new knowledge by providing linkages between different bodies of knowledge and frames of knowing on the operational level where the daily problem-solving of the MNC occurs. On the macro level, interpersonal cross-border relationships provide shortcuts between the

differentiated units of the MNC, thus creating a ‘small-world effect’ within the multinational organization.

In sum, this thesis offers one of the first large-scale contributions in the international business field focusing on interpersonal level knowledge exchange within the MNC. It argues that interpersonal cross-border interaction affects the internal flow of knowledge in fundamental ways on both micro and macro levels. Furthermore, several factors that influence how knowledge is being shared within interpersonal cross-border relationships are identified.

Keywords: knowledge, knowledge sharing, interpersonal relationships, multinational corporations

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Weybridge, June 2006

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PART I

1. INTRODUCTION

1.1. Background

The difficulty of coordinating and integrating knowledge across different locations and cultures has become one of the key challenges facing multinational corporations (MNCs) today. Indeed, the ability to both mobilize and integrate knowledge effectively is often seen as one of the main sources of competitive advantage (Doz et al., 2001; Grant, 1996; Kogut & Zander, 1993; Spender, 1996), and has received significant attention in both academia and corporate practice. As a consequence, issues related to intra-company knowledge flows have recently attracted considerable interest within the MNC literature.

Most of the existing international business research has focused on the organizational level of analysis, the primary interest being in inter-unit knowledge transfer (Foss & Pedersen, 2002; Gupta & Govinradajan, 1991, 2000; Kostova, 1999; Nahapiet & Ghoshal, 1998; Szulanski, 2000; Tsai & Ghoshal, 1998; Zander & Kogut, 1995). However, as Minzberg (1973) showed, interpersonal interaction between MNC managers during organizational routines is a fundamental way of how the daily work of the MNC is conducted. As Brass et al. (2004, 801) explain, “[w]hen two individuals interact, they not only represent an interpersonal tie, but they also represent the groups of which they are members. Thus, inter-unit ties are often a function of interpersonal ties, and the centralities of units are a function of their members’ connections.” Consequently, a significant number of the knowledge exchanges within the MNC occur not only on the organizational level as transfers of best practices between units, but also on the interpersonal level, when MNC managers interact during the course of their everyday work. For example, Doz et al. (2001) argue that people are one of the most important carriers of knowledge within multinationals, and Borgatti & Cross (2003) and Cross et al. (2001) found interpersonal interaction to be the most important channel through which MNC managers sought and shared knowledge, as compared to other means such as the company intranet or written documents.

Despite its fundamental importance, interpersonal level knowledge sharing within the MNC has received surprisingly little attention in the international business literature (Foss & Pedersen, 2004). In particular, there does not yet seem to be enough understanding of how individual MNC managers share knowledge across borders. This thesis addresses this research gap. The purpose of the study is to examine knowledge sharing in the interpersonal relationships of MNC managers, with a particular focus on knowledge sharing across borders. It will thus enhance understanding of the MNC by approaching intra-company knowledge sharing, a capability recognized as fundamentally important for competitive advantage (Bartlett & Ghoshal, 1989; Kogut & Zander, 1993; Nohria & Ghoshal, 1997), from an interpersonal perspective. Moreover, it offers one of the first large-scale contributions in the international business field focusing on interpersonal level knowledge exchange within the MNC. It argues that interpersonal cross-border interaction affects internal knowledge flows in fundamental ways on both micro and macro levels, and identifies several factors that influence how knowledge is being shared within interpersonal cross-border relationships.

The thesis is built around four essays examining the topic from a number of perspectives, including how the different characteristics of cross-border relationships influence knowledge sharing within them (Essays 1 and 2), and how interpersonal knowledge sharing occurs within the MNC context on a more generic level (Essays 3 and 4). The remainder of this introductory chapter identifies the research gap (Section 1.2.), presents the specific research questions addressed in the study (Section 1.3.), and reviews the key concepts and limitations (Sections 1.4. and 1.5. respectively). Finally, the structure of the study is described in Section 1.6.

1.2. Research Gap

Issues related to knowledge sharing have been a recurrent theme of research in the international business literature, as well as in other fields of management inquiry such as knowledge and innovation research, social network analysis and social capital theory. However, there is still relatively little research into interpersonal level knowledge

sharing in general (Cross et al., 2003; Kildruff & Tsai, 2003), and in particular across borders within the MNC context (Foss & Pedersen, 2004). In the following, the relevant streams of literature are reviewed in relation to the research topic at hand.

International Business Literature Issues related to knowledge flows within the MNC have recently attracted considerable interest in the literature on international business. This research (e.g., Björkman et al., 2004; Foss & Pedersen, 2002; Gupta & Govinradajan, 1991, 2000; Kostova, 1999; Minbaeva et al., 2003; Zander & Kogut, 1995) has focused on cross-border knowledge transfers on the organizational level, i.e. the internal exploitation of know-how and practices that have been created somewhere in the organization (Szulanski, 2000). The knowledge transfer research has particularly focused on the factors that facilitate or impede knowledge flows between the different MNC units, including the properties of the sender, the receiver, and the relationship between them, and properties of the knowledge being sent (Argote et al., 2003). Furthermore, some scholars, in particular Doz et al. (2001) and Westney (2001), have emphasized knowledge sharing in the sense of mobilizing dispersed knowledge that is scattered around the corporation, and then merging it into new combinations. The above-mentioned research has typically emphasized the organizational level of analysis, incorporating the interpersonal level in aggregate measures of unit-level interaction such as numbers of inter-unit meetings and visits, team building, and training (e.g., Björkman et al., 2004; Ghoshal et al., 1994; Subramaniam & Venkatraman, 2001), rather than concentrating on interpersonal interaction in its own right.

International Human Resource Management (IHRM) Research Another stream of literature in which knowledge issues within the MNC have attracted increasing interest is in the field of international human resource management (IHRM). Knowledge- and learning-related research has included topics such as knowledge transfer through expatriation (Downes & Thomas, 2000; Riusala & Smale, forthcoming; Riusala & Suutari, 2004; Tsang, 1999), types of learning occurring in expatriate assignments (Antal, 2000, 2001), and the effect of expatriate experience on global leadership development (Black et al., 1999; McCall & Hollenbeck, 2002). However, while there has been an increasing focus on expatriates as transferors of knowledge (Bonache &

Brewster, 2001; Bonache et al., 2001), empirical evidence is still limited, and has not yet touched on interpersonal aspects of knowledge sharing in any detail.

Knowledge and Innovation Research Research on knowledge and innovation features intra-company knowledge sharing as one of its key areas of interest (Holtshouse, 1998; Miles et al., 1998; Nonaka & Teece, 2001). The theoretical framework that underlies much of the knowledge-related research in organizations has been referred to as the knowledge-based theory of the firm (Grant, 1996; Kogut & Zander, 1993; Nonaka & Takeuchi, 1995; Spender, 1996), and incorporates contributing and inter-related streams of research such as knowledge creation (Nonaka, 1994; Nonaka & Takeuchi, 1995), organizational learning (Huber, 1991; Easterby-Smith, 1997), organizational capabilities and competences (Hamel & Prahalad, 1994; Leonard-Barton, 1992; Teece et al., 1997), and innovation research (Teece, 2000; von Hippel, 1988) (classification adapted from Grant & Baden-Fuller, 2000). The role of individuals in knowledge sharing has been specifically recognized by scholars investigating knowledge creation (Nonaka & Takeuchi, 1995; Nonaka et al., 2000; Von Krogh et al., 2000; Scharmer, 2000), but this research has tended to examine knowledge-creation processes on a more abstract level, and the question of how knowledge sharing on the interpersonal level occurs in practice has received less empirical attention.

Social Network Analysis Interpersonal managerial networks are increasingly being investigated from the knowledge sharing perspective within the field of social networks (e.g., Borgatti & Cross, 2003; Hansen, 1999, 2002; Monge & Contractor, 2003; Reagans & McEvily, 2003; Tsai, 2001, 2002). Social network research focuses on patterns of relations, which are typically analyzed graphically and quantitatively (Kildruff & Tsai, 2003; Wasserman & Faust, 1994). While knowledge sharing has been a key interest area, social network analysis has tended to focus on network structures or tie configurations (e.g., Hansen, 1999, 2002; Reagans & McEvily, 2003; Powell & Smith-Doerr, 1994; Rogers, 1995), rather than on the characteristics of the relationships - such as reaching across borders - or on the multinational context (with the notable exception of Uzzi, 1997; and Uzzi & Lancaster, 2003).

Social Capital Theory Knowledge sharing has also been a key topic within the increasingly established framework of social capital, in broad terms referring to assets (i.e. knowledge and other resources) embedded in and available through a network of relationships (Adler & Kwon, 2002; Nahapiet & Ghoshal, 1998). This theoretical umbrella has been used to explain knowledge flows on both the individual level (Burt, 1992, 1997), as well as on the organizational level contributing to competitive advantage (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). The contributions of Nahapiet & Ghoshal (1998) and Tsai & Ghoshal (1998) have been particularly influential in the MNC context. Kostova & Roth (2003) have also provided a key contribution, arguing for the importance of boundary-spanning relationships in their work on social capital within the MNC. However, these valuable investigations have focused primarily on the organizational level, rather than on knowledge sharing in interpersonal cross-border relationships as such. Therefore, while the social capital approach has been very helpful in shedding light on intra-company knowledge sharing, there is not enough understanding of the specific challenges and contributions on the interpersonal level that affect the flow of knowledge within the MNC.

In sum, while important contributions have been made in the above-mentioned literature to the understanding of internal knowledge flows within the MNC, the research has tended to focus either on the organizational level of analysis or on individuals as carriers of knowledge. This thesis furthers understanding of the MNC by approaching intra-company knowledge sharing from an interpersonal perspective, the argument being that interpersonal knowledge sharing between MNC managers during the course of their daily work is a fundamentally important component of knowledge flows within the MNC.

1.3. Research Questions

Against the background discussed above, the objective of this doctoral thesis is to examine knowledge sharing in interpersonal relationships within the MNC, with

particular focus on knowledge sharing across borders. Consequently, the main research question was formulated as follows:

How is knowledge being shared in the interpersonal cross-border relationships of MNC managers?

This question is further divided into two more specific sub-questions, which are addressed in the four essays:

1. *How do the relationship characteristics influence knowledge sharing in interpersonal cross-border relationships?*
2. *How does the interaction context influence knowledge sharing in interpersonal cross-border relationships?*

Part I of the thesis builds a theoretical framework explaining knowledge sharing in interpersonal cross-border relationships. The four essays, in turn, take a different perspective on the research questions: Essays 1 and 2 focus on Sub-question 1, while Essays 3 and 4 address Sub-question 2. Having set out the objective and research questions, I will now clarify the key assumptions and concepts used in this study, and discuss the limitations.

1.4. Key Concepts of the Study

The context of this thesis is the multinational corporation (the MNC). Within this context, the work presented builds on a number of underlying conceptual assumptions about the MNC and its environment. These are described in the following.¹

¹ It is perhaps worth noting that, while all three assumptions are well established in international business research, all of them may be countered by several competing theories. It is not within the scope of this thesis to participate in these discussions, however, the purpose in the following being rather to set out the theoretical underpinnings.

First, the MNC is conceptualized as a differentiated network of exchange relationships, following the work of Bartlett & Ghoshal (1989), Ghoshal & Bartlett (1990), and Nohria & Ghoshal (1997). It provides a particularly challenging environment for intra-company knowledge sharing as it is dispersed across geographical, national, cultural and linguistic borders. This dispersion contributes to disconnections that occur between organizational units, and increases barriers to communication and knowledge sharing between managers (Burt, 1992, 1997).

Secondly, in line with the knowledge-based theory of the firm (Grant, 1996; Kogut & Zander, 1993; Spender, 1996), it is assumed in this thesis that knowledge is one of the most important strategic resources of the MNC, and that the effective integration and deployment of idiosyncratic knowledge across borders is a major organizational capability. More specifically, the MNC is seen as a social community that specializes in the creation, transfer and integration of knowledge, following Kogut & Zander (1992, 1993, 1996). It is therefore assumed that knowledge sharing across borders is, by definition, a key task for the MNC. However, the aim in this thesis is to establish *how* knowledge is being shared rather than to measure its value to the organization as such. Value considerations are discussed in more detail in Sections 2.1.2. and 2.2.3., and Chapter 6.

Thirdly, in line with Granovetter's (1985) embeddedness argument, it is presumed in this work that all economic action is embedded in social relationships (see also Podolny & Page, 1998; Powell, 1990; Powell & Smith-Doerr, 1994; Swedberg, 1994), and accordingly that interpersonal networks shape knowledge and learning within organizations by creating channels in which knowledge can flow (Brass et al., 2004; Uzzi & Lancaster, 2003). Furthermore, as knowledge resides in the minds, networks and communities of people (Brown & Duguid, 1998; Cohen & Prusak, 2001), it follows that interaction between managers is a major channel of knowledge sharing within firms (Borgatti & Cross, 2003; Brass et al., 2004; Ghoshal et al., 1994; Monge & Contractor, 2003).

Fourthly, in this study, the concept of interpersonal knowledge sharing refers to formal and informal knowledge exchanges occurring within interpersonal interaction in network relationships (Barner-Rasmussen, 2003). It is thus differentiated from the often interchangeably used term knowledge transfer (see Ipe, 2003, for a similar distinction). Typically, the term knowledge transfer refers to the recreation of organizational practices between subsidiaries as an organized activity (Szulanski, 2000), whereas knowledge sharing occurs naturally in interpersonal interaction and may or may not be planned or even intentional. It takes place constantly during the course of the everyday work of MNC managers; within formal and informal face-to-face meetings, over the telephone or via e-mail, as well as in informal encounters such as popping into someone's office or chatting at the coffee machine.² Obviously, knowledge sharing and knowledge transfer are interrelated and not mutually exclusive terms: knowledge transfer may include aspects that are very close to what is termed in this thesis knowledge sharing, and vice versa. It is argued, however, that there is a distinctive conceptual difference that warrants attention and more research.³

Furthermore, in an attempt to ensure the clarity of presentation, the different terms related to knowledge exchange are used in this study as follows. First, the term knowledge transfer is used for knowledge exchange on the organizational level between groups or units. Secondly, the term knowledge sharing refers to knowledge exchange on the interpersonal level.⁴ Lastly, the terms knowledge flow(s) and knowledge exchange(s) are used as neutral terms encompassing all movements of knowledge within the MNC. The expression MNC manager is used as a generic term referring to

² It is worth noting here that I choose not to discuss formal and informal relationships, but rather formal and informal interaction, both of which may occur within the same relationship at different times. As Ibarra (1992, 167) points out, "Informal networks, however, are still commonly described in contrast, or opposition to, formal organizational structures, although empirical evidence suggests that in many organizations they overlap to a considerable extent".

³ While I argue that a distinction between knowledge sharing and knowledge transfer should be made, I also recognize the fact that most research on knowledge transfer does not do so. I agree with Foss & Pedersen (2004) that the absence of a micro-foundation to aggregate concepts of unit-level knowledge flows, and an ill-defined distinction between the level of analysis, are key issues in existing research on MNC knowledge flows. As Foss & Pedersen (2004, 343) put it, "What exactly does it mean in terms of the knowledge of individual agents to 'transfer a competence' from one MNC unit to another one?"

⁴ It is worth noting that even if the word sharing could also be understood as pointing to the 'giver' of knowledge, in this study it is used as a generic term encompassing both the giving and receiving aspects of interpersonal knowledge exchange.

MNC employees engaged in knowledge-relevant work, and does not refer to hierarchical manager-subordinate relationships.

In conclusion, it is worth noting that as these basic assumptions apply throughout the whole of this study, including the four essays, there will of necessity be some repetition when each essay is introduced. In particular, the reader will see my argument for the importance of interpersonal knowledge sharing, the definition of knowledge sharing, and its differentiation from knowledge transfer repeated in the various essays. This is a conscious choice, as the coherence of the argument is a more important objective than a lack of repetition in the interest of narrative variation.

1.5. Limitations of the Study

In addition to the basic assumptions discussed above, there are some limitations to this work. First, knowledge is a research topic that is widely and often heatedly discussed in several research fields (for reviews, see e.g., Amin & Cohendet, 2004; Choo & Bontis, 2002). Consequently, a number of different and sometimes conflicting definitions and conceptualizations exist of what constitutes knowledge. I provide an overview of how knowledge is understood in this study in Chapter 2, but refrain from further discussion on the nature of knowledge as this philosophical debate is clearly beyond the scope of this thesis.

Secondly, this work focuses on the sharing of business-related knowledge. Business knowledge includes a variety of contents, such as functional and technical knowledge, market knowledge, and process and procedural knowledge, and is typically idiosyncratic to each individual firm. Consequently, issues related to knowledge content are not elaborated in more detail. Moreover, although interpersonal relationships can also be used for the sharing of various other kinds of knowledge such as personal matters, gossip or career advancement, these are also beyond the scope of this study.

Thirdly, the main concern in this thesis is with cross-border knowledge sharing, which refers to knowledge sharing between managers who are located in different countries. Accordingly, the sharing of business knowledge in domestic environments (i.e. within MNC units, or between domestic units), or in inter-organizational relationships (i.e. between firms) is not the main interest, although many of the concepts discussed here may also apply in these relationships. Moreover, although all the data used in this study relates to interpersonal relationships between managers working in different countries, this geographical dimension is often combined with the crossing of other types of boundaries, such as cultural, linguistic, functional and hierarchical. Consequently, and as discussed particularly in Essays 3 and 4, many of the findings could be applied to the crossing of not only geographical but also other types of boundaries within the MNC.

1.6. Structure of the Study

Following this introductory chapter, the theoretical framework and the empirical work that comprise this thesis are presented as follows. Chapter 2 gives an analysis of previous research in the key areas of inquiry addressed in this study. This theoretical discussion consists of two parts. Section 2.1. provides a review of knowledge research within the MNC context, including a general discussion on knowledge, and a review of existing research on knowledge flows on the organizational and interpersonal level within the MNC. Secondly, in Section 2.2., I review existing research related to interpersonal relationships within the MNC, with a focus on the social network and social capital approaches.

I then go on to develop the theoretical framework of the study in Chapter 3, and position the four essays constituting this thesis. Chapter 4 concerns the methodology of the study, which comprises a qualitative case study of 22 managers involved in on-going interpersonal cross-border interaction (Section 4.1.), and a quantitative cross-sectional analysis of 518 interpersonal cross-border relationships using structural equation modeling (Section 4.2.). Brief summaries of the four essays are provided in Chapter 5 (the full essays are included in Part II). I then proceed to draw together the independent

analyses reported in the four essays in Chapter 6, and draw Part I to a close in Chapter 7 with a discussion on the contributions and implications of this work in terms of both theory and practice. The structure is illustrated in Figure 1 below.

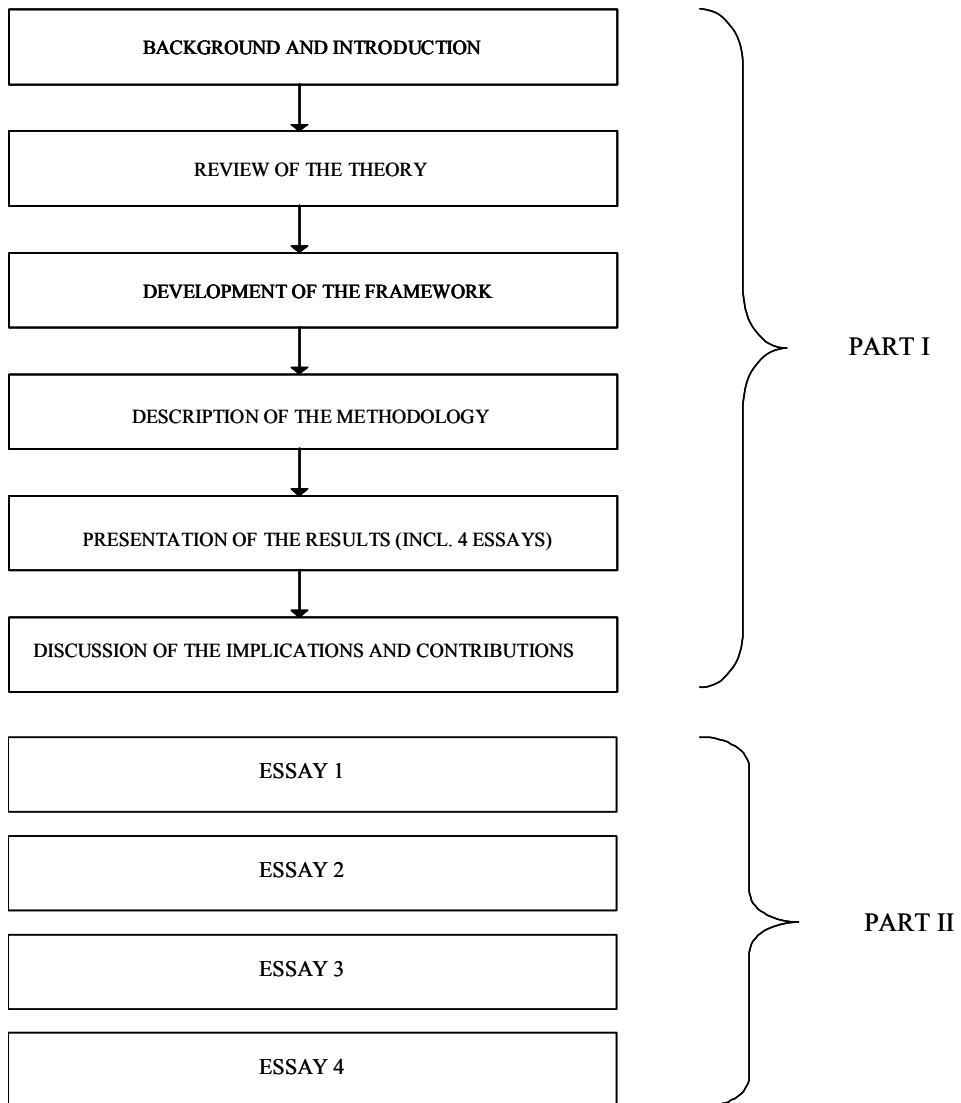


Figure 1. The Structure of the Study

2. LITERATURE REVIEW

2.1. Knowledge and the Multinational Corporation

In this section, I first discuss the concept of knowledge and the various understandings of it in more generic terms, and then review existing research in relation to knowledge flows within the MNC, including both organizational and interpersonal approaches to cross-border knowledge exchange. The purpose of the discussion below is to provide a basis on how interpersonal knowledge sharing is understood in this study, and it does not attempt to give an exhaustive review of the various philosophical stands on knowledge that exist among scholars (for more foundational discussion on individual and organizational knowledge, see e.g., Amin & Cohendet, 2004; Machlup, 1980; Nonaka & Takeuchi, 1995; Polanyi, 1958/1962, 1966; Tsoukas & Vladimirou, 2001).

2.1.1. The Concept of Knowledge

The concept of knowledge has long interested scholars, including the great philosophers from Plato to Popper, and more recent theorists of organizational knowledge, which is the main area of interest here. No commonly accepted consensus has emerged from this work yet, and the different ontological and epistemological stands from which the concept of knowledge has been approached have resulted in many, sometimes conflicting views of what constitutes knowledge (Grant, 1996; Spender, 1996). These views range from the positivist and rationalist epistemology of knowledge as ‘justified true belief’ that assumes separateness of objective knowledge and the holder of this knowledge, to the extreme relativist notions that all knowledge is constructed from sense impressions and thus reflect only subjective reality (Amin & Cohendet, 2004; Spender, 1996). Neither of the extreme stands is supported here, but knowledge is rather viewed from a more pluralistic epistemological perspective (Lam, 2000) in which knowledge within the MNC is created through the formation of new combinations of

existing knowledge by individuals and groups (Kogut & Zander, 1992, 1993), regardless of whether it is considered objective or subjective.

Furthermore, there are different views on what constitutes knowledge, including the question of whether knowledge is primarily individual (Polanyi, 1966) or collective (Brown & Duguid, 1991; Lave & Wenger, 1991; Orlikowski, 2002). In this study, I follow Tsoukas & Vladimirou's (2001, 983) definition of knowledge as "an individual capability to draw distinctions, within a domain of action, based on an appreciation of context or theory, or both". This view of knowledge recognizes that a manager's knowledge is a continuously developing outcome of individual interpretation, and at the same time is embedded in the domain or community within which the individual works (Tsoukas, 2000). In fact, Hedlund (1994) recognizes that several levels of knowledge may exist simultaneously, including those of the individual, the group, the organization and the inter-organizational domain. Obviously, although I subscribe to the notion of interplay between these different levels, the focus of this thesis is on the interpersonal level.

Another key aspect of what constitutes knowledge is whether different forms or types can be identified (see e.g., Amin & Cohendet, 2004; Blackler, 1995; Nonaka & Takeuchi, 1995, Spender, 1996). The most broadly discussed distinction is that between explicit and tacit knowledge (Nonaka & Takeuchi, 1995; Polanyi, 1966). Explicit knowledge refers to knowledge that "is transmittable in formal, systematic language" (Nonaka, 1994, 16), i.e., that can be expressed in words or numbers, whereas tacit knowledge refers to knowledge that is difficult to articulate, and "embedded and embodied in everyday practices" (Scharmer, 2000, 37). The explicit – tacit distinction has raised considerable debate, particularly on the issue of whether they represent two separate forms of knowledge (Nonaka & Takeuchi, 1995), two opposite ends of a continuum (Ambrosini & Bowman, 2001), or inseparable dimensions of all knowledge (Tsoukas, 1996). I again take a pluralistic stand on this issue and maintain that one can empirically study the sharing of explicit and tacit components of knowledge regardless of whether they are seen as two separate forms or opposite ends of a continuum. However, the focus of this study is not on explicit and tacit knowledge as such, but

rather on the sharing of all kinds of knowledge across the different domains or communities within which MNC managers work, regardless of the explicitness or tacitness (see Håkansson, 2004, for a similar viewpoint on this).

Finally, there is an emerging distinction being made in the literature between knowledge as a possession (i.e. something you hold and then use) and knowing as an action (i.e. something you do) (Cook & Brown, 1999). While the traditional knowledge-as-possession view is by far the most prevalent, particularly in the literature on international business, the knowing approach is being increasingly adopted in the wider domain of organization studies (e.g., Amin & Cohendet, 2004; Cook & Brown, 1999; Orlikowski, 2002), building on the practice-inspired work of Brown & Duguid (2000, 2001), Lave & Wenger (1991) and Wenger (1998) among others. Although the epistemological foundations of the two approaches are very different, Cook & Brown (1999) argue that they are complementary and mutually enabling rather than substitutive explanations. I follow their line of thinking, and use both approaches to promote better understanding of knowledge sharing in interpersonal cross-border relationships.

In sum, the pluralistic, complementary view of knowledge adopted in this study follows Cook & Brown's (1999) framework according to which the dynamic interplay between knowledge (i.e. the explicit and tacit stocks of knowledge possessed by an individual or a group) and knowing (i.e. thinking and problem-solving in action and interaction) is a powerful source of innovation within organizations. This integrative view of knowledge adopted from Cook & Brown (1999) is illustrated in Figure 2 below. More specifically, I follow the more traditional epistemology of knowledge in Essays 1, 2 and 4, and explore the complementary knowing approach in Essay 3.

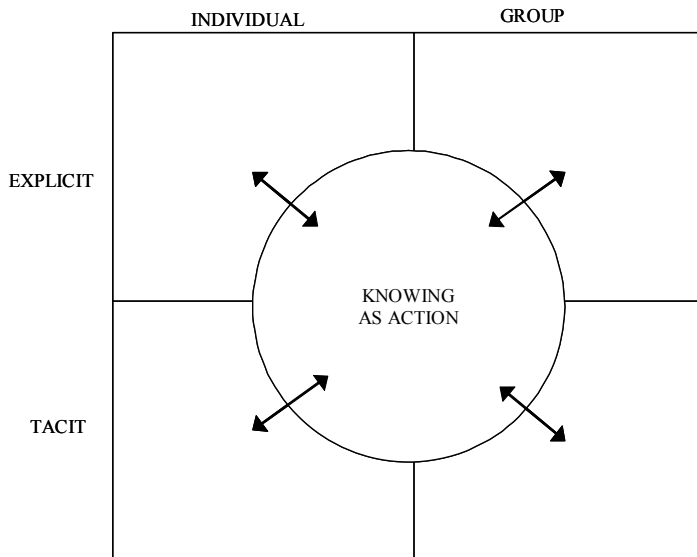


Figure 2. The Interplay between Knowledge, its Different Dimensions, and Knowing (Cook & Brown, 1999)

2.1.2. The Importance of Knowledge for the MNC

As already discussed, the MNC is commonly being viewed as a differentiated network characterized by flows of knowledge, capital and products, in which the capacity to share knowledge is seen as a fundamental organizational capability (Bartlett & Ghoshal, 1989; Ghoshal & Bartlett, 1990; Nohria & Ghoshal, 1997). Westney (2001, 147) goes even further and argues that “the focus of the study of the MNE has shifted from viewing geographic dispersion as a *result* of knowledge creation to seeing it as a *source* of knowledge creation” [emphasis added]. In other words, the essential organizational challenge for the MNC is in how to leverage its global network and the knowledge residing in it in order to promote the creation of new knowledge and innovations, and thus competitive advantage, rather than in where and how to expand its presence (Westney, 2001). As Doz et al. (2001) argue, sensing new knowledge faster and more effectively, mobilizing dispersed knowledge in order to create a fertile ground for

innovation, and operationalizing innovations more effectively than one's competitors are key challenges and new sources of competitive advantage for MNCs.

The MNC has become a context of special interest in knowledge research, because it can “create and exploit knowledge in a variety of culturally, socially and economically different environments” and has “the worldwide opportunity to recombine and recompose knowledge-based assets in an international or global network and can deploy strategies that reflect variations in global knowledge intensity and extensity” (adapted from Hedlund, 1986, in Kulkki & Kosonen 2001, 244). Westney (2001) argues that the advantages of the MNC in knowledge creation include three key factors. First, because MNCs are operating in several cultural environments, they are exposed to a wider *variety of stimulation* from a wider variety of customers, competitors and technology, than domestically operating firms. Westney (2001) dubbed this function the ‘global scanner’, and Doz et al., (2001) call it ‘sensing’. Second, the MNC typically generates innovations in a *variety of locations*. The identification and selection of local innovations that have wider applicability, and their adaptation in other locations, is seen as a major advantage. Westney (2001) calls this function a ‘selection regime’. Third, the MNC can *combine resources and capabilities* dispersed across its various local subsidiaries in order to create new knowledge, functioning as ‘a knowledge-creating network’ (Westney, 2001).

Consequently, the flow of knowledge within the MNC has become a major research topic within the field of international business research. The following two sections review existing research on knowledge flows within the MNC both on the organizational level, which has primarily concerned knowledge transfer between the different units (Section 2.1.3.), and on the interpersonal level, which has typically referred to expatriates as transferors of knowledge (Section 2.1.4.).

2.1.3. Organizational Level Research on Knowledge Exchange within the MNC

Most of the existing research on knowledge exchange within the MNC has concentrated on the organizational level of analysis, and particularly on knowledge transfer between MNC units, referring to the internal exploitation of know-how or practices that have been created somewhere in the organization (Szulanski, 2000). This section provides an overview of relevant research on internal knowledge transfer at the unit level. Research on inter-company knowledge flows, and knowledge exchange in alliances, joint ventures or other co-operative arrangements are excluded. Four streams of literature are identified, and although they may be overlapping and certainly reference each other, each one represents a different perspective on the issue of inter-unit knowledge transfer. These different streams are first reviewed briefly and then summarized in Table 1 at the end of the section.

First, the bulk of the work on knowledge exchange within the MNC has taken the perspective of how the different characteristics of exchange situations influence the effectiveness of knowledge transfer, whether it is the properties of knowledge, the properties of the sender or the receiver, or the properties of the transmission channel (Argote et al., 2003). Indeed, Szulanski (1996, 2000), in his work on the ‘stickiness’ (i.e. difficulty) of knowledge transfer, sees it as a process in which difficulty is a normal characteristic rather than a malfunction, therefore highlighting the importance of increasing the effectiveness of the process.

For example, Gupta & Govinradajan (1991, 2000) maintain that the effectiveness of knowledge flows within the MNC is predominantly determined by the following five factors: (i) *the value of the source unit’s knowledge stock*, i.e. how valuable others perceive the particular knowledge to be; (ii) *the motivational disposition of the source unit*, i.e. the willingness of the sender to share knowledge; (iii) *the existence and richness of the transmission channels*, i.e. the number and quality of communication links; (iv) *the motivational disposition of the target unit*, i.e. the receiver’s willingness to consider outside “not-invented-here” information; and (v) *the absorptive capacity of the target unit* (Cohen & Levinthal, 1990), i.e. the ability of the receiver to recognize

the value of new information, incorporate it into an existing pool of knowledge, and exploit it commercially. Moreover, Zander & Kogut (1995) found that the degree of codification and the ease of communication had a significant influence on the speed of knowledge transfer between MNC units. Subramaniam & Venkatraman (2001), in turn, found that the richness of information-processing mechanisms had a significant positive influence on the transfer and deployment of tacit overseas knowledge. Björkman et al. (2004) investigated the impact of different control mechanisms on the successful transfer of knowledge from subsidiaries to headquarters, and Minbaeva et al. (2003) looked at the role of absorptive capacity in effective knowledge transfer. Finally, within the MNC context, this line of research has also included investigations into how cross-cultural differences influence the transfer of knowledge between two units (e.g., Bhagat et al., 2002; Kedia & Bhagat, 1988).

The second major stream of research adopts a relational view of knowledge transfer. This research takes typically either a social capital perspective (e.g., Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998), arguing that the level of social capital possessed by a unit influences its access to knowledge, or a social networks approach linking either the network position or the network tie configuration of a unit to its access to knowledge (e.g., Hansen, 1999, 2002; Reagans & McEvily, 2003; Tsai, 2001, 2002). For example, Tsai & Ghoshal (1998) argue that social capital facilitates resource exchange and combination between MNC units. Moreover, Tsai (2001) maintains that organizational units occupying a central position within the MNC have better access to new knowledge, and this in turn has a positive effect on innovation and performance. Finally, Hansen (1999, 2002) and Reagans & McEvily (2003) show in their respective studies that network structure and range have significant effects on the transfer of knowledge between organizational groups. Hansen (1999) found that strong ties facilitated the sharing of tacit knowledge, and that weak ties helped in the search for new knowledge, while Reagans & McEvily (2003) argued that strong ties assist the sharing of all, not just tacit, knowledge.

The third major stream of research looks at knowledge transfer from an institutional perspective, seeking to understand how the institutional context of the knowledge

recipient influences the success of the knowledge transfer (e.g., Jensen & Szulanski, 2004; Kostova, 1999; Kostova & Roth, 2002). For example, Kostova & Roth (2002) found that the institutional profile of the host country had a significant effect on the adoption of an organizational practice by a subsidiary. Furthermore, there is also some interesting work on how the cultural context in which a unit is embedded may influence the adoption of practices (Brannen, 2004).

Finally, the fourth key stream of research has focused on external environments as sources of MNC units' knowledge stocks. This line of work argues that the level of transferable knowledge within an MNC unit is an important determinant of knowledge transfer (Foss & Pedersen, 2002). Furthermore, the level of external embeddedness of an MNC unit is seen to influence both its competence development and, consequently, the knowledge transferred to the other units (Andersson et al., 2002).

The purpose of the above discussion has been to review existing organizational level research on knowledge transfer within the MNC, a summary of which is provided in Table 1. The following section reviews existing research on interpersonal level knowledge exchange, which is significantly more limited.

Line of Research	Exemplary Works
Work focusing on properties of knowledge and the transfer situation	Gupta & Govirandajan (1991, 2000) Szulanski (1996, 2000) Zander & Kogut (1995)
Work focusing on relational aspects from the social capital and social network perspectives	Hansen (1999, 2002) Nahapiet & Ghoshal (1998) Reagans & McEvily (2003) Tsai (2001, 2002) Tsai & Ghoshal (1998)
Work focusing on the institutional context of the knowledge recipient	Jensen & Szulanski (2004) Kostova (1999) Kostova & Roth (2002)
Work focusing on the external embeddedness of the knowledge transferor	Andersson et al. (2002) Foss & Pedersen (2002)

Table 1. An Interpretation of the Different Lines of Research on Knowledge Transfer between MNC Units

2.1.4. Interpersonal Level Research on Knowledge Exchange within the MNC

Although the importance of the interpersonal level to the mobilization of knowledge within the MNC has been recognized by several prominent scholars (e.g., Doz et al., 2001; Nohria & Ghoshal, 1997; Nonaka & Takeuchi, 1995; Tsai & Ghoshal, 1998), and has provoked increasing scholarly interest (Foss & Pedersen, 2004; Ipe, 2003; Welch & Welch, 1993), empirical work on interpersonal knowledge exchange is scarce. Current research in the field of international business has tended to deal with the interpersonal level by incorporating it into aggregate-level measures of unit-level interaction, including measures such as the number of inter-unit meetings and visits, teams or training (e.g., Björkman et al., 2004; Ghoshal et al., 1994; Subramaniam & Venkatraman, 2001), rather than focusing on interpersonal interaction in its own right. Existing contributions on interpersonal level knowledge exchange within the MNC come predominantly from the field of international human resource management (IHRM), although this research has concentrated on managers as carriers of knowledge when they move from one location to another, rather than on interpersonal interaction as such.

The contributions of the IHRM literature to interpersonal level knowledge sharing come primarily from two angles. On the one hand, there has been a traditional focus on the role of expatriates in facilitating inter-unit ties as part of headquarters control and coordination efforts (Edström & Galbraith, 1977; Harzing, 2001a, 2001b; Nohria & Ghoshal, 1997). Consequently, the role of expatriates has been in the export of knowledge and organizational practices from headquarters to the subsidiaries as a socialization mechanism, including the creation of verbal information networks (Edström & Galbraith, 1977; Harzing, 2001a, 2001b). However, while this research has recognized the role of expatriates in knowledge exchange, the main focus has been on control and coordination issues (Martinez & Jarillo, 1989) rather than on how knowledge is being shared by expatriates.

On the other hand, there has been growing interest in examining expatriation specifically as a means of inter-unit knowledge exchange and diffusion (Bonache &

Brewster, 2001; Bonache et al., 2001; Downes & Thomas, 2000). First, recent research has considered the different directions of knowledge flows, including not only the traditional headquarters-to-subsidiary direction but also knowledge transfer during repatriation (Antal, 2000, 2001; Tsang, 1999), and knowledge transfer from subsidiaries to headquarters in the context of inpatriation (Harvey & Buckley, 1997; Harvey et al., 2000). For example, Tsang (1999) found that expatriates were effective mediators of market and business-environment knowledge between their home and the host countries. Similarly, Downes & Thomas (2000) concluded that expatriates were successfully used in bi-directional knowledge transfer, especially when there was less international experience to draw on. Furthermore, recent contributions have increased our understanding of different factors influencing the effectiveness of expatriate knowledge transfer processes (Riusala & Smale, forthcoming; Riusala & Suutari, 2004).

In sum, existing research on international business has had an important and informative role in promoting better understanding of MNC knowledge flows. However, as the main focus has been on organizational level knowledge transfer or on individual expatriates as carriers of knowledge, additional theoretical support is needed from outside the field to shed light on interpersonal aspects of knowledge sharing. To this end, a broader conceptual basis for understanding the logic of interpersonal interaction within the MNC is sought from the perspectives of social networks and social capital, which are discussed next.

2.2. Interpersonal Interaction and the Multinational Corporation

The term interpersonal interaction in this study refers to the interaction between individual managers working within the different units of the MNC. This consists of both formal and informal interface, and includes both non-face-to-face and face-to-face means of communication, which can occur both one-to-one and within groups.

While there are several network-inspired lines of research within sociology, management and marketing, the social networks and social capital approaches are used

here as they provide more focus on the interpersonal level than other network approaches.⁵ In this section, I will first provide give a brief general overview of both social network research and social capital theory, and then draw upon these approaches to discuss the relevance of interpersonal level interaction to the flow of knowledge within the MNC.

2.2.1. Interpersonal Interaction in Social Network Research

Social network research refers to a line of study that focuses on relationships and patterns of relationships between individual actors or social structures, and that typically uses quantitative and graphical structural analysis methods (Brass et al., 2004; Kildruff & Tsai, 2003; Wasserman & Faust, 1994). The research focus is on relationship ties and structures rather than on individual actors and their attributes. Actors - which may be individuals, groups or organizations - are seen to operate in a web of inter-relationships with other actors, and their position and connections within this network structure are seen to both enable and constrain behavior (Brass et al., 2004). Indeed, as Borgatti & Foster (2003) point out, the focus of social network studies has been either structuralist (i.e. focusing on network structures) or connectionist (i.e. focusing on tie connections).

The roots of social network research are in social psychology and sociometry, combining ideas and concepts from graph theory in mathematics (Granovetter, 1973; White, 1961; White et al., 1976). The approach has been used to investigate a number of micro and macro issues, from political power (Padgett & Ansell, 1993) to the diffusion of ideas (Rogers, 1995/2003), and from the 'small world' phenomenon (Watts, 1999a, 1999b) to the World Wide Web (Barabasi, 2002). Within the domain of organization theory, the research has made important advances in a number of topic areas, such as corporate elite networks (Davis & Greve, 1997), innovation and inter-organizational

⁵ There does not seem to be any commonly acknowledged consensus of what streams of research subscribe to 'a network paradigm', but examples of network approaches include inter-organisational network studies (e.g., Jarillo, 1988; Powell et al., 1996, 2005), the Nordic Industrial Network Approach (IMP) (e.g., Håkansson & Ford, 2002; Johansson & Mattsson, 1994), and a network perspective on relationship marketing (e.g., Hunt & Morgan, 1994) (see Forsman & Solitander, 2003, for a discussion around these).

collaboration (Powell et al., 1996, 2005) and status (Podolny, 1993, 2001; Zuckerman, 1999). Moreover, as discussed in Section 2.1.3., it has also made some very important contributions to knowledge-related research within organizations (Borgatti & Cross, 2003; Hansen, 1999, 2002; Reagans & McEvily, 2003; Tsai 2001, 2002), although this research has been conducted mainly on the organizational level.

In terms of knowledge sharing on the interpersonal level, existing research on social networks has tended to focus on structural properties rather than interpersonal relationships (Borgatti & Cross, 2003). As Borgatti & Cross (2003, 433) state, “We know little about the ways in which kinds of relationships (in contrast to structural properties) condition information flow and learning in networks” [parentheses in the original]. Furthermore, interpersonal level social network research has examined issues such as the impact of actor similarity on network formation (Carley, 1991; McPherson & Smith-Lovin, 1987; McPherson et al., 2001), or power and influence (Brass, 1995; Ibarra, 1992; Krackhardt, 1992), which can be seen as antecedents of knowledge sharing (Brass et al., 2004). Interpersonal ties have also been examined as precursors of organizational level ties (Brass et al., 2004).

A number of recent contributions have given specific attention to individual level knowledge sharing within organizations, most notably the work of Borgatti & Cross (2003), Cross & Cummings (2004), Uzzi (1997), and Uzzi & Lancaster (2003). Borgatti & Cross (2003) found that relational characteristics had a strong predictive power on the information-seeking patterns of individual managers, and Cross & Cummings (2004) showed that individual performance in knowledge-intensive work was associated with an individual’s network characteristics, such as engaging in relationships crossing organizational boundaries. Finally, Uzzi (1997) and Uzzi & Lancaster (2003) concluded that different forms of relational ties promoted different forms of knowledge transfer and learning, suggesting that information exchange in embedded ties is more tacit and holistic than in arms-length ties, which are characterized by the exchange of factual data.

While social network research has greatly influenced this study, social network analysis is not used as a research method as such. The influence of the approach has rather been on a more fundamental level, i.e. in conveying the importance of interpersonal relationships in the flow of knowledge across the different units of the MNC. Another line of research contributing to the issue of interpersonal cross-border relationships is that of social capital, particularly the work of Burt (1992, 1997) and Granovetter (1973). Before moving on to the discussion of social capital, it should be noted that the two approaches are related and partly overlapping, so that some of the research I have included within the social capital tradition may have been incorporated by others into social networks, and vice versa (the contributions of Burt (1992, 1997) and Granovetter (1973) are a case in point). Moreover, there is significant disagreement among scholars over whether social capital as a research area is a sub-section within the field of social networks (Borgatti & Foster, 2003; Brass et al., 2004; Lin, 2001), or whether they are two distinct research traditions (Adler & Kwon, 2002). As neither of these debates is essential to this thesis, they are left without any further elaboration. The following gives an overview of social capital theory, and the resulting insights are then applied to the research questions at hand.

2.2.2. Interpersonal Interaction in Social Capital Theory

The concept of social capital, in broad terms referring to assets embedded in relationships, has recently attracted considerable attention within the social sciences (Adler & Kwon, 2002). While its origins lie at the beginning of the 20th century, the first widely recognized theoretical investigation was provided by Bourdieu (1983), who differentiated between economic, cultural and social capital (see e.g., Portes, 1998, for an excellent review of the origins of the concept). A number of other seminal theorists have also been commonly acknowledged as having had a strong influence on how the theory has developed and spread outside its sociological origins. These include Coleman (1988), who argued for the contribution of social capital (in the form of cohesive social ties) in the creation of human capital, Burt (1992, 1997), who introduced the concept of structural holes by rethinking Granovetter's (1973) classic

notion of weak ties, and Putnam (1995), who looked at social capital particularly on the societal level.⁶

Social capital is a theoretical umbrella that has been used in a variety of ways in a number of research fields, including both individual social capital as well as the social capital of groups, organizations or even nations. In fact, the broad scope of analysis levels and applications has been acknowledged as having the potential to shed light on some important micro- and macro-level issues spanning several fields (Engeström, 2001; Grootaert & van Bastelaert, 2002), and it has also been criticized for being too wide a conceptual umbrella (Adler & Kwon, 2002; Field, 2003). Furthermore, given the wide usage of the concept, the definitions vary (see Adler & Kwon, 2002, for a summary).

On the one hand, the definitions of social capital range from seeing it as a *private good of an individual or a group* (e.g., Burt, 1992; Lin, 2001; Lin et al., 2001), to considering it a *public asset of a social entity* (e.g., Coleman, 1988; Fukuyama, 2001; Putnam, 1995; Woolcock, 1998). According to the ‘social capital as a private good’ view, it is an asset of an individual actor, and focuses on the benefits that these individual actors derive from their social capital (Kostova & Roth, 2003). An observation in Leana & van Buren (1999) illustrates this well, noting that while the ‘private good’ view can be applied not only to the individual but also to a group or other aggregate entity, the focus is always on the private benefit of the individual or the aggregate. Burt (1992, 1997) is perhaps the most notable exponent of this view. Similar notions also seem to be implicit in the work of several network theorists (e.g., Hansen, 1999, 2002; Reagans & McEvily, 2003; Tsai, 2001, 2002), although many do not necessarily associate themselves with the social capital theory as such.

⁶ The ‘capital’ element of social capital has raised some debate, including some criticism of the overuse of the economic concept of capital – such as intellectual capital, human capital and cultural capital. There seems to be general agreement that social capital is an (at least metaphorical if not strictly literal) asset that can be invested in the expectation of future benefits, in line with other forms of capital (Adler & Kwon 2002; Field 2003). Views on this matter vary, however, from the rather extreme opportunism of Burt (1992) to Putnam’s (1995) view that social capital is more an ‘endowment’ than an asset.

According to the ‘social capital as a public good’ view, social capital is considered a collective asset of a social group. It thus resides on the collective level, and is available to all members of the group regardless of who may have originally created or contributed to it (Portes, 1998; Woolcock & Narayan, 2001). Leana & van Buren (1999, 540) illustrate this view by noting that the direct beneficiary of social capital is the social unit as a whole, and that “individuals benefit of its presence or suffer from its absence in a secondary way”. In addition to Bourdieu (1983), the contemporary father of the notion of social capital, many sociologically oriented social scientists such as Coleman (1988), Fukuyama (2001), Putnam (1995), and Woolcock (1998), represent this view, and it has been applied particularly on the societal and other macro levels of analysis (see e.g., Lochner et al., 1999).

On the other hand, the different approaches to social capital include the ‘*bonding*’ (focusing on cohesive within-group ties) and ‘*bridging*’ (focusing on between-group linkages) schools (Adler & Kwon, 2002; Burt, 2000; Woolcock & Narayan, 2000). The more traditional bonding view stresses the effect of social ties that bond people together, thus increasing cohesiveness and collectivity, and facilitating trust and cooperation between actors (Gargiulo & Benassi, 2000). This stream builds on Bourdieu’s (1983), Coleman’s (1988), and Putnam’s (1995) work. It emphasizes group belongingness, regardless of whether it is a small cohesive group with personal ties or a larger institutional assembly. Bonding social capital has been argued to have a number of positive, but also some potentially negative, consequences. The positive consequences include: (i) a willingness and ability among actors to subordinate individual goals to collective goals; (ii) benefits and obligations arising from mutual recognition; (iii) trust or gratitude; and (iv) social status, reputation or institutional rights derived from membership (Leana & van Buren, 1999; Nahapiet & Ghoshal, 1998). Conversely, strong coherent ties may also become a source of rigidity that hinders the accomplishment of complex organizational tasks and adaptation to change, or result in unjust patterns of social inclusion and exclusion (Gargiulo & Benassi, 2000; Quibria, 2003; Portes, 1998).

The bridging view of social capital refers to benefits stemming from brokerage opportunities created by bridging ‘structural holes’ in the market (Burt 1992, 1997, 2000). This approach builds on Granovetter’s (1973) idea of the strength of weak ties, and Burt’s (1992, 1997) widely recognized work on structural holes. Granovetter (1973) argued that weak ties, i.e. acquaintance relationships, could create linkages between different social groups. Burt, in turn, took Granovetter’s (1973) notion of weak ties, and argued that it was not the weak ties as such that drove the benefits, but the fact that they bridged structural holes, i.e. disconnections, within social systems. In other words, the structural hole argument posits that due to increased specialization, disconnections between different actors (that is, structural holes) emerge in social networks. Linking these otherwise disconnected actors (i.e. bridging or brokering structural holes) gives access to better or privileged information and opportunities, and higher control, thus leading to competitive advantage (Burt 1992, 1997, 2000; Burt et al. 2000). According to Burt (1992, 1997), these information benefits include access (to more and different information), timing (earlier access to information), and referrals (positive remarks to third parties leading to a better reputation).

As this study is concerned with the interaction between individual MNC managers rather than the social capital of an entity as a whole, the private-good view of social capital is applied in line with most work concerning organizational social capital. It is recognized, however, that individual social capital may also contribute to the social capital of groups or organizations (Brass et al., 2004; Kostova & Roth, 2003). Furthermore, my focus is on interpersonal cross-border relationships as bridging ties across the different units of the MNC.⁷ It should nevertheless be noted that the bridging and bonding elements are not necessarily exclusive of each other, but the bonding element of bridging ties may be very important indeed.

⁷ I should emphasize that, while I treat interpersonal cross-border relationships as bridging ties providing linkages between the different units of the MNC, these may not always be across pure structural holes in the strictest sense, i.e. in the sense that there are no other linkages between the two units. For me, unit boundaries represent disconnections prohibiting the flow of knowledge, and interpersonal ties provide conduits of knowledge sharing between these two differentiated bodies of knowledge regardless of their number.

Furthermore, I adopt Nahapiet & Ghoshal's (1998) definition of social capital, which not only relates to its bridging and bonding elements, but it is also widely recognized in the field of International Business research. They define social capital as "the sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network." (Nahapiet & Ghoshal, 1998, 243)

Nahapiet & Ghoshal (1998) look at both the structure of network ties, as well as their content, through three categories, which they name the structural, relational and cognitive dimensions of social capital. The structural dimension refers to the physical linkages between individuals or social units, including where, how, and to whom actors are connected. Secondly, the relational dimension relates to the behavioral assets and obligations embedded in relationships. These qualities include trust and trustworthiness, norms and sanctions, obligations and expectations, identity and identification with a group; i.e. the bonding aspects of network relationships. Thirdly, the cognitive dimension, introduced by Nahapiet & Ghoshal (1998), refers to shared paradigms, interpretations and systems of meaning, including aspects such as shared discourse and narratives, and shared behavioral and linguistic codes. The Nahapiet & Ghoshal (1998) framework is illustrated in Figure 3 below.

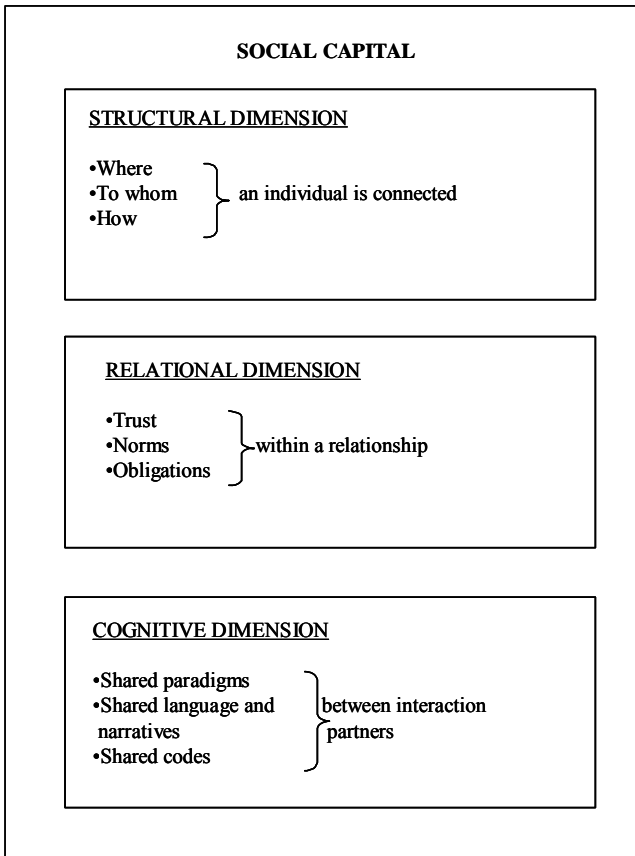


Figure 3. A Three-dimensional Framework of Social Capital (adapted from Nahapiet & Ghoshal, 1998).

My focus is on interpersonal relationships as bridging ties between different MNC units (Adler & Kwon, 2002; Burt 1992, 1997), and I draw upon Nahapiet & Ghoshal’s (1998) work on the three dimensions of social capital. Building on the social network and social capital approaches discussed above, I will now discuss the relevance of interpersonal interaction to the flow of knowledge within the MNC, thereby leading to the development of the theoretical framework of the thesis in Chapter 3.

2.2.3. Interpersonal Interaction and MNC Knowledge Flows

Interpersonal interaction may play a crucial role in the effective sharing of knowledge within the MNC by creating channels through which knowledge can flow between the different units. As Brass et al. (2004) argue in their recent *Academy of Management Journal* article, “[w]hen two individuals interact, they not only represent an interpersonal tie, but they also represent the groups of which they are members. Thus, inter-unit ties are often a function of interpersonal ties, and the centralities of units are a function of their members’ connections.” Consequently, interpersonal interaction between the members of two organizational units is by necessity an essential part of any unit-level knowledge transfer process, and while these interactions can be aggregated into unit-level measures, the aggregate measures may mask important aspects of knowledge exchange (Foss & Pedersen, 2004). Furthermore, another important point that may have been overlooked in the current literature is that knowledge exchanges are not necessarily purposefully initiated transfer processes, but also typically occur during the everyday life of the MNC when managers interact in order to do their work.

The importance of interpersonal cross-border relationships lies in their ability to create bridging ties across the different MNC units through which the knowledge residing in these differentiated bases can be exchanged. Due to the size and geographical dispersion of the multinational operation, and the specialization of its different functions, disconnections (i.e. structural holes; Burt, 1992) are likely to emerge between the different units. Managers bridging these disconnections are able to link to knowledge on both sides of the structural hole. As Burt (1997, 341) puts it, “[a] structural hole indicates that the people on either side of the hole circulate in different flows of information. A manager who spans the structural hole, by having strong relations with contacts on both sides of the hole, has access to both information flows.” Moreover, these bridging relationships may create conduits through which knowledge can flow across organizational and geographical boundaries, and in so doing they function as ‘boundary spanners’ (Beechler et al., 2004; Cross & Prusak, 2003; Kostova & Roth, 2003). This boundary-spanning ability is important as it enables two-way interaction (Nohria & Eccles, 1992) to take place in conjunction with daily operational problem-

solving, as opposed to more formal means of knowledge exchange such as company intranets, conferences, and top-management visits and meetings which are more detached.

Having established the relevance of interpersonal cross-border interaction as a fundamental issue influencing the mobilization of knowledge within the MNC, I will now proceed to develop the theoretical framework of the study.

3. THE DEVELOPMENT OF THE THEORETICAL FRAMEWORK

As stated earlier, the main research question of the study is the following: “*How is knowledge being shared in the interpersonal cross-border relationships of MNC managers?*”. In order to address this question I have developed a theoretical framework built on several layers of social, interaction-related factors influencing knowledge sharing in interpersonal cross-border relationships. In the following I will introduce the layers, discuss how they relate to each other, and then explain how the four essays constituting this work fit into this theoretical framework.

If we break the phenomenon of ‘knowledge sharing within interpersonal cross-border relationships within the MNC’ into its constituent parts, we can identify several potentially influential aspects. First, there is the knowledge, i.e. the properties of the knowledge that is being shared. Secondly, there are the two (or more) individuals concerned. Thirdly, there is the relationship between the interaction partners. Fourthly, there is the cross-border element, i.e. the fact that the interaction partners are embedded in two particular work groups located in two different MNC units. Fifthly and lastly, there is the MNC element, i.e. its differentiated and dispersed nature across different geographies and cultures.

If we exclude the properties of the knowledge itself which have been discussed extensively in the literature (see Argote et al., 2003, for a review), and focus on the social aspects of interpersonal level knowledge sharing, we can derive four layers of influencing factors from the above. The most basic layer is the individual level, on which factors such as personal characteristics and traits, cultural dispositions, and an individual’s motivation to share and absorb knowledge may have a major effect on the effectiveness of interpersonal knowledge sharing (Foss & Pedersen, 2004). The next layer includes factors related to the relationship between the interaction partners, such as its structural, relational or cognitive dimensions (Nahapiet & Ghoshal, 1998). The third layer includes factors related to the immediate relationship context, i.e. related to the interface between two managers embedded in different units, groups and

communities (Wenger, 1998). Finally, the fourth layer consists of the overall context of the MNC, including the differentiated and dispersed nature of the multinational organization across a number of geographical, cultural and linguistic boundaries (Westney, 2001). These four layers are illustrated in Figure 4 below. As examination of all four is beyond the scope of one doctoral thesis, I will focus here on the three layers directly related to interaction (relationship, immediate interaction context, and overall MNC context) and leave that of the individual(s) for further study.

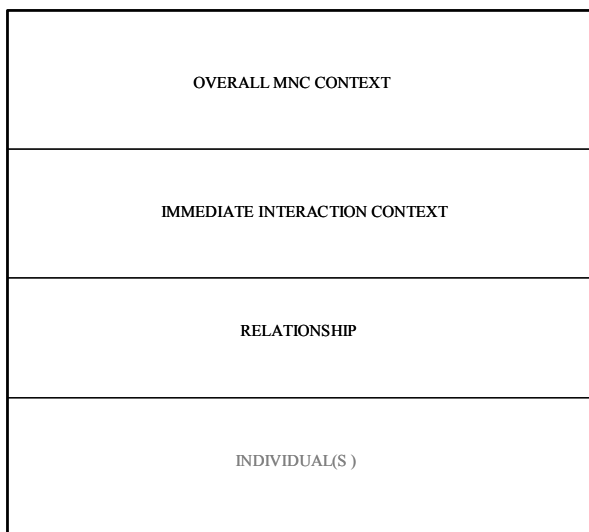


Figure 4. Four Layers of Social Factors Influencing the Effectiveness of Interpersonal Cross-Border Knowledge Sharing

The main research question of the study is approached in such a way that each of the four essays adopts a different perspective. More specifically, Essays 1 and 2 focus on the relationship layer in line with Sub-question 1, and Essays 3 and 4 examine the layers of the immediate interaction context and the overall MNC context respectively, in line with Sub-question 2. It should be noted, however, that even if each of the essays focuses on one particular layer for the purpose of analytical clarity, the different layers are both interlinked and overlapping, and influence each other. This is important, as knowledge

exchanges do not typically occur in a vacuum but rather interact with each other dynamically, and influence and are influenced by all other actions within the organization in complex and unpredictable ways (Marion, 1999; Marion & Uhl-Bien, 2001; Stacey et al., 2000).⁸ The theoretical framework of the study presented in Figure 5 below illustrates the interface between the different layers, as follows.

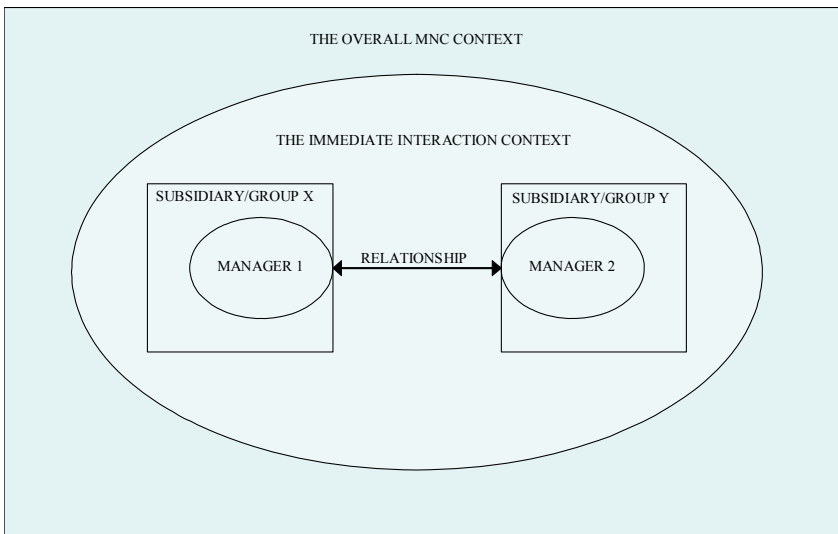


Figure 5. The Theoretical Framework of the Study: Three Layers of Social Factors Influencing Interpersonal Cross-Border Knowledge Sharing within the MNC

This study picks up four issues of interest that seem particularly relevant for the research phenomenon. Essay 1 takes a cross-sectional look at relationship characteristics across a variety of different interpersonal relationships (relationship layer, addressing Sub-question 1). Essay 2, in turn, focuses on a specific type of cross-border relationship, namely expatriate relationships, which have been identified as bearing particular significance in terms of cross-border knowledge flows (Bonache & Brewster, 2001; Bonache et al., 2001; Downes & Thomas, 2000) (relationship layer, addressing Sub-question 1). Essay 3 focuses on the immediate interaction context between managers embedded in two different units (immediate interaction context,

⁸ For the scope of this study it is sufficient to recognise the dynamic interdependence of different interactions and levels, rather than to focus on them specifically. For those interested, there is specialised

addressing Sub-question 2). Finally, Essay 4 examines some underlying patterns of interpersonal knowledge sharing across the whole of the MNC (overall MNC context, addressing Sub-question 2).

Moreover, the four essays use a number of different theoretical lenses through which to examine the issues of interest identified on each of the layers. Essay 1 draws on the literature on social networks and social capital theory to explain how different relationship characteristics influence knowledge sharing in interpersonal cross-border relationships. Essay 2 combines social capital theory with the literature on international human resource management (IHRM) to examine knowledge sharing in expatriate relationships. Essay 3 examines knowledge sharing from the perspectives of knowing and practice, which, as discussed, is relatively new in the literature on international business, but has a longer tradition in organization theory. Finally, Essay 4 uses the concepts of homophily and clustering drawn from social network theory to examine some underlying patterns of knowledge sharing across the MNC. Figure 6 below summarizes the different focus areas and the theoretical perspectives applied in the study.

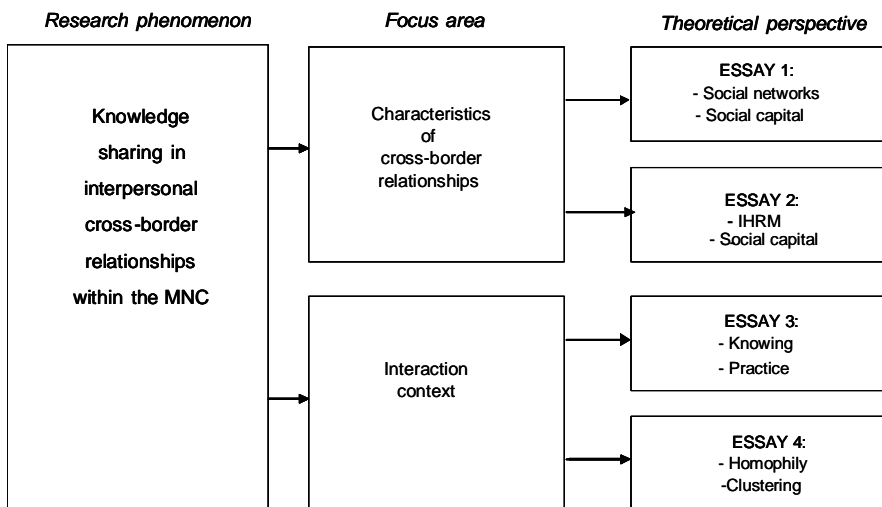


Figure 6. The Focus Areas and Theoretical Perspectives Applied in the Study

literature on dynamic and complex systems focusing on the non-linearity and unpredictability of

In addition to the multiple perspectives discussed above, methodological triangulation is used in order to gain a more balanced understanding of the phenomenon of knowledge sharing in interpersonal cross-border relationships (Bryman & Bell, 2003; Hurmerinta-Peltomäki & Nummela, 2004; Tashakkori & Teddlie, 1998). The next chapter describes the methodology of the study, in which both qualitative and quantitative research methods were combined.

organisational systems. See e.g., Ståhle et al. (2003) for an excellent review of this paradigm.

4. METHODOLOGY

The research questions of the study are addressed by using both qualitative and quantitative research methods. Consequently, the empirical material for the four essays comes from two different sets of data: (i) a qualitative embedded in-depth case study of the knowledge sharing patterns of 22 MNC managers within one focal organization; and (ii) a quantitative cross-sectional analysis of 518 interpersonal cross-border relationships using structural equation modeling.⁹ Essay 1 uses the cross-sectional quantitative data set, and Essay 2 focuses on the individual level findings of the case study. Examples of knowledge sharing instances derived from the case interviews are analyzed in Essay 3, using the embedded case data. Finally, Essay 4 combines the case study described above with two other sets of case-study data collected by the co-authors of the essay. In addition to offering the benefits of triangulation, the combination of qualitative and quantitative material was felt to provide a holistic set of data that covered more aspects of the phenomenon than if one research approach had been used (Bryman & Bell, 2003; Creswell, 1994; Hurmerinta-Peltomäki & Nummela, 2004; Jick, 1979; Tashakkori & Teddlie, 1998). Furthermore, as Birkinshaw (2004) argues, using both qualitative and quantitative data facilitates more rigorous treatment and full understanding of a phenomenon.

Each of the methodologies used is now described in detail. I will start with the qualitative part of the study, as this was conducted first, and in many ways influenced the collection of the quantitative data set. In spite of the order in which the empirical data collection took place, the final order of essays is such that the findings from the quantitative data set are discussed first in Essay 1, and then followed by the findings derived from the qualitative work in Essays 2, 3 and 4. As all the research questions are ‘how’ questions, the qualitative research method by necessity had a slightly larger role in terms of the number of essays it informed (Yin, 2003a). However, the role of the quantitative part is perhaps more important, as I consider Essay 1 to be the empirical

⁹ This chapter gives a detailed account of the methodologies used. As each of the essays also provides a description of the respective methodologies, there will by necessity be a large degree of repetition. This is

foundation upon which the rest of the thesis builds. The foundational role of the relationship characteristics is obvious from Figure 4, presented in the previous chapter. Moreover, Essay 1 has clearly more to do with theory testing, while Essays 2, 3 and 4 seek to extend theory (Eisenhardt, 1989). Appendix 1 illustrates the different phases of the research process (following Yin, 2003a).

4.1. The Qualitative Part of the Study

The case study method was used in the qualitative part of the study to provide rich contextual data, and to enable the examination of both interpersonal and organizational levels of analysis simultaneously. The case study method has a distinct advantage over many other methods when ‘how’ questions are being posed (Yin 2003a), such as in this study. Furthermore, as Birkinshaw (2004) notes, a case study analysis with 20-30 observations is an effective method if the phenomenon under investigation is relatively novel, such as interpersonal cross-border knowledge sharing. This study adopts an embedded in-depth case study design, in which multiple cases of individual MNC managers (n=20 in Essay 2, and n=22 in Essay 3) are embedded in one focal organization (Yin 2003a, 2003b).

The research setting is Procter & Gamble, a world-leading MNC within the fast-moving consumer goods industry with its headquarters in the United States, operations in 80 countries, and sales in 140 countries. The company could be described as a differentiated global network, within which the daily operational work of the organization involves frequent interaction between managers across the different MNC units. The company’s Nordic operations, consisting of regional headquarters in Sweden and to-the-market operations in Finland, Denmark and Norway, were chosen as the focal organization. This provided a context in which a host of different examples of cross-border interaction could be observed both within and outside the region. The data collection for the qualitative part of the study was conducted during an eight-month period between November 2003 and June 2004.

essential, however, as readers must be able to assess both the theoretical part of the study as well as the

The case managers worked within the sales and marketing departments, and were involved in cross-border interaction as a part of their everyday work. The majority of them were currently based in either Sweden (n=11) or Finland (n=8), but the country sales managers from both the Norwegian and the Danish subsidiaries (n=2) were included to verify whether the findings were consistent across managers working in all the Nordic units. Moreover, one of the managers was on assignment at the European headquarters in Switzerland at the time of the interview (n=1), but had extensive recent experience of all the Nordic countries, thus providing invaluable insight from both within and outside of the Nordic units. This interview was conducted over the telephone; all the other interviews were conducted face-to-face in either Sweden or Finland.

All the case managers interacted with colleagues outside of their own unit on a regular basis, both within and beyond the Nordic region. Typical interaction instances included cross-border interaction between marketing teams and key-account teams, and interaction between the different functions such as sales, marketing, logistics and finance. These interactions took place both within the Nordic region, between the Nordic region and the European Headquarters, and between the Nordic region and other country operations. Furthermore, 12 of the case managers had either current or previous expatriate experience, whereas 10 had only domestic experience. In Essay 2, 10 of the 12 case managers with expatriate experience, and all of the case managers with only domestic experience, were used in order to compare between two groups of an even number. Furthermore, two of the case managers were in a position in which they were responsible for expatriate assignments, and it was therefore logical to use them as key informants rather than cases in Essay 2. The case managers were of Finnish, Swedish, Danish and South-African origin. Those who had expatriate experience acquired it within the Nordic region, in other European markets, at the European headquarters in Switzerland, or at the corporate headquarters in the United States.

individual essays independently of each other.

Semi-structured interviews and observation were the primary sources of data, but were used in conjunction with several other sources as follows. First, formal research interviews lasting between 60 to 120 minutes for managers with expatriate experience, and between 45 to 60 minutes for those with only domestic experience, were conducted. Secondly, additional follow-up interviews and informal discussions were also carried out with the case managers in order to get clarification or to dig more deeply into interesting issues. The interviews were conducted in English, Finnish or Swedish. Thirdly, to complement the interview data, a total of five days were spent in the research sites for observing and discussing with managers working within the Nordic operation (six half days in Finland and two full days in Sweden). Although the observational material was not systematically coded in the same manner as the interview data, it provided invaluable insight into the research phenomenon. Fourthly, a research journal was written throughout the research process, in which insights emerging during the process were jotted down. Fifthly, a number of internal documents and the company intranet were used to support the analysis; these documents were not analyzed explicitly for confidentiality reasons, but they provided important insights into the various ways in which cross-border interaction took place. Sixthly, a host of internal and external documents, including annual reports, organization charts, the Company website, and news archives, were used to gain further understanding of the focal organization. Finally, my previous work experience within the case company gave me access to it, as well as a better understanding of the everyday life of the case managers. As knowledge sharing is typically both contextual and situated in everyday work practice (Cook & Brown, 1999; Lave & Wenger, 1991), this significantly facilitated the comprehension of the research phenomenon (Gummesson, 1991; Johns, 2001).

The interview questions focused on how the case managers interacted with colleagues outside their own unit, and sought and shared knowledge, by using questions such as, *“What are the typical ways and situations in which you communicate with your foreign colleagues?”*, *“Who do you talk to outside your own unit?”*, and *“When you need information or advice for a work-related problem, what do you do?”*. Furthermore, more detailed questions and examples were asked to detect alternative behaviors in different types of situation. The perceived ease or difficulty of interaction and

knowledge exchange in different interaction situations also came under scrutiny. Moreover, the case managers who had expatriate experience were asked specific questions related to their expatriate assignment(s), such as, “*What do you think you have learned or how have you benefited from your international assignment(s)?*”, “*Has the organization benefited in any way?*” and “*Are you or have you been in contact with anyone you worked with or you know from the assignment unit?*” Finally, follow up questions such as, “*Can you tell me more about that?*” were asked in order to probe more deeply into issues of interest. The case study protocol and the interview guide are provided in Appendix 2.

The interview data was analyzed using replication logic, following Eisenhardt (1989) and Yin (2003a). All the interviews were taped and transcribed, and a record was created for each case, including a detailed description of the roles, career histories and work contexts of the case managers. The data analysis started during the field work as a continuous reflective and iterative process between data collection and analysis (Eisenhardt, 1989) through use of a research journal, and continued after all of the data had been collected. The interview data was first carefully re-read and reflected on several times to allow deep familiarization with it. It was then coded according to observations and insights arising during the fieldwork and analysis processes, and tentative categories of different patterns of knowledge sharing were formed (Miles & Huberman, 1994). The final categories emerged through iterative tabulation of evidence for each construct (Eisenhardt, 1989). Finally, the data from the different cases were systematically compared and contrasted with each other in order to evaluate regularities and differences in the data.

4.2. The Quantitative Part of the Study

The quantitative part of the study consists of a cross-sectional analysis of 518 interpersonal cross-border relationships. The data was collected through structured interviews of Finland-based MNC managers, combining the name generator technique commonly used in social network analysis (Wasserman & Faust, 1994) with LISREL

structural equation modeling (*Linear Structural Relations*; Jöreskog & Sörbom, 1999). This combination of methods allows cross-sectional examination of the characteristics of a large number of interpersonal cross-border relationships across a number of companies and industries. While it shares the limitation of traditional statistical methods of providing egocentric data from the respondent only, rather than dyadic data from both parties of the relationship as achieved by social network analysis, it enables large-scale cross-sectional analysis on the relationship level that neither method alone would have been able to achieve.

The relationship-level data (n=518) was derived from structured interviews with 57 Finland-based MNC managers routinely involved in intra-company cross-border interaction. The respondents were obtained through a carefully planned procedure that was designed to increase the external validity of the study in the absence of existing databases, by obtaining a maximum cross-sectional spread of different contexts and types of relationships within the framework of Finland-based MNC managers doing international work (Bryman & Bell, 2003).

First, all the respondents had to fulfill the pre-set criterion of currently holding a position within an MNC involving frequent cross-border interaction with colleagues within the same company abroad. Secondly, managers fulfilling this criterion were identified using theoretical sampling following a two-step procedure. The target MNCs were first identified from the Talouselämä list of the 500 largest companies operating in Finland (Talouselämä, 2005). The Talouselämä 500 list was then grouped into Finnish MNCs and subsidiaries of foreign MNCs, so that both headquarters and subsidiary managers would be included in the sample. Furthermore, some rapidly internationalized smaller MNCs were added to ensure a maximum spread of different relationship types and environments. At the second step, individual managers fulfilling the criteria were identified within the MNCs in the Talouselämä list in descending order (primarily domestic operations were excluded) through multiple routes (including corporate communications, corporate HR, existing contacts within the companies, third-party referrals and snow-balling), and approached with a request for an interview. A maximum of three interviewees were sought in one MNC to avoid company bias.

Furthermore, a variety of roles, ages and functional backgrounds of both male and female managers was aimed at.

The resulting sample consisted of 57 managers from 35 MNCs that were among the very biggest corporations operating in Finland (the identities of the individuals and companies are concealed for confidentiality reasons). It also included individuals working in 17 different industries, including ICT, pulp & paper, metal, chemicals, electronics, energy, food & beverages, and services. Some key sample characteristics are summarized in Table 2 below.

<u>Key Sample Characteristics</u>	
Industries within the sample	17
MNCs within the sample	35
Managers within the sample	57
- male	42
- female	15
Relationships within the sample	518

Table 2. Key Sample Characteristics.

The structured interviews were conducted during spring 2005, lasting approximately 30-45 minutes each. Prior to being introduced into the field, the questionnaire went through an intensive series of pre-tests during spring-autumn 2004, with alterations being made after each test round (DeVellis, 2003; Fowler, 2002). The operationalization of the constructs is described in detail in conjunction with Essay 1, and the interview questionnaire is given in Appendix 3. When I was conducting the interviews I went through the questionnaire together with the respondent. The questionnaire language was English. Each respondent was being asked to identify up to 12 colleagues abroad with whom he or she had been in interaction during the previous 12 months, using the following name generator question: *“Think about all your colleagues who work within your company but outside your country. I would like you to indicate three colleagues with whom you have interacted during the last 12 months through each of the following means... [four categories given].* The actual wording of this question is given in

Appendix 3, which also includes the full questionnaire. This name generator question was designed to provide a maximum variety of relationship contexts, ranging from non-face-to-face, to meeting, project and team contexts, thereby avoiding the problem of only identifying strong relationships, which has been recognized as a typical risk involved in using the name generator technique (Lin, 2001).

The name generator question identified a total of 518 relationships (an average of nine per respondent), which were used as the unit of study, enabling robust statistical analysis of 518 observations on each of the questionnaire items. Personal researcher-led structured interviews enabled the collection of a complete data set with no missing values. These relationships bridged 39 countries and all six continents, providing a very good spread and therefore increasing the generalizability of the results. There was a natural bias towards the European countries, reflecting the overall structure of Finnish trade. The countries featuring the most individual relationships were Sweden, Russia, the United States and United Kingdom. A summary of the relationship spread is given in Table 3 below.

<u>Relationship spread</u>	
Number of countries in total	39 countries
Europe	427 relationships
North America	41 relationships
Asia	37 relationships
South America	8 relationships
Australia & New Zealand	4 relationships
Africa	1 relationship

Table 3. The Spread of Relationships in the Sample

The data was analyzed using LISREL structural equation modeling (Jöreskog & Sörbom, 1999; Jöreskog et al., 2000; Jöreskog, 2005). Structural equation modeling is a particularly appropriate method when testing causal relationships with latent constructs that are being measured on multiple indicators (Hayduk, 1987), as was the case in this study. The data analysis included the creation of a theoretical model, which was then

tested using confirmatory LISREL structural equation modeling. The operationalization of the constructs used in Essay 1, and their measures, are described in detail in the essay.

4.3. Validity and Reliability

This section discusses three aspects of validity, namely construct validity, internal validity and external validity, as well as the reliability of the study (Bryman & Bell, 2003; Yin, 2003a). Validity refers to the question of whether the study measures or records what it is intended to measure or record, while reliability is concerned with whether the results of the study are repeatable (Bryman & Bell, 2003; Tashakkori & Teddlie, 1998).

Construct validity relates to “the question of whether a measure that is devised of a concept really does reflect the concept that it is supposed to be denoting” (Bryman & Bell, 2003, 33), and refers to the establishment of correct operational measures for the concepts under study (Yin, 2003a). In the quantitative part of this study, construct (measurement) validity was taken into account in the careful design of the questionnaire (DeVellis, 2003; Fowler, 2002). First, all of the constructs were deduced from theory, particularly following the work of Hansen (1999, 2002); Kogut & Zander (1992); Nahapiet & Ghoshal (1998); Tsai & Ghoshal (1998); and Wasserman & Faust (1994). Secondly, operationalizations validated in previous research were used and adapted to the context of interpersonal cross-border interaction when possible (Tsai & Ghoshal, 1998; Wasserman & Faust, 1994). Thirdly, when previous word-to-word operationalizations were not available, questionnaire items were built by closely following previous key work concerning the particular construct (Hansen, 1999, 2002, on the measurement of the sharing of information and know-how respectively; Nahapiet & Ghoshal, 1998, on the measurement of the practice and discourse aspects of cognitive social capital). Essay 1 provides a detailed description of the questionnaire items and their sources.

Construct validity was addressed in the qualitative part of the study as follows. First, the data collection was informed by previous research in the fields of knowledge, networks and international human resource management (see the Literature Review in Chapter 2), and the research process incorporated repeated iteration and juxtaposing between theory and data (Andersen & Skaates, 2004; Eisenhardt, 1989; Pauwels & Matthyssens, 2004). Secondly, multiple sources of evidence, including interviews, observation, internal and public documents, and Internet and intranet data, were used (Yin, 2003a). Thirdly, the interview themes and questions were pre-tested on several managers involved in regular cross-border interaction, in order to assess their relevance (Yin, 2003a). Finally, a chain of evidence was established that included tape-recorded interviews following an interview guide (see Appendix 2), and a research journal in which the insights arising during the research process were jotted down (Yin, 2003a, 2003b).

Internal validity refers to the issue of causality, i.e. whether a suggested causal relationship holds (Bryman & Bell, 2003). For the quantitative part of the study, internal validity was addressed by examining the convergent, discriminant and nomological validity of the research. Convergent validity refers to the homogeneity of the constructs included in the model, i.e. whether each of them relates to its designated set of indicators only (Eriksson, 1998), and it was assessed by means of factor analysis and Cronbach's Alpha internal consistency measure. Discriminant validity refers to the assessment of the separateness of the constructs (Eriksson, 1998), and was assessed through factor analysis and the LISREL modification index. Finally, nomological validity refers to the goodness-of-fit of the whole causal model, and was assessed on the chi-square and degrees of freedom measures, together with a probability estimate (Jöreskog et al., 2000; Jöreskog, 2005). Indeed, the advantage of LISREL structural equation modeling is that it establishes the significance of all proposed causal relationships in one model. All three validity-assessment procedures are described in detail in conjunction with Essay 1.

In qualitative work, internal validity relates to the validity of interpretation (Mason, 2002; Yin, 2003a), and was addressed as follows. First, the data was carefully re-read, coded and categorized, following established procedures presented by Miles &

Huberman (1994) and Yin (2003a). Secondly, the research process included a systematic comparison of patterns found in the empirical data and an emerging theoretical explanation (Miles & Huberman, 1994; Pauwels & Matthyssens, 2004; Yin, 2003a). Thirdly, replication logic was used to ensure that the findings were consistent across all of the cases (Pauwels & Matthyssens, 2004; Yin, 2003a). Finally, for the purposes of Essay 2, the case study included carefully selected typical cases of managers with expatriate experience and those with domestic experience only, to detect differences in behavior between these two groups (Ghauri, 2004; Yin, 2003a).

External validity refers to the question of whether the findings of the study can be generalized beyond a particular research context (Bryman & Bell, 2003). External validity was assessed in the quantitative part of this study as follows. First, a carefully designed selection process was used for the theoretical sample, as described in Section 4.2., to ensure maximum variation of observations and thereby minimize the possible influence of exogenous factors such as company or industry influence. Secondly, while it was not possible to strictly follow the principles of random sampling due to the lack of databases, I would argue that the rigorous selection process involving a strategically selected range of contexts achieved a highly representative sample of Finland-based managers doing international work (Tashakkori & Teddlie, 1998).

Theoretical rather than statistical generalization was applied in the qualitative part of the study. In other words, the findings, explanations and conclusions were used to frame relevant questions in other contexts (Mason, 2002). As Ritchie & Lewis (2003) note, generalizations should be seen as working propositions, or ‘extrapolations’, on the applicability of the findings under similar but not identical conditions. Furthermore, external validity was addressed through replication (across 20 cases of individual managers in Essay 2, 63 instances of cross-border knowledge sharing in Essay 3, and three MNC cases in Essay 4), as suggested by Yin (2003a).

Reliability refers to the repeatability of the results of the study, and includes issues related to the stability of the investigation and the internal consistency of the measures (Bryman & Bell, 2003). Measurement stability was addressed in the quantitative part of

the study as follows. First, the data was collected through structured interviews, which allowed me to ensure that the instructions were followed accurately, to answer respondent questions, and to clarify the meaning of the questions when necessary (Fowler, 2002). Furthermore, as the questionnaire language was English, standard explanations in Finnish were prepared to ensure consistent understanding. These procedures increased the likelihood that the questions were answered consistently by all respondents. Secondly, I conducted all the interviews myself, which avoided the potential pitfalls of multiple interviewers in terms of training and inter-interviewer consistency (Bryman & Bell, 2003; Fowler, 2002). Finally, the structured researcher-led interview method enabled the collection of high-quality data with no missing values (Hair et al., 1998; Newton & Rudestam, 1999). Internal consistency was addressed by applying measures of discriminant and convergent validity, including Cronbach's Alpha measure for each of the latent constructs, as described earlier in this section.

Reliability was addressed in the qualitative part of the study through a careful research design (Yin, 2003a). This included (i) the selection of the focal organization so as to be representative of a differentiated network in which interpersonal cross-border interaction was a standard part of the daily operation of the MNC; (ii) the selection of the case individuals to provide typical examples of MNC managers involved in regular cross-border interaction (including managers with expatriate experience and those with domestic experience only); (iii) careful planning of the fieldwork, including site visits and data collection methods; and (iv) the design and testing of the interview guide so as to ensure that all relevant themes were covered in each interview. The case study protocol and the interview guide are given in Appendix 2.

Finally, the combination of qualitative and quantitative methods and an essay format enabled the use of triangulation, thereby promoting a more informed understanding of the phenomenon under study (Birkinshaw, 2004). This study used multiple means of triangulation, including both theoretical (multiple theoretical perspectives), methodological (the use of both qualitative and quantitative methods), and data (the use of different forms of data such as structured and semi-structured interviews, observation and archive material) triangulation (Hurmerinta-Peltomäki & Nummela, 2004;

Tashakkori & Teddlie, 1998). The choice of the theoretical perspectives and methods was driven by the overall thesis research questions, the specific issues addressed in each of the essays, and an aim to cover different aspects of a phenomenon that had not previously been studied extensively. The role of the different theoretical perspectives and research methods was such that they were used in parallel with each other, with the purpose of complementing each other, validating the results, and facilitating the interpretation of the findings (Hurmerinta-Peltomäki & Nummela, 2004). Consequently, while the validity and reliability of both the qualitative and quantitative work was addressed separately, the very use of theoretical and methodological triangulation increased the validity of the study in itself. The subject of triangulation is discussed further in Section 7.1., in which the theoretical contributions of the study are reviewed.

5. SUMMARIES OF THE ESSAYS

This section summarizes the four essays constituting this thesis. An overview of the essays is provided in Figure 7, and short summaries of each one are presented thereafter. They were all written with a view to being published in a refereed journal as independent pieces of work, focusing on their respective aspects of the overall research phenomenon. The linkages between them have thus not been made explicit within them. The purpose of this section is briefly to summarize each essay, and at the same time to place them within the overall theoretical framework presented in Chapter 3. The complete essays are provided in Part II of the thesis.

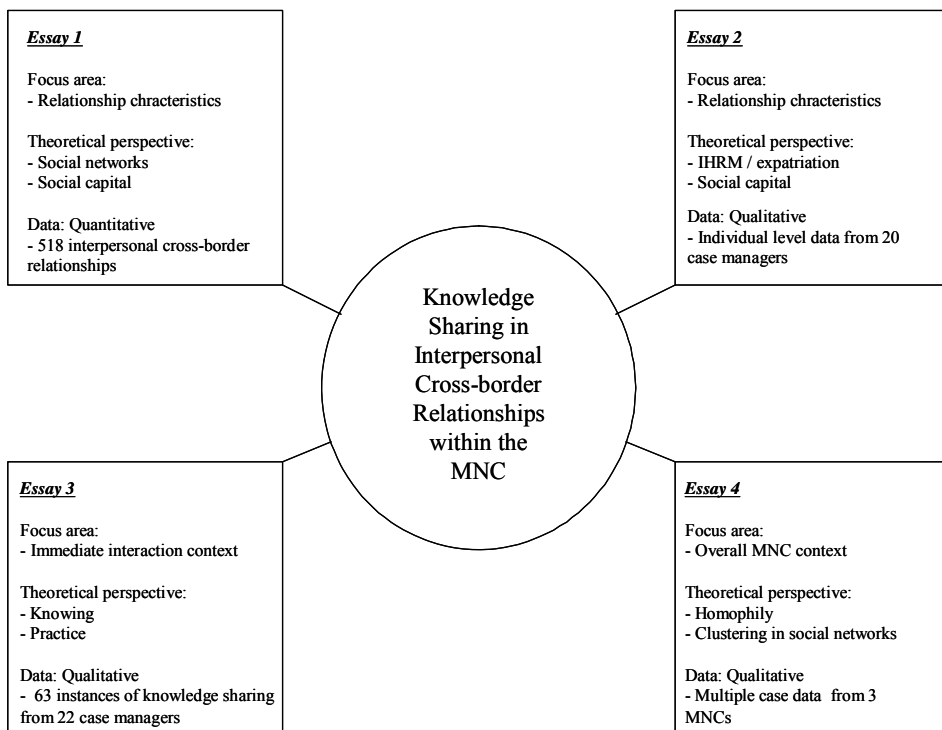


Figure 7. An Overview of the Four Essays

5.1. Summary of Essay 1

Mäkelä, K.: KNOWLEDGE SHARING IN INTERPERSONAL CROSS-BORDER RELATIONSHIPS WITHIN THE MNC

Essay 1 covers factors related to the relationship layer (see Figure 4 in Chapter 3) and addresses Sub-question 1, “*How do the relationship characteristics influence knowledge sharing in interpersonal cross-border relationships?*”. More specifically, this essay considers the characteristics of a wide range of interpersonal cross-border relationships both cross-sectionally and quantitatively, examining how different characteristics of relationships influence knowledge sharing within them. Figure 8 is an excerpt of the theoretical framework of the thesis presented in Figure 5 (Chapter 3), illustrating the aspect on which Essay 1 focuses.

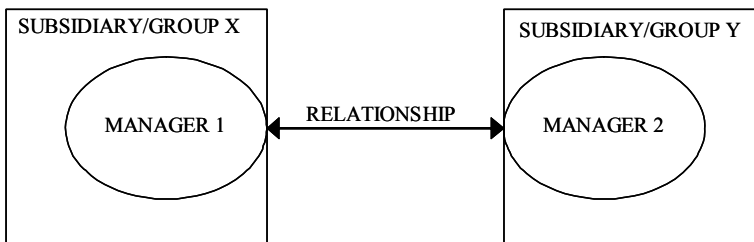


Figure 8. The Part of the Theoretical Framework Discussed in Essay 1

Essay 1 develops a model of knowledge sharing in interpersonal cross-border relationships within the MNC. Drawing upon social networks and social capital literature (Burt, 1992; Granovetter, 1973; Hansen, 1999, 2002), and particularly on Nahapiet & Ghoshal’s (1998) three-dimensional framework of social capital, it builds a model positing that knowledge sharing in interpersonal cross-border relationships within the MNC is driven by interaction frequency, interpersonal trust and shared cognitive ground. The model is then tested empirically on a cross-sectional sample of 518 interpersonal cross-border relationships, using a combination of the name generator technique (Wasserman & Faust, 1994) and LISREL structural equation modeling

(Jöreskog & Sörbom, 1999; Jöreskog, 2005), thereby facilitating analysis on the cross-sectional relationship level (see Section 4.2.).

The findings of this essay include the following. First, interaction intensity, trust and shared cognitive ground are shown to be important drivers of knowledge sharing in interpersonal cross-border relationships. Secondly, it is concluded that both non-face-to-face and face-to-face interaction influence knowledge sharing, but in different ways: non-face-to-face interaction is effective for the sharing of information, while face-to-face interaction is effective for the sharing of know-how. This indicates that both virtual means of communication and face-to-face interaction have important but different roles to play in ensuring the effective flow of knowledge within the MNC (Nohria & Eccles, 1992). Thirdly, it is established that shared cognitive ground is an important driver of knowledge sharing on the interpersonal level. This is a significant contribution as it supports Nahapiet & Ghoshal's (1998) original theoretical insight, which has been difficult to verify in previous unit-level research (e.g., Tsai & Ghoshal, 1998).

Essay 1 contributes to the overall thesis by highlighting the importance of relationship-level characteristics for knowledge sharing in interpersonal cross-border relationships. More specifically, it shows that structural, relational and cognitive characteristics of relationships are important factors to be considered, thereby providing the empirical foundation on which the other parts of the thesis are built. The full version of Essay 1 is provided in Part II of the thesis.

5.2. Summary of Essay 2

Mäkelä, K.: KNOWLEDGE SHARING THROUGH EXPATRIATE RELATIONSHIPS: A SOCIAL CAPITAL PERSPECTIVE

While the focus of Essay 2 is also on factors related to the relationship layer (see Figure 4 in Chapter 3), it extends the analysis undertaken in Essay 1 by concentrating on a specific kind of interpersonal cross-border relationship, namely expatriate relationships.

Essay 2 also addresses Sub-question 1 focusing on how the characteristics of interpersonal relationships influence knowledge sharing, but extends it by addressing the following specific empirical research question: “*How do expatriate relationships contribute to knowledge sharing within the MNC?*”. Consequently, like Essay 1, it targets the relationship layer of the overall theoretical framework of the thesis, as illustrated in Figure 9 below.

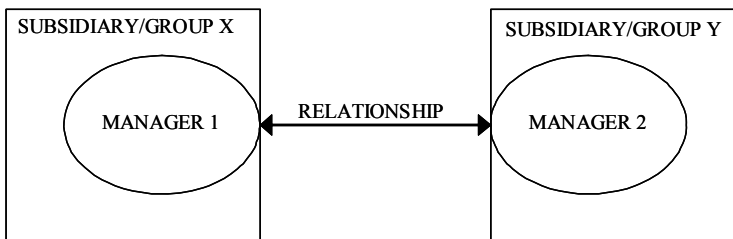


Figure 9. The Part of the Theoretical Framework Discussed in Essay 2

In Essay 2, expatriate relationships are examined as a particular type of interpersonal cross-border relationship that may have a greater influence on knowledge sharing within the MNC than previously recognized. Expatriate relationships are defined as interpersonal relationships expatriates form with their host-country colleagues while on assignment, lasting well beyond the actual length of the assignment. The essay combines IHRM literature with that of social capital, focusing on how the structural, relational and cognitive dimensions (Nahapiet & Ghoshal, 1998) of expatriate relationships influence knowledge sharing in them. Essay 2 is based on individual-level data from 20 MNC managers within the case organization, 10 of which were managers with expatriate experience and 10 had domestic experience only (see Section 4.1.).

Essay 2 finds that the network relationships expatriates build with their assignment-unit colleagues provide strong ties that function as channels of knowledge sharing across borders, lasting long beyond repatriation. It is suggested that, unlike other, more arms-length cross-border relationships, expatriate relationships have several typical characteristics that have direct consequences for knowledge sharing. First, shared

experience, physical proximity and extended face-to-face interaction during assignments create strong ties that are, on average, richer (i.e. to more and different people) and longer-term than other cross-border relationships. They also have a higher multiplication effect, spreading ties more effectively across new units when their assignment colleagues, including fellow expatriates, move on to third units. Secondly, expatriate relationships are characterized by a higher level of trust and multiplexity (i.e. involving both professional and personal aspects) than arms-length relationships, again driven by shared experience, physical proximity and prolonged face-to-face interaction during assignment. Finally, extended participation in the assignment unit typically leads to more shared cognitive ground, including an increased awareness of and identification with the thought collectives and codes of conduct present within that community, effectively facilitating knowledge sharing. The findings of Essay 2 are summarized in two propositions for further empirical testing: (1) Expatriate relationships have a higher level of social capital than other, more arms-length cross-border relationships; (2) A higher level of social capital in expatriate relationships leads to more knowledge sharing within them, than in other more arms-length cross-border relationships.

Essay 2 contributes to the overall thesis by highlighting the role of expatriate relationships in facilitating effective knowledge sharing within the MNC, and their sustained impact beyond the immediate repatriation stage. Furthermore, it identifies several typical characteristics of expatriate relationships, with clear implications for knowledge exchange. These include the influence of high levels of shared cognitive ground, reinforcing the importance of the cognitive dimension of social capital in line with Essay 1. Finally, it provides a relational perspective for looking at international assignments, which is a novel aspect in expatriation research. The full version of Essay 2 is given in Part II of the thesis.

5.3. Summary of Essay 3

Mäkelä, K.: Mäkelä, K.: SHARING KNOWING: A COMPLEMENTARY PERSPECTIVE FOR EXAMINING KNOWLEDGE EXCHANGE WITHIN THE MNC

The attention in Essay 3 switches to the context of immediate interaction (see Figure 4 in Chapter 3). Managers within the MNC are embedded in their respective units, groups and communities, and this has an influence on the effectiveness of interpersonal interaction. By focusing on the immediate interaction context, Essay 3 addresses Sub-question 2: “*How does the interaction context influence knowledge sharing in interpersonal cross-border relationships?*”. The part of the overall theoretical framework the essay focuses on is illustrated in Figure 10 below.

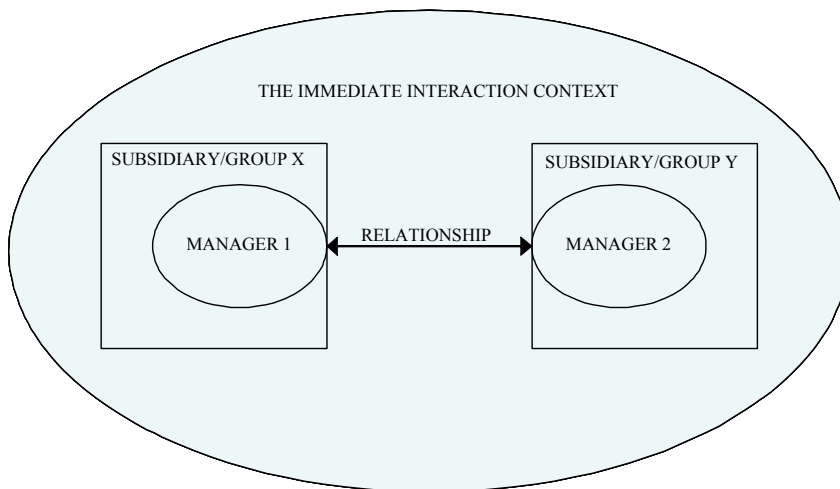


Figure 10. The Part of the Theoretical Framework Discussed in Essay 3.

The objective of Essay 3 is to examine the impact of the immediate interaction context on knowledge sharing in interpersonal cross-border relationships from the perspective of sharing knowing. It does this by addressing the specific empirical research question of how personal knowing is shared within interpersonal cross-border relationships. Moreover, it is argued that differentiation between knowledge and knowing may have

important consequences in terms of how knowledge sharing on the interpersonal level is understood. Essay 3 builds on the literature on knowing (Boland & Tenkasi, 1995; Cook & Brown, 1999; Orlikowski, 2002) and practice (Brown & Duguid, 2000; Lave & Wenger, 1991; Wenger, 1998). In this literature, 'knowing' is regarded as an innate part of action or practice, i.e. as something we do rather than something we possess, as argued in the more traditional view of knowledge (Cook & Brown, 1999). Essay 3 is based on a qualitative analysis of 63 instances of cross-border interaction derived from the interviews of the 22 case managers (see Section 4.1.).

Essay 3 presents the view that a significant part of knowledge sharing within the MNC occurs in the everyday interpersonal interaction between MNC managers whose knowing is embedded in the practice of their respective communities of knowing. In organizations this knowing in practice is distributed across different groups of specialized professionals, each dealing with a part of the overall task of the organization (Boland & Tenkasi, 1995). These communities of knowing are characterized not only by their different knowledge bases, but also by their differentiated 'thought worlds', language and narratives, codes of conduct and systems of meaning: in other words, their members are thinking and acting within their specific frames of knowing. Therefore, if the MNC is viewed not only as a differentiated network (Nohria & Ghoshal, 1997) but also as a *distributed network characterized by differentiated communities of knowing*, this gives an interesting perspective from which to view intra-company knowledge flows, particularly on the interpersonal level. Through the lens of sharing knowing, the focus of investigation shifts from the properties of knowledge and barriers to transmission, to what people do in their interaction (Orlikowski, 2002).

Of particular interest in Essay 3 was how personal knowing is shared in the interpersonal interaction between MNC managers across multiple boundaries. The boundaries may be geographical (i.e. across units located in different countries), functional (i.e. across structural and departmental boundaries), cultural (i.e. between managers coming from different cultural backgrounds), or linguistic (i.e. between managers with different mother tongues and language abilities). These represent cognitive boundaries, and six means for overcoming them were identified: (i) building

on existing shared cognitive ground; (ii) building new shared cognitive ground; (iii) using dialogue for perspective taking and making; (iv) using mediators; (v) using boundary objects; and (vi) using personal trust to transcend incommensurability.

The contributions of Essay 3 to the overall thesis are both theoretical and empirical. In the level of theory, it provides a novel and complementary perspective from which to examine knowledge exchange within the MNC, which is particularly appropriate on the interpersonal level. As its empirical contribution, the paper highlights the relevance of cognitive boundaries to interaction, and identifies six means of overcoming cognitive incommensurability. The full version of the essay is given in Part II of the thesis.

5.4. Summary of Essay 4

**Mäkelä, K., Kalla, H. & Piekkari, R.: Mäkelä, K., Kalla, H.K. & Piekkari, R.:
INTERPERSONAL KNOWLEDGE SHARING WITHIN MULTINATIONALS:
HOMOPHILY AS A DRIVER FOR CLUSTERING**

Essay 4 also addresses Sub-question 2, which focuses on how the interaction context influences knowledge sharing in interpersonal cross-border relationships, but it approaches this question on the overall MNC level (see Figure 4 in Chapter 3). Figure 11 below illustrates the focus of this Essay in relation to the theoretical framework of the overall thesis.

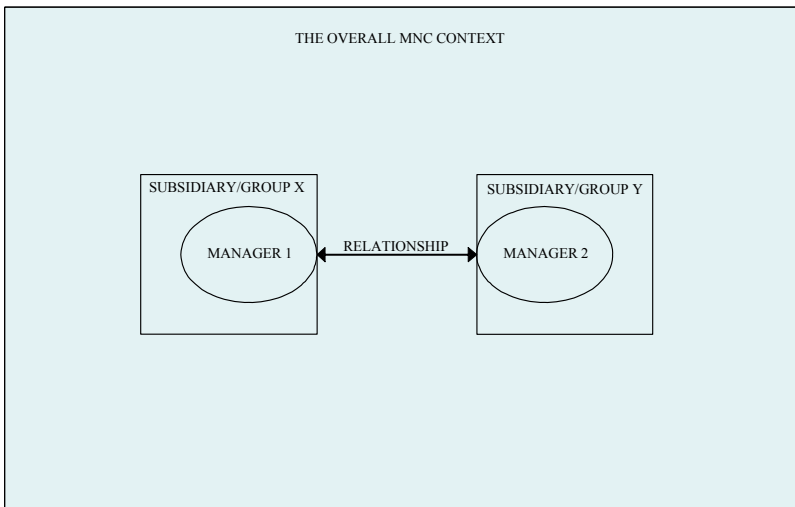


Figure 11. The Part of the Theoretical Framework Discussed in Essay 4.

The focus in Essay 4 is on factors that influence connectivity between MNC managers on the overall MNC level. It takes one such factor, homophily, defined as the tendency to interact with similar others, and examines how it influences knowledge sharing within the MNC. The specific research question under investigation is formulated as, “How does homophily influence knowledge sharing within the MNC?” Furthermore, while the starting point is homophily between individual managers, it is suggested that interpersonal homophily may have implications for knowledge sharing on the organizational level by producing an aggregate clustering effect. This clustering effect is defined as the formation of sub-groupings within networks, following a definition commonly used in the social networks tradition (as opposed to the co-location of firms as in economic geography) (Watts, 1999a, 1999b).

Essay 4 develops a conceptual framework according to which interpersonal homophily influences knowledge sharing within the MNC both directly on the interpersonal level and indirectly on the organizational level through an aggregate clustering effect. It uses the case data described in Section 4.1., and combines it with two other sets of case data collected by the co-authors of the essay in order to illustrate the framework being built. The essay focuses on three types of homophily, namely (i) the similarity of national-

cultural background, (ii) shared language, and (iii) the similarity of organizational status, as factors generating interaction between MNC managers. It is argued that homophily between two MNC managers increases their tendency to interact, and this in turn leads to increased knowledge sharing between them. Furthermore, it suggests that when the effect of interpersonal-level homophily is multiplied, i.e. when managers who share a similar national-cultural background, language or organizational status all have a tendency to interact with like others, it may produce an aggregate effect of informal clustering within the organization. The impact of this clustering effect, it is argued, is such that knowledge flows better within these informal clusters than between them. Finally, the conceptual framework that is developed is summarized in the form of four propositions for further empirical testing.

The essay contributes to the overall thesis in highlighting the importance of connectivity between the different actors within the MNC for the effective flow of knowledge within the organization. More specifically, it focuses on informal connecting points between MNC managers, such as those produced by homophily, as one factor explaining the uneven and often unpredictable patterns of internal knowledge flows within MNCs, as identified by Birkinshaw & Arvidsson (2004) and Marshan-Piekkari et al. (1999). The full version of Essay 4 is given in Part II of the thesis.

6. DISCUSSION

The theoretical framework presented in Chapter 3 focused on the main research question, “*How is knowledge being shared in the interpersonal cross-border relationships of MNC managers?*”. This question was further divided into two more specific empirical sub-questions which were addressed through the four essays. Essays 1 and 2 focused on Sub-question 1, “*How do the relationship characteristics influence knowledge sharing in interpersonal cross-border relationships?*”, and Essays 3 and 4 on Sub-question 2, “*How does the interaction context influence knowledge sharing in interpersonal cross-border relationships?*”. The purpose of this chapter is to draw the findings of the different parts of the thesis together. This involves two aspects. First, in Section 6.1., I consider how the joint findings of the four essays address the main research question, and do so by building on Figures 4 and 5 introduced in Chapter 3. Secondly, in Section 6.2., I discuss the consequences of interpersonal level knowledge sharing for the overall flow of knowledge within the MNC. These include both individual level micro consequences and the organizational level macro ones.

6.1. Factors Influencing the Effectiveness of Knowledge Sharing in Interpersonal Cross-Border Relationships

As explained before, this thesis addressed the research questions of the study by dividing the different factors influencing how knowledge is being shared in interpersonal cross-border relationships, into four layers of such factors. These included the layer of the interacting individuals, the relationship, the immediate interaction context, and the overall MNC context. Furthermore, this study focused on the latter three, which are directly related to interaction (i.e. excluding the layer of the individual(s)). The findings reported in the essays suggest that each layer is associated with specific factors influencing how knowledge is being shared in interpersonal cross-border relationships. First, Essay 1 and Essay 2 show that the characteristics of the relationship are important determinants of knowledge sharing on the relationship level. Secondly, Essay 3 suggests that in relation to the immediate interaction context, it is particularly important to consider issues related with boundary crossing, i.e. overcoming

cognitive boundaries between two managers coming from different ‘communities of knowing’ (Boland & Tenkasi, 1995; Wenger, 1998). Finally, addressing the overall MNC context, Essay 4 touches on the issue of internal connectivity, i.e. the overall patterns of linkages between the members of an organization. Figure 12 summarizes the factors influencing how knowledge is being shared in interpersonal cross-border relationships, linking back to Figure 4 presented in Chapter 3.

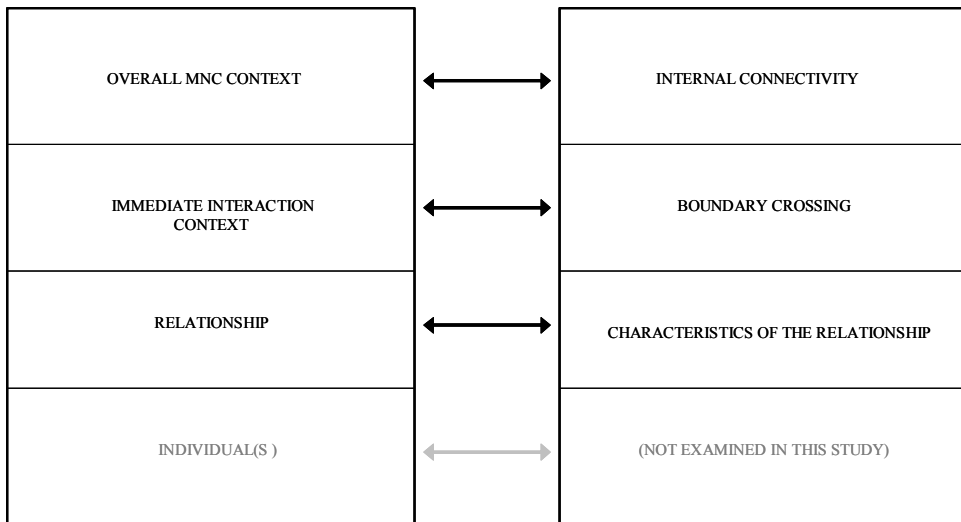


Figure 12. Key Factors Influencing the Effectiveness of Interpersonal Cross-Border Knowledge Sharing

Moreover, the findings of the four essays suggest that each of the factors associated with the various layers influences the effectiveness of interpersonal knowledge sharing across borders in a different way. Essay 1 focused on the relationship layer, concluding that the frequency of interaction, interpersonal trust and shared cognitive ground have a significant effect on knowledge sharing within interpersonal cross-border relationships. Also focusing on the relationship layer, Essay 2 develops this notion by suggesting that expatriate relationships provide strong cross-border ties that are more effective facilitators of knowledge sharing than other, more arms-length relationships. On average, they (i) are richer and longer-term, and thus create more opportunities for

knowledge sharing; (ii) have a higher multiplying effect, spreading ties more effectively across new units; (iii) are characterized by a higher level of trust and multiplexity, which is driven by shared experience, physical proximity and prolonged face-to-face interaction; and (iv) are characterized by a higher shared cognitive ground driven by extended participation in the assignment unit.

Essay 3 addressed the immediate interaction context. It was argued that when two MNC managers interact across borders, they need to overcome not only a geographical distance but also different cognitive boundaries between the two communities of knowing in which they are embedded. These cognitive boundaries may be cultural, linguistic or functional, and six means of overcoming them were identified: (i) building on existing shared cognitive ground; (ii) building new shared cognitive ground; (iii) using dialogue for perspective taking and making; (iv) using mediators; (v) using boundary objects; and (vi) using personal trust to transcend incommensurability on the interpersonal level. Finally, Essay 4 focused on the overall MNC context. It was suggested that knowledge is not shared evenly throughout the multinational corporation, and argued that in order to explain this phenomenon one should examine patterns of internal connectivity within the organization. Specifically, it was proposed that homophily, i.e. the tendency to interact with similar others, is a driver for clustering. This clustering effect, in turn, influences intra-company knowledge sharing in such a way that knowledge flows better within clusters than between them. Figure 13 below connects the different layers, the key influencing factors within them, and the key findings of the essays back to the original theoretical framework presented in Figure 5 in Chapter 3.

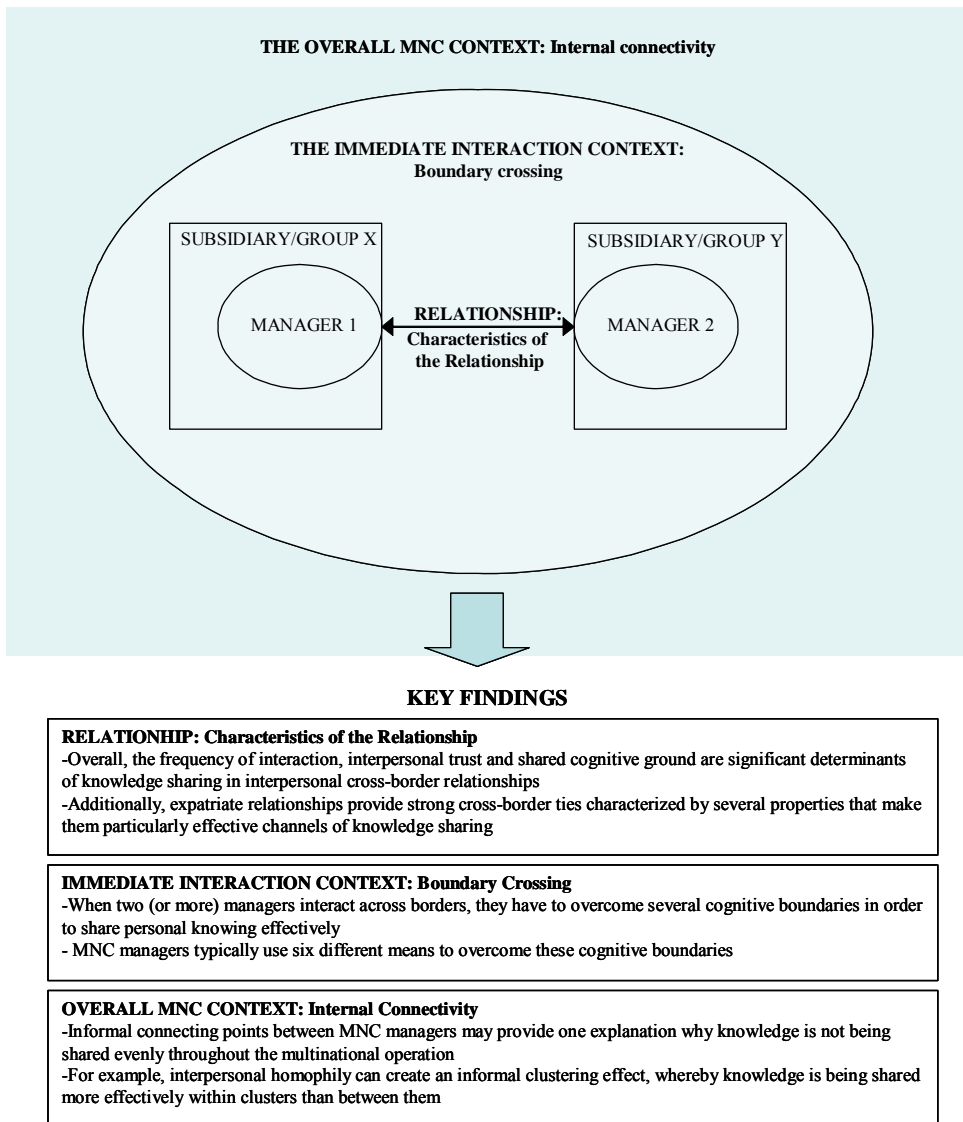


Figure 13. A Summary of the Findings of the Thesis.

6.2. Interpersonal Cross-Border Relationships and the Overall Flow of Knowledge within the MNC

Having discussed how knowledge is shared in interpersonal cross-border relationships, I will now consider the consequences of interpersonal knowledge sharing for the MNC both on the micro and macro levels. The micro level refers to the level of the individual MNC managers, the knowledge sharing on this level providing indirect benefits to the organization by enabling individual managers to do their work more effectively. The macro level, in turn, is concerned with the overall birds-eye perspective of the whole MNC.

6.2.1. Micro Level Consequences

It was established in Section 2.3.3. that interpersonal cross-border relationships can create channels through which knowledge residing in the differentiated groups and units of the MNC can be exchanged. Furthermore, it was argued that these bridging relationships could function as boundary spanners providing linkages across organizational and geographical boundaries (Adler & Kwon, 2002; Burt 1992, 1997). This is important as interpersonal interaction takes place on the operational level, which has the benefit of being close to and embedded in the daily work of the MNC. Furthermore, it is in contrast to the more formal means of knowledge sharing such as intranets, top-management meetings and visits, or internal conferences, which tend to be more detached from the day-to-day problem solving. This boundary-spanning characteristic of interpersonal cross-border relationships may have several important knowledge consequences on the micro level. These include benefits related to access to knowledge and to knowledge creation, but also some potentially negative consequences.

First, the access-to-knowledge related benefits are such that interpersonal cross-border relationships may provide managers with quicker and better access to knowledge, or access to new sources of knowledge that would have been difficult to obtain otherwise (Burt, 1992; Borgatti & Cross, 2003). These micro benefits of interpersonal cross-border knowledge sharing became evident particularly in the qualitative essays. For

example, in Essay 2, managers with expatriate experience reported continuous access-to-knowledge related benefits derived from their strong relationships with their ex-host-country colleagues: *“I can call them directly and get first-hand information of the background of the issues”*; *“You find things out so much quicker than through formal routes”*; *“It’s so much easier now when he knows me well as opposed to [the previous country manager] whom he didn’t really know, to get the inside scoop”*; *“I called him, and suddenly he got six people doing things, and then we were connected to some UK people who we’d otherwise never have known to talk to . . . if you move a lot . . . you start to have contacts everywhere”*.

Secondly, cross-border interaction can facilitate the creation of new combinations of knowledge when two previously disconnected knowledge bases and frames of knowing come into interaction. This knowledge creating consequence of interpersonal cross-border interaction makes it an invaluable aspect of the overall flow of knowledge within the MNC. As Tsoukas (2003, 426) argues, “[n]ew knowledge comes about not when tacit becomes explicit, but when our skilled performance – our praxis – is punctuated in new ways through social interaction”. In other words, interpersonal interaction is not just about sharing existing knowledge, it also involves creating new knowledge and knowing. Hardagon & Sutton (1997, 716) express it well: “[i]deas from one group might solve the problems of another, but only if connections between existing solutions and problems can be made across the boundaries between them. When such connections are made, existing ideas often appear new and creative as they change form, combining with other ideas to meet the needs of different users. These new combinations are objectively new concepts or objects because they are built from existing but previously unconnected ideas.”

The essays give an indication of how interpersonal cross-border relationships may have a key role to play in the creation of new capabilities and a new knowledge within the MNC. For example, it was argued in Essay 3 that when ‘people who know’ interact (McDermott, 1999), the thinking-in-interaction they engage in enables them to create new knowledge and new ways of knowing (Cook & Brown, 1999). Furthermore, the findings indicated that shared cognitive ground can be a powerful facilitator of this

coming-together of different bodies of knowledge and frames of knowing. In Essay 1, shared cognitive ground was found a significant determinant of interpersonal knowledge sharing. In Essay 2, shared cognitive ground within strong expatriate relationships was found to be an effective facilitator of cross-border knowledge exchange. The importance of overcoming cognitive boundaries was confirmed in Essay 3: *“There are situations all the time when interests are different and people don’t speak the same language... there is a fundamental kind of conflict ... the more we speak the same language and understand each other, the more optimal the result becomes”*. Moreover, six means of transcending incommensurability were identified in Essay 3. Finally, in Essay 4, interpersonal homophily, which is a key source of shared cognitive ground (Carley, 1991), was found to be an important driver of knowledge sharing within multinational organizations.

On the other hand, interpersonal level knowledge sharing may also have some potentially negative consequences. Although I argue in accordance with Inkpen & Tsang (2005) that interpersonal knowledge sharing has an overall positive effect on MNC knowledge flows, it is not without risks. There are three particularly relevant sources of potential downsides. First, interpersonal homophily may sometimes lead to the formation of informal in- and out-groups within the organization (Quibria, 2003; Portes, 1998). Essay 4 recognized that nationality, language and organizational status can become powerful dividers of how knowledge flows within the organization, and gave illustrative examples of such group formation. Secondly, clustering within organizations, as also observed by Essay 4, may “constrain the inflow of new knowledge and inhibit the search for new knowledge outside the established channels” (Hansen, 1999, 108). Although both of these downsides are perhaps more relevant for within-group ties than cross-border relationships, it is important to consider them. Thirdly, interpersonal cross-border interaction takes time and resources, and therefore carries a cost. In other words, more interpersonal interaction is not always better, but it should be used as a part of a wider palette. There are typically a variety of means of seeking and sharing knowledge within organizations, such as Intranets and various knowledge management tools, and each of these is effective for a different purpose. Furthermore, there are also various ways in which interpersonal interaction can take

place, including e-mail, various net-based tools, telephone, and face-to-face meetings, and each can be used for different purposes. As identified in Essay 1, non-face-to-face means may be more effective for the sharing of information, whereas face-to-face interaction seems to be particularly effective for the sharing of know-how.

6.2.2. Macro Level Consequences

Furthermore, in addition to their important micro-level consequences, interpersonal cross-border relationships may also have a macro level aggregate effect on the overall flow of knowledge within the MNC. This insight came during the case study fieldwork and was further developed in the case study analysis process and when the overall thesis was put together. While the four essays do not directly address the macro-level consequences of interpersonal cross-border knowledge sharing on the overall knowledge flow of the MNC, I felt that this insight was of enough importance to require a focused discussion on its own right.

It was apparent from the holistic case data that not only do interpersonal cross-border relationships provide bridging ties, but by doing so they may also provide shortcuts between the differentiated MNC units. For example, it is often the case in large MNCs that two or more groups in different business units or geographical areas work on similar or complementary issues without being aware of each other. Connecting and integrating the knowledge residing in these separate groups would obviously be of great advantage to the overall organization, a sign of which is the proliferation of various intranet systems for 'search and reapply' type of knowledge management. Interpersonal relationships have the potential to provide effective shortcuts between disconnected groups or units within the organization, as opposed to the formal routes up the hierarchy or through Intranet searches. Figure 14 illustrates the shortcutting potential of interpersonal relationships in comparison to formal hierarchical routes.

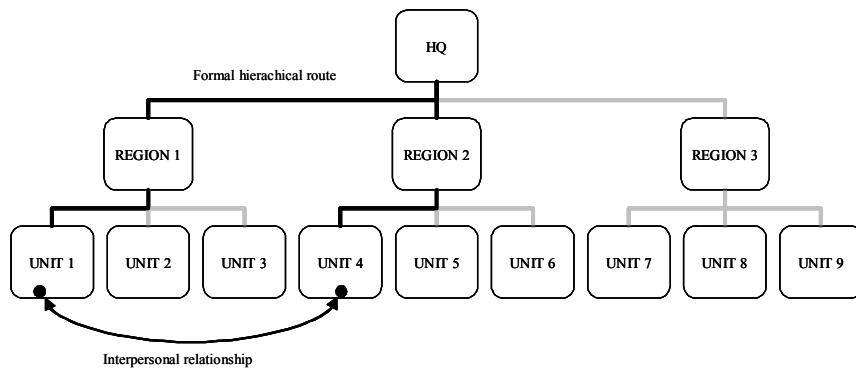


Figure 14. An Illustrative Example of the Shortcutting Potential of Interpersonal Relationships.

The aggregate effect such shortcuts is that they can provide an effective means of knowledge mobilization across the organization. More specifically, they may contribute to a ‘small-world effect’ (Watts, 1999a, 1999b) within the organization. The term ‘small world effect’ refers to Watts’s (1999a, 1999b) small-world theory which is a formalized theoretical and mathematical explanation of the popular anecdote saying ‘It is a small world’, used when two people who apparently have very little in common find unexpectedly that they share a mutual acquaintance. In its more generalized form, and as made popular by the well-known expression ‘Six degrees of separation’, it suggests that any individual could typically be linked to any other individual in the world by only a small number of intermediate acquaintances (Barabasi, 2002; Watts, 1999a, 1999b).

The formalized small-world phenomenon has important theoretical and practical implications. As Granovetter (1973) proposed, social systems consist of subgroups of closely connected people - be they families, work colleagues, friendship circles, school alumni or interest groups - which are loosely linked to each other by acquaintance ties. In network language, these subgroups of people are referred to as clusters (as opposed to clusters of co-locating firms in the economic geography sense, see Essay 4). As Watts (1999a, 1999b) observed, a small number of shortcuts between clusters may lead to the coexistence of high local clustering and a small global length scale. In other

words, shortcuts “convert a big world into a small one” (Baker, 2000, 83), i.e. drastically decrease the average separation between any two nodes within a network (Barabasi, 2002). Figure 15, adapted from Watts (1999a), illustrates the small-world effect of shortcuts.

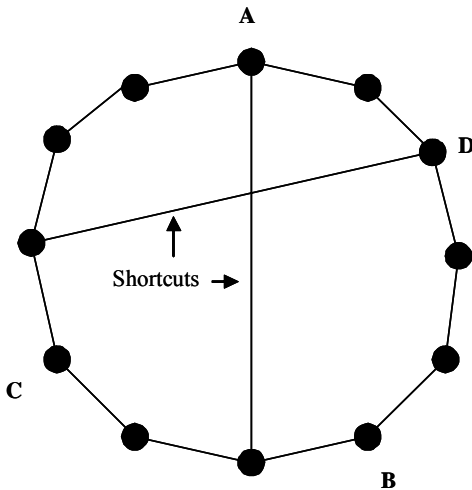


Figure 15. The Small-World Effect of Shortcuts (adapted from Watts, 1999a, 1999b) [The black dots (nodes) represent people or groups of people, and the lines (ties) represent connections between two people or two groups. The distance from A to B is 5 when using the ‘normal’ route, and 2 when using a shortcut. Similarly, the distance from C to D is 6 when using the normal route, and 2 when using a shortcut.]

What is interesting here is that, if Watts (1999a, 1999b) is right, a relatively small number of interpersonal boundary-spanning relationships should provide an effective means of increasing connectivity within the MNC. While each individual interpersonal tie is used according to local rationalities, the aggregate of the individual relationships as a whole may have knowledge sharing implications beyond the sum of the individual micro-level effects, by creating an effective routing system for the internal mobilization of knowledge. Consequently, interpersonal cross-border relationships could prove to be a fundamentally important facilitator of the sharing, integration and creation of new knowledge within the organization. Internal connectivity is important, because bringing diverse bodies of knowledge and frames of knowing together increases the capacity of the MNC to create innovative products, services and processes across global markets (Doz et al., 2001). This shortcutting facility would assume particular significance within

the MNC, as its dispersed nature creates disconnections that are very difficult to overcome through structural design.

Naturally, and as already argued in the previous section, more is not always better. In other words, creating interpersonal relationships is not an end in itself, but should rather be seen as a facilitating activity. Organizations should therefore not strive to maximize the number and strength of interpersonal cross-border relationships as they carry a cost, but should rather create strategic interpersonal level ties where they matter most. This strategic aspect is discussed in more detail in Section 7.2.

In sum, this chapter has discussed the findings of this thesis as follows. First, by drawing the findings of the four essays together, it established that four layers of social factors influence how knowledge is being shared in interpersonal cross-border relationships. In the layer of the relationship, the characteristics of the relationship are important determinants of knowledge sharing. In the layer associated with the immediate interaction context, the issue of boundary crossing is particularly relevant, and for the layer concerned with the overall MNC context, internal connectivity becomes a key issue. The four essays provided some key insights related to each of these. Secondly, this chapter discussed the micro- and macro-level consequences of interpersonal cross-border knowledge sharing. On the micro level, interpersonal cross-border relationships provide access-related benefits. They facilitate the creation of new knowledge by providing linkages between different bodies of knowledge and frames of knowing on the operational level where the daily work of the MNC occurs. On the macro level, interpersonal cross-border relationships provide shortcuts between the differentiated units of the MNC, thus creating a 'small-world effect' (Watts, 1999a, 1999b) within the multinational organization. Both sections also discussed some potential negative aspects of interpersonal knowledge sharing.

Having discussed the findings of the study and the consequences of interpersonal cross-border knowledge sharing, I will now move on to consider the contributions and implications of the study. Theoretical contributions are discussed first, followed practical implications and avenues for further research.

7. CONTRIBUTIONS AND IMPLICATIONS OF THE STUDY

7.1. Theoretical Contributions

The theoretical contributions of this thesis are as follows. First, its overall, and perhaps the most significant, contribution comes from the recognition of the importance of interpersonal interaction in the functioning of the MNC. While current research has attempted to understand the inner workings of the MNC from perspectives ranging from the economic and strategic to the cultural, this research has tended to take an organizational level perspective. This thesis contributes to our understanding of the MNC by approaching intra-company knowledge sharing, a capability recognized as fundamentally important for competitive advantage (Bartlett & Ghoshal, 1989; Kogut & Zander, 1993; Nohria & Ghoshal, 1997), from an interpersonal perspective. The present thesis is one of the first large-scale studies within the field of international business to focus specifically on interpersonal level knowledge exchange within the MNC, arguing that interpersonal knowledge sharing between MNC managers during the course of their daily work is an essential component of internal knowledge flows.

Secondly, this thesis has shown that interpersonal cross-border interaction influences the internal flow of knowledge in fundamental ways both on the micro and macro levels, a consideration that makes a valuable contribution to the study of the MNC. On the micro level, the thesis argues that interpersonal cross-border relationships can provide channels through which knowledge can flow across the different units of the MNC (Adler & Kwon, 2002; Burt, 1992, 1997), therefore creating knowledge-access related benefits for individual managers. At the same time, the role of interpersonal interaction is likely to be fundamental in the creation of new knowledge within the MNC, as it bridges different bodies of knowledge and frames of knowing in the context of the operational day-to-day problem-solving of the MNC. On the macro level, interpersonal cross-border relationships can produce valuable shortcuts which create a 'small-world' effect (Watts, 1999a, 1999b), which increases connectivity within the organization.

Thirdly, by focusing on how knowledge is being shared in the interpersonal cross-border relationships of MNC managers, this thesis establishes that the characteristics of interpersonal relationships, the immediate interaction context, and the overall MNC context all have a significant influence on the effectiveness of interpersonal knowledge sharing. A theoretical framework was developed in which three different layers of social factors influencing knowledge sharing in interpersonal cross-border relationships were depicted: the layers of the relationship, the immediate interaction context, and the overall MNC context. Furthermore, the four essays each focused on a specific layer (Essays 1 and 2 on the relationship, Essay 3 on the immediate interaction context, and Essay 4 on the overall MNC context), finding that there are specific factors influencing the effectiveness of interpersonal cross-border knowledge sharing related to each of the layers. The characteristics of the relationship are a key determinant of knowledge sharing on the relationship level, the issue of boundary crossing is of major importance in the immediate interaction context, and finally, in the overall MNC context, connectivity between the different actors is a key issue to be considered.

Fourthly, this thesis used theoretical and methodological triangulation to enable the holistic analysis of a phenomenon on which scholarly research is limited. The theoretical base of this study, given the multi-faceted nature of the topic, has of necessity to be broad. Therefore, the literature on international business and international human resource management is complemented by research conducted in the fields of social networks, social capital, knowledge and practice. Moreover, as Birkinshaw (2004) argues, a combination of quantitative and qualitative research methods (with the choice of method being guided by the specific research questions of the four essays) enables more rigorous treatment in promoting full understanding of the phenomenon under study. Furthermore, while the qualitative part of the empirical study followed the pre-established guidelines of the case study method (Eisenhardt, 1989; Miles & Huberman, 1994; Yin, 2003), an innovative combination of the name generator technique borrowed from social network analysis (Wasserman & Faust, 1994) and LISREL structural equation modeling (Jöreskog & Sörbom, 1999; Jöreskog, 2005) was adopted in the quantitative part. This combinatory method enabled analysis on the

cross-sectional relationship level, which in turn allowed several significant contributions to be made in areas that would have been difficult to address had the focus remained on the organizational level. The advantages and limitations of this method were discussed in more detail in Section 4.2., and in conjunction of Essay 1.

Finally, the use of different theoretical perspectives combined with methodological triangulation carries the risk that the perspectives and methods used are not compatible (Bryman & Bell, 2003; Hurmerinta-Peltomäki & Nummela, 2004; Tashakkori & Teddlie, 1998). I agree fully. Both theoretical and methodological triangulation must be used with great care, so that the different perspectives and methods complement each other without violating their fundamental ontological and epistemological assumptions. My solution was to separate both the theoretical perspectives and methods by using the essay format, so that each essay adopts two complementary theoretical perspectives from which to examine each layer of the phenomenon separately, using one research method only. The findings of the four essays were then drawn together using an overall theoretical framework (see Figure 15). This research design simultaneously allowed (i) theoretical and methodological clarity and rigor in the independent essays, and (ii) a holistic multi-level analysis of the phenomenon as a whole. In fact, I would argue that this multi-level, multi-perspective and multi-method investigation has provided a more comprehensive understanding of an equally multi-faceted phenomenon than any other research design would have been able to achieve, thus being a major contribution of the study. The findings reported in the individual essays are indeed complementary and bring out different facets of the phenomenon. What is particularly interesting is that some issues, particularly the importance of shared cognitive ground, came out consistently in all four essays, regardless of the theoretical perspectives or methods used. This recognition of the importance of shared cognitive ground is an important contribution to the literature, and perhaps one that has not received enough attention in previous research.

7.2. Managerial Implications

The practical implications of this work are discussed in this section. The findings of the study carry some noteworthy implications for both individual managers as well as for the MNC as a whole. The implications for individual managers are discussed first, and this is followed by a discussion of the organizational-level implications.

7.2.1. Implications for Individual Managers

The value of interpersonal cross-border relationships for individual managers is in their ability to provide access to knowledge (Burt, 1992, 1997). This has several potential benefits. First, shortcuts to various knowledge sources can provide solutions to business issues faster than hierarchical routes. Secondly, interpersonal cross-border relationships can provide effective access to more and more diverse knowledge sources across geographical and organizational boundaries. Thirdly, interpersonal cross-border relationships can provide access to knowledge in other units of which a manager was not previously aware, or would otherwise never have known existed. To quote Hargadon & Sutton (1997, 716), “Knowledge is imperfectly shared over time and across people, organizations, and industries. Ideas from one group might solve the problems of another, but only if connections between existing solutions and problems can be made across the boundaries of them.” Finally, the benefits of interpersonal cross-border relationships may be either direct (such as calling person A in unit B about a specific issue), or indirect, when people we know in other units refer us to people they know (such as your colleague A in unit B suggesting that you call his or her colleague C in unit D who has been working on a similar issue).

Obviously, it should be repeated here that more interpersonal cross-border interaction is not always better. For one thing, such interaction carries a cost as it takes both time and money, especially when it involves traveling. Secondly, interpersonal relationships may not always be the most effective source of knowledge: company Intranets, search and reapply tools and the like may well be the most efficient sources of knowledge on many

business issues. Thirdly, while interpersonal knowledge sharing typically occurs as a natural product of interpersonal interaction and is not always planned or even intentional, it nevertheless requires motivation from individual managers to engage in interaction. Moreover, effective knowledge sharing in interpersonal cross-border relationships involves both giving and receiving aspects, thereby requiring a move away from the self-interest assumption prevalent in many organizations: both personal motivation and a positive organizational culture toward sharing are needed (Bolino et al., 2002; Nahapiet et al., 2005). Finally, organizational constraints in the form of roles, values, power issues and internal competition are issues that come into play here (Perrone et al., 2003).

While many managers may relate to the observation that interpersonal interaction is the primary channel through which managers seek and share knowledge (Cross et al, 2003), systematic attention to interpersonal level knowledge sharing across the different units of the MNC has been lacking. I would argue that the value of interpersonal cross-border interaction as a tool for intra-company knowledge exchange has not been recognized fully by managers and organizations. Consequently, the knowledge-sharing potential of interpersonal cross-border interaction may have been underestimated, and it certainly has not been used systematically. Heightened awareness of the factors involved in interpersonal cross-border knowledge sharing may significantly enhance its effectiveness. However, one must also remember that it must not be used blindly, but as a part of a wider palette of knowledge sources, all of which have their advantages and disadvantages. Finally, while the individual level implications have not been the empirical focus in this study, Mäkelä & Suutari (2005) provide a more focused investigation of this in the context of managers with global careers.

7.2.2. Implications for Multinational Organizations

The organizational benefits of interpersonal cross-border knowledge sharing reach beyond the indirect benefits of individual managers being able to access knowledge more effectively. The organizational benefit of interpersonal knowledge sharing across

borders is its potential to facilitate innovation within the organization. Innovations are not typically created from scratch by individual inventors: they are path-dependent products of creating new combinations and reconfigurations of existing knowledge (Hargadon & Sutton, 1997). Therefore, in order to facilitate innovation, organizations must *create paths through which ideas can disseminate and blend*. More structured means of knowledge sharing, such as company Intranets and other knowledge management systems, or formal hierarchical routes through top-management meetings and visits, may not be sufficient for facilitating this dissemination and blending of ideas. There are several reasons for this. First, they do not happen at the right environment, i.e. they are not embedded in the daily operational problem-solving life of the MNC. Secondly, they do not permit two-directional interpersonal interaction. Thus they do not allow the sharing of personal knowing, or thinking-in-interaction, and therefore the generation of new knowing and knowledge, as described in Essay 3. Thirdly, the possibility of arriving at serendipitous, non-intentional combinations, which are often important sources of innovation, is much more likely through a multitude of interpersonal cross-border relationships than through formal systems.

Again, more interpersonal cross-border knowledge sharing is not always better. If interpersonal interaction has a cost for the individual manager, the cost is multiplied for the organization. The organization must therefore create connections where it matters most. This is a strategic question for each individual organization, but may include aspects such as identifying structural holes (this can be done through social network analysis, see e.g., Cross et al., 2004). Key means of providing connections include personnel transfers, which - as identified in Essay 2 - provide strong cross-border ties through which knowledge can flow more effectively than through other more arms-length ties. According to Doz et al. (2001), personnel transfers are most effective when both the complexity of the technology and the market are high. Another aspect of creating connections strategically is to provide shortcuts across all key geographical areas, businesses and functions, so that these connections together create a small-world effect (Watts, 1999a, 1999b) in the organization, as discussed in Section 6.2.

Finally, when designing knowledge strategies, multinational organizations should focus not only on knowledge management systems but also on a variety of means for internal knowledge exchange. On the one hand, these include paying attention to the different levels of knowledge exchange, ranging from interpersonal interaction to project groups and teams, as well as organizational level technology transfer or the transfer of best practices. On the other hand, consideration should be given to both formal and informal means of knowledge exchange. While formal means are more controllable, informal connections, such as discussed in Essay 4, may have a strong influence on how knowledge flows within the organization. Figure 16 below illustrates the multiple dimensions of the internal flow of knowledge within the MNC.¹⁰

INTERPERSONAL - FORMAL	UNIT LEVEL - FORMAL
INTERPERSONAL - INFORMAL	UNIT LEVEL - INFORMAL

Figure 16. Multiple Dimensions of Internal Knowledge Flows within the MNC.

¹⁰ The purpose of this figure is not to provide a typology of which type of interaction belongs to which quadrant, it is rather to highlight the different dimensions of knowledge flows that need to be considered within the MNC. I recognise that the boundaries of the four quadrants are fuzzy, and some forms of interaction could be seen as belonging to two or more categories. For example, inter-unit teams and project groups could be viewed as unit-level means of interaction, as they are typically set up as cooperative arrangements between two MNC units. On the other hand, when those teams or projects groups start operating, the actual interaction in them occurs on the interpersonal level. Finally, the interaction

7.3. Avenues for Further Research

I will conclude Part I of this thesis by suggesting some interesting avenues for further research that have been revealed but could not be followed up. The main research question was: “*How is knowledge being shared in the interpersonal cross-border relationships of MNC managers?*”, the focus being on the social, interaction-related factors influencing knowledge sharing in interpersonal cross-border relationships. However, there are at least two other fundamentally important issues related to interpersonal level knowledge sharing across borders, which have not been covered here.

The first of these concerns how cross-cultural differences influence knowledge sharing across borders. While this study has touched on the issue of national culture on several occasions, most specifically in Essay 4, more detailed investigation has had to remain outside of the immediate focus. The influence of national cultural differences on interpersonal knowledge sharing is a tremendously important topic, but such a wide and complex one that it deserves focused attention (see e.g., Adler & Graham, 1989; Bhagat et al., 2002; Leung et al., 2005, on cross-cultural aspects of cross-border interaction).

Secondly, an equally important issue concerns the influence of the organizational culture and values on interpersonal knowledge sharing within multinationals. There are differences in organizational cultures, and these differences may have a fundamental influence on the effectiveness of interpersonal knowledge sharing within the organization. Furthermore, there may be several different layers of culture, including sub-cultures within organizations, that influence knowledge sharing interdependently (see e.g., Caulkins, 2004; Holmquist & Bolin, 2004; Leung et al., 2005, for interesting discussions around this). This, too, is a highly relevant topic, which I was not able to cover within the scope of this thesis: it requires dedicated research focus

Finally, I would like to highlight several other interesting avenues for further research. First, the role of interpersonal level knowledge sharing within the overall knowledge

between the team or project group member may be both formal and informal. In other words, the point

exchange effort of the MNC, although touched upon in the previous section, needs to be studied further. This is an important question that may have consequences for the overall strategy and structure of the organization. Secondly, more research effort should be put into the value of interpersonal knowledge sharing for the overall organization. Value considerations remain a research challenge on both the interpersonal and the organizational levels of knowledge sharing, as the direct effect of knowledge exchange has been difficult to isolate empirically. Cross & Cummings (2004) provide an indication of the value of interpersonal networks in individual performance, but there is an urgent need for empirical evidence of their value in terms of organizational performance. Last but not least, interpersonal relationships are important conduits of knowledge sharing, not only inside multinational corporations but also in inter-organizational relationships and co-operative arrangements such as international joint ventures and alliances, and an interpersonal level focus may provide new insights into these areas, too.

here is not to try to insist on strict typologies, but to recognise different forms and levels of interaction.

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PART II

ESSAY 1

KNOWLEDGE SHARING IN INTERPERSONAL CROSS-BORDER RELATIONSHIPS WITHIN THE MNC

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KNOWLEDGE SHARING IN INTERPERSONAL CROSS-BORDER RELATIONSHIPS WITHIN THE MNC

Abstract

This paper develops a model of knowledge sharing in interpersonal cross-border relationships within the MNC. Drawing upon social capital theory, it builds a model positing that such knowledge sharing is driven by interaction frequency, interpersonal trust and shared cognitive ground. The model is tested empirically on a cross-sectional sample of 518 interpersonal cross-border relationships, using a combination of the name generator technique and structural equation modeling. This study contributes to the research on MNC knowledge flows on several levels. First, it highlights the importance of interpersonal knowledge sharing to the mobilization of knowledge within the MNC. Secondly, by combining the name generation technique commonly used in social network analysis with structural equation modeling it develops an innovative method that enables analysis on the cross-sectional relationship level. Thirdly, interaction frequency, trust and shared cognitive ground were all found to have a positive impact on knowledge sharing in interpersonal cross-border relationships, but the impact was different for the sharing of information and the sharing of know-how.

Introduction

Knowledge sharing on the interpersonal level is increasingly being recognized as a fundamentally important aspect of intra-company knowledge flows within the Multinational Corporation (Foss & Pedersen, 2004; Monge & Contractor 2003). Interpersonal interaction between managers during the course of ongoing organizational routines - such as meetings, e-mails, telephone calls, projects, and informal encounters - is the primary mechanism through which the daily work of the MNC is conducted. Therefore, a significant amount of knowledge exchange within the MNC should occur not only on the organizational level between units, but also on the interpersonal level in the interaction between MNC managers in the course of their daily work.

However, despite its fundamental nature, knowledge sharing on the interpersonal level has received relatively little attention in the literature concerning MNC knowledge flows (Foss and Pedersen, 2004). Organizational level knowledge transfer between the different MNC units have thus far been the dominant research focus (e.g., Foss &

Pedersen, 2002; Gupta & Govinradajan, 1991, 2000; Kostova, 1999; Nahapiet & Ghoshal, 1998; Szulanski, 2000; Tsai & Ghoshal, 1998), and much less attention has been paid to the interpersonal level. Furthermore, other approaches with a more interpersonal focus, such as social network analysis (e.g., Hansen, 1999, 2002; Reagans & McEvily, 2003), have not considered the particular challenges the MNC context brings to interpersonal knowledge sharing. Hence, there is a significant research gap in terms of how knowledge is being shared on the interpersonal level across the different MNC units. This is a topic of considerable importance, as the effective internal mobilization and integration of knowledge has been considered a major source of competitive advantage for firms (Doz et al., 2001; Kogut & Zander, 1993).

Consequently, the objective of this paper is to examine knowledge sharing in interpersonal cross-border relationships between managers located within the different units of the MNC. The specific empirical research question is formulated as follows: “How do different relationship characteristics influence knowledge sharing in interpersonal cross-border relationships?” Drawing upon Nahapiet & Ghoshal’s (1998) work on the three dimensions of social capital, the paper develops a model of knowledge sharing in interpersonal cross-border relationships within the MNC, and shows that it is driven by interaction frequency, interpersonal trust and shared cognitive ground. Structural equation modeling is used on an extensive data set of 518 interpersonal cross-border relationships to test the theoretical model.

Theoretical Framework

When previous literature has examined inter-unit knowledge transfers on the organizational level, it may have overlooked the operational reality that, in addition to organizational level transfer of best practices, inter-unit interaction between individuals is another fundamentally important means of knowledge exchange between MNC units. Mintzberg (1973) recognized long ago that interaction during the course of organizational routines is a primary way how MNC managers carry out their daily work. Nohria & Eccles (1992) added that, at the core, organizations depend on

interpersonal interaction to operate. Furthermore, Ghoshal et al. (1994) found that the number of interpersonal relationships between two MNC units had a significant positive effect on the effectiveness of organizational level inter-unit communication, and Cross & Cummings (2004) established that individual performance in knowledge-intensive work was associated with an individual's network characteristics, such as relationships crossing organizational boundaries. Finally, Borgatti & Cross (2003) and Cross et al. (2001) showed that interpersonal interaction was the most important channel through which MNC managers sought and shared knowledge, when compared to other means such as company intranets, the Internet, personal archives and other documented material.

The term interpersonal knowledge sharing refers in this paper to business-related knowledge exchange within the network relationships that exist between individual MNC managers, occurring through interpersonal interaction both within and beyond formal reporting lines. It is also worth noting that knowledge sharing is differentiated from the often interchangeably used term knowledge transfer, which typically refers to the relocation of organizational practices between subsidiaries as an organized activity (Szulanski, 2000): knowledge sharing is a natural product of interaction, which may or may not be planned, or even intentional. In other words, knowledge sharing occurs while the work of the MNC is being conducted through interaction between managers working in different units and locations. This interaction may take place in face-to-face meetings, over the telephone or via e-mail, as well as in informal encounters. Obviously, the two terms are interrelated and not mutually exclusive; it is argued here, however, that there is a distinct difference in emphasis warranting attention and more research. It is also worth noting that the focus of this paper is on the sharing of business-related knowledge, rather than any other types of knowledge that may be shared within interpersonal interaction, such as personal information, career-related knowledge or gossip.

Interpersonal networks can play a crucial role in the effective sharing of knowledge within the MNC by creating channels through which it can flow between the different units. Due to the size and geographical dispersion of the multinational operation, and

the specialization of its different functions, disconnections are likely to emerge between its different units. Burt (1992) refers to these disconnections as ‘structural holes’, building on Granovetter’s (1973) classic work on the strength of weak ties. “A structural hole indicates that the people on either side of the hole circulate in different flows of information. A manager, who spans the structural hole, by having strong relations with contacts on both sides of the hole, has access to both information flows.” (Burt, 1997, 341)

It follows from this line of argument that interpersonal cross-border relationships have the capacity to create bridging ties (Adler & Kwon, 2002) across structural holes, thus providing channels of knowledge sharing across units. Unlike the more structured means, such as company intranets, top-management visits and meetings, or internal conferences, interpersonal relationships provide both formal and informal linkages on the operational level within the day-to-day life of the MNC. Therefore, these boundary-spanning (Beechler et al., 2004; Kostova & Roth, 2003) relationships are able to create shortcuts through which knowledge can flow across organizational and geographical boundaries. I will now build a model of knowledge sharing in these interpersonal cross-border relationships within the MNC, using social capital theory as a theoretical lens.

Social Capital Theory and Knowledge Sharing

Social capital is defined here as the assets embedded within and available through the network of relationships possessed by an individual or social unit (Nahapiet & Ghoshal, 1998).¹¹ Although social capital theory has been used to examine both within-group (bonding) and between-group (bridging) ties (Adler & Kwon, 2002; Burt, 2000), the present analysis is limited to interpersonal relationships bridging the different units of the MNC. This paper examines knowledge sharing in these bridging cross-border relationships through Nahapiet & Ghoshal’s (1998) three-dimensional framework

¹¹ It is acknowledged that, due to its varied usage across several research fields, the term social capital has been defined in a number of different ways, ranging from the public good of a society (Putnam, 1995; Woolcock, 1998) and cohesive ties within a social group (Coleman, 1988), to individual advantage (Burt, 1992) (see Adler & Kwon, 2002, for a summary of the different definitions). This paper uses the Nahapiet and Ghoshal (1998) definition as it is both broadly accepted in IB research, and particularly suitable for interpersonal level analysis.

focusing on the structural, relational and cognitive dimensions of social capital. The structural dimension refers to the actual linkages between individuals or social units, i.e. between whom, where and how interaction is taking place. The relational dimension refers to the behavioral assets and requirements embedded in the relationship, including trust, norms, identity, obligations and expectations. Finally, Nahapiet & Ghoshal (1998) add a cognitive dimension referring to shared paradigms, practices, codes, discourse and narratives, all of which facilitate a mutual understanding of proper ways of acting within a social system.¹²

The structural, relational and cognitive dimensions of interpersonal cross-border relationships are now examined in more detail, and hypotheses for empirical testing built. Knowledge sharing is approached in this study from the perspective of the knowledge recipient: it is typically an integrated part of interpersonal interaction, and may or may not be intentional or even conscious from the perspective of the sharer. Therefore, it can best be examined by analyzing how the different characteristics of interpersonal cross-border relationships influence the amount of knowledge received within the relationship.

Furthermore, knowledge sharing is broken down into the sharing of both information and know-how (Kogut & Zander, 1992). Information refers to messages that are easily transmittable in words and numbers, such as facts or data. Know-how, in turn, refers to an accumulated skill or expertise in how to do something, which is more difficult to express. (Kogut & Zander, 1992) Although I see information as close to what is typically discussed as explicit knowledge and know-how as close to more tacit types of knowledge, I also recognize that there is significant disagreement among scholars about what constitutes explicit and tacit knowledge, and whether they are mutually exclusive or dimensions of the same continuum (e.g., Lam, 2000; Tsoukas, 1996). In order to steer clear of this debate, which is important as such but is beyond the scope of this particular paper, I have chosen to discuss the sharing of information on the one hand,

¹² It should be noted at this point that Nahapiet and Ghoshal's (1998) original work did not focus solely on bridging social capital, but rather attempted to provide a framework encompassing both the bridging and bonding facets (Adler & Kwon, 2002). This paper focuses on relationships that are bridges in the sense that they provide cross-border linkages between different units, but at the same time it is recognized that the bonding element of these bridging relationships is very important indeed.

and knowledge on the other (Kogut & Zander, 1992), and leave further considerations aside.

Interaction in Interpersonal Cross-Border Relationships

The structural dimension, conceptualized here as the frequency of interaction, has attracted notable research interest recently in relation to knowledge sharing, although this has been primarily on the organizational level in the MNC literature (e.g., Ghoshal et al., 1994; Hansen, 1999, 2002; Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). As pointed out by Tsai & Ghoshal (1998), social relationships are channels for information and resource flows. Consequently, an increase in the frequency of interaction should create more opportunities for knowledge sharing within a relationship. For example, Tsai & Ghoshal (1998) found that the frequency of interaction and closeness of social interaction ties between two organizational units had a significant positive effect on knowledge exchange between them. Furthermore, Hansen (1999, 2002) and Reagans & McEvily (2003) concluded in their respective studies that the strength of the interaction tie characterized by frequent interaction had a strong positive effect on the transfer of knowledge. Thus, the following hypothesis can be formulated:

Hypothesis 1: The higher the frequency of interaction in an interpersonal cross-border relationship, the more knowledge is being shared within the relationship.

While the overall frequency of interaction is an important driver of knowledge sharing, more detailed analysis is required to give us a better understanding of how interaction influences knowledge sharing in interpersonal relationships. In particular, the frequency of non-face-to-face and face-to-face interaction may have different implications for the sharing of information and the sharing of know-how respectively. Non-face-to-face communication refers to both electronic (typically e-mail) and voice communication (typically telephone). Previous research has shown virtual communication to be an effective facilitator of the sharing of more explicit forms of knowledge such as facts or data (McKenney et al., 1992). More tacit forms of knowledge such as know-how, on the other hand, have typically been argued to require face-to-face interaction, as it enables

more holistic two-way communication (Nohria & Eccles, 1992; Nonaka & Takeuchi, 1995). In order to achieve as complete an analysis as is feasible, all possible relationships between non-face-to-face interaction and the sharing of information and know-how are tested as follows:

Hypothesis 1a: The more frequent the non-face-to-face interaction, the more information is being shared within the relationship.

Hypothesis 1b: The more frequent the non-face-to-face interaction, the more know-how is being shared within the relationship.

Hypothesis 1c: The more frequent the face-to-face interaction, the more information is being shared within the relationship.

Hypothesis 1d: The more frequent the face-to-face interaction, the more know-how is being shared within the relationship.

Trust in Interpersonal Cross-Border Relationships

The relational dimension of social capital refers to the behavioral assets and requirements embedded in a relationship, including trust, norms, identity, obligations and expectations (Nahapiet & Ghoshal, 1998). This study follows previous research (e.g., Barner-Rasmussen, 2003; Tsai & Ghoshal, 1998) in using trust as a proxy for the relational dimension. With reference to network relationships, trust has been defined as “the willingness of one party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (Mayer et al., 1995). More specifically, Tsai & Ghoshal (1998) have discussed trust in terms of two core components: fairness (i.e. the interaction partner can be trusted to act fairly even if there is an opportunity to take advantage), and reliability (i.e. the interaction partner can be relied on to fulfill obligations). Viewing trust as an expectation is both in line with previous literature (e.g., Mayer et al., 1995; Nahapiet & Ghoshal, 1998; Perrone et al., 2003), and consistent with the knowledge-recipient perspective adopted in this study.

An extensive body of previous research provides evidence that trust encourages knowledge sharing by increasing the willingness to engage in exchange and cooperation (see e.g., Abrams et al., 2003; McEvily et al., 2003, for reviews). With specific regard to network relationships, Uzzi (1997) and Uzzi & Lancaster (2002) found that trust facilitated the exchange of important resources and tacit knowledge between actors. Similarly, Tsai & Ghoshal (1998) concluded that inter-unit trust had a significant positive effect on the exchange of resources between two units. Moreover, Zaheer et al. (1998) suggest that trust encourages knowledge exchange by making it less costly. Therefore, one should expect the following hypothesis to hold:

Hypothesis 2: The higher the perceived level of trust in an interpersonal cross-border relationship, the more knowledge is being shared within the relationship.

Furthermore, interpersonal trust could be assumed to influence the sharing of information and know-how in different ways. Previous research indicates that embedded relationships characterized by high levels of trust are particularly effective for the sharing of more tacit forms of knowledge, such as know-how, whereas more arms-length relationships only allow the sharing of more explicit forms of knowledge (Uzzi, 1997). Furthermore, strong ties characterized by a close, trustful working relationship have been associated with the ease of knowledge transfer, particularly of tacit knowledge (Hansen, 1999, 2002). On the other hand, McEvily et al. (2003) found in their study that strong trustful relationships facilitated the sharing of not only tacit but also explicit knowledge. One could thus draw two conflicting conclusions from the existing literature. On the one hand, trust might be expected to influence the sharing of both information and know-how, but on the other hand the sharing of information within an interpersonal cross-border relationship may well not be significantly influenced by the level of perceived trust, whereas the sharing of know-how is. In that case, one should expect information sharing to be primarily driven by business needs and formal communication requirements, i.e. to take place regardless of the existing level of trust, whereas trust should be positively related to the sharing of know-how. Consequently, the relationship between trust and the sharing of information on the one hand, and between trust and the sharing of know-how on the other, are investigated in the study:

Hypothesis 2a: The higher the perceived level of trust in an interpersonal cross-border relationship, the more information is being shared within the relationship.

Hypothesis 2b: The higher the perceived level of trust in an interpersonal cross-border relationship, the more know-how is being shared within the relationship.

Shared Cognitive Ground in Interpersonal Cross-Border Relationships

The cognitive dimension of social capital refers to shared paradigms, practices and codes facilitating a mutual understanding of proper ways of acting within a social system (Nahapiet & Ghoshal, 1998). Since its introduction by Nahapiet & Ghoshal (1998), the cognitive dimension has primarily been used as an organizational level construct, conceptualized as shared vision in the work of Tsai & Ghoshal (1998). This conceptualization may not capture all the cognitive aspects of interpersonal level interaction, however. For one thing, members of an organization may share the same vision even if there is no strong interaction, and this may lead to empirical problems such as those reported by Tsai & Ghoshal (1998). Secondly, Nahapiet & Ghoshal's (1998) original concept was considerably more comprehensive than that of the shared vision, and included aspects related to not only shared goals but also to shared practice and discourse. These play an important role on the interpersonal level, as discussed extensively in the literature on communities of practice (e.g., Boland & Tenkasi, 1995; Brown & Duguid, 2000; Wenger, 1998).

Therefore, in accordance with Nahapiet & Ghoshal's (1998) original work, the conceptualization of the cognitive dimension has been extended to encompass several aspects of shared cognitive ground (Nonaka & Takeuchi, 1995), including shared goals, shared practice and shared discourse. Shared cognitive ground has been linked to knowledge sharing by prominent researchers in several different research traditions (e.g., Boland & Tenkasi, 1995; Nahapiet & Ghoshal, 1998; Nonaka & Takeuchi, 1995), including aspects such as shared thought worlds, and shared discourse and narratives. Consequently, the following hypothesis is proposed:

Hypothesis 3: The more shared cognitive ground there is in an interpersonal cross-border relationship, the more knowledge is being shared within the relationship.

More specifically, shared cognitive ground could be seen as an effective facilitator of the sharing of both information and know-how. For example, Brown and Duguid (2000, 107) argue in their discussion of the social aspects of knowledge that “to collaborate around shared information you first have to develop a shared framework for interpretation.”. On the other hand, as Nonaka & Takeuchi (1995) argued, it is conceivable that shared cognitive ground is particularly influential in the sharing of tacit knowledge, such as know-how, whereas the sharing of information does not require a significant level of shared cognition. Consequently, the relationship between shared cognitive ground and the sharing of information on the one hand, and the sharing of know-how on the other, are investigated as follows:

Hypothesis 3a: The more shared cognitive ground there is in an interpersonal cross-border relationship, the more information is being shared within the relationship.

Hypothesis 3b: The more shared cognitive ground there is in an interpersonal cross-border relationship, the more know-how is being shared within the relationship.

In sum, the model put forward in this section (Model 1 in Figure 1 below) illustrates the proposed linkages between knowledge sharing in interpersonal cross-border relationships and the structural (frequency of interaction), relational (trust) and cognitive (shared cognitive ground) dimensions of social capital. Furthermore, these linkages are further broken down in Model 2 into the relationships between the independent variables of non-face-to-face and face-to-face interaction, trust and shared cognitive ground, and the dependent variables of information sharing and the sharing of know-how (see Figure 2 below).

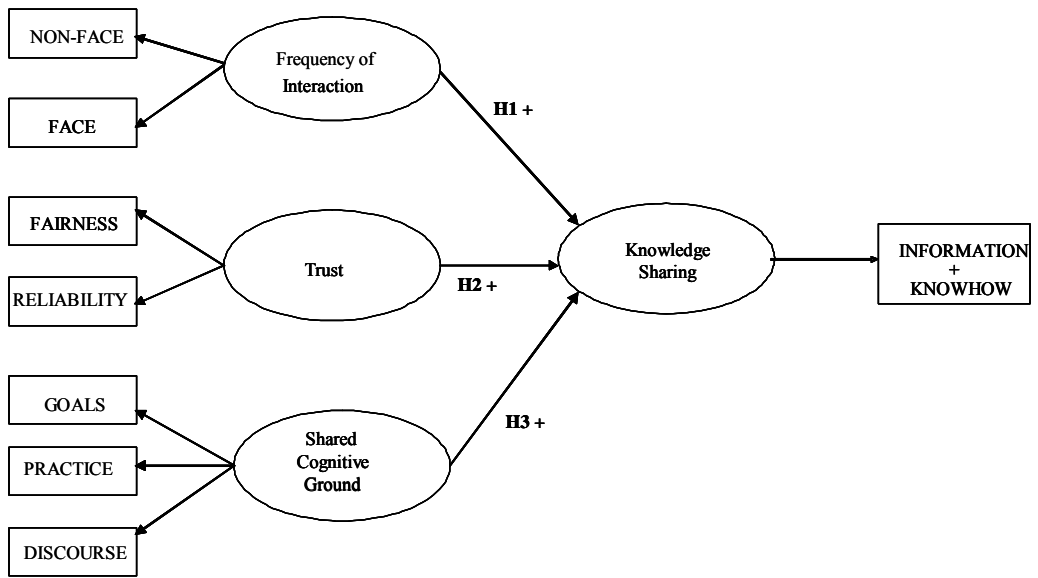


Figure 1. Model 1.

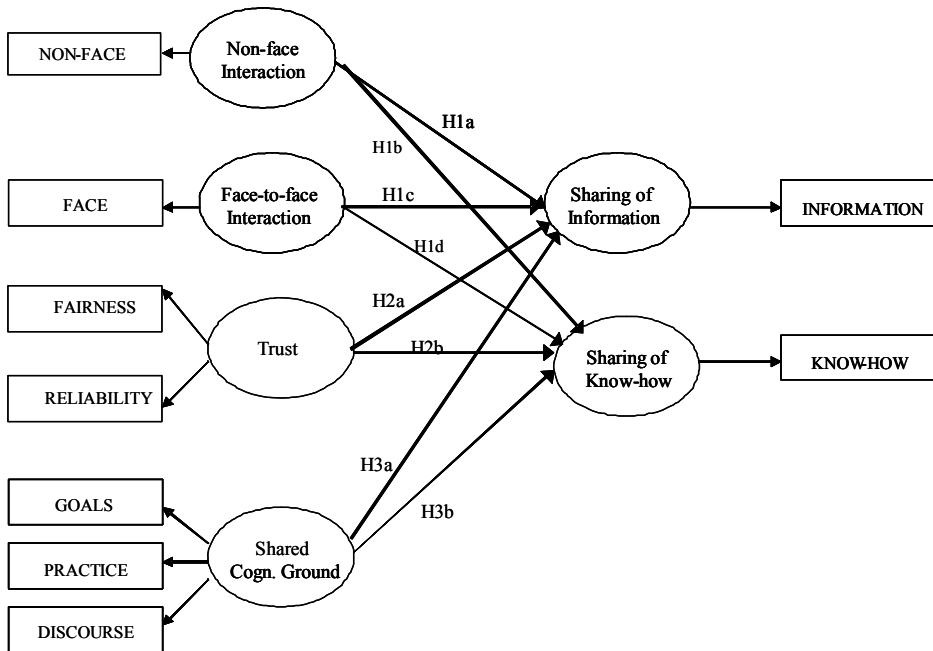


Figure 2. Model 2.

Data and Methods

The models described above were tested in an analysis of 518 interpersonal cross-border relationships. The data was collected through structured interviews of Finland-based MNC managers, the name generator technique commonly used in social network analysis (Wasserman & Faust, 1994), being combined with LISREL-based structural equation modeling (Jöreskog & Sörbom, 1999). This combinatory method allowed the cross-sectional examination of the characteristics of a large number of interpersonal cross-border relationships across a number of companies and industries. While this method shares the limitation of standard statistical methods in that it provides egocentric data from the respondent rather than dyadic data from both parties to the relationship, as achieved by social network analysis methods, it enables large-scale cross-sectional analysis on the relationship level that neither single-case network data nor cross-sectional aggregate unit level data would achieve in isolation.

The relationship level data (n=518) was derived from structured interviews with 57 Finland-based MNC managers routinely involved in intra-company cross-border interaction. The respondents were obtained as follows. First, they all had to fulfill the pre-set criterion of currently holding a position within an MNC involving frequent cross-border interaction with colleagues within the same company abroad. Secondly, managers fulfilling this criterion were identified using theoretical sampling following a two-step procedure. Major MNCs were first identified using a list of the 500 largest companies operating in Finland (Talouselämä, 2005), including both Finnish MNCs and subsidiaries of foreign MNCs from a variety of industries. Individual managers were then identified in each MNC through corporate communications or HR departments, or via other contacts within the company, and approached with a request for an interview. A maximum of three interviewees were allowed in any one MNC in order to reduce company bias. Furthermore, a variety of roles, ages and functional backgrounds of both male and female managers were sought. The relationships bridged 39 countries in all six continents, although with a bias to European countries reflecting the structure of foreign trade in Finland (Europe 427 relationships, North America 41, Asia 37, South America 8, Australia & New Zealand 4, and Africa 1). Seventeen industries were covered. The

sampling procedure was designed to increase the external validity of the study in the absence of existing databases by obtaining a maximum cross-sectional spread of different contexts and types of relationship within the frame of Finland-based MNC managers doing international work (Bryman & Bell, 2003).

The structured interviews were conducted during spring 2005, each lasting approximately 30-45 minutes. Before this the questionnaire went through an intensive series of pre-tests, and alterations were made after each test round. During the interviews the researcher went through the questionnaire with the respondent. The questionnaire language was English. Each respondent was asked to identify up to 12 colleagues abroad with whom he or she had been in interaction during the previous 12 months, using the name generator question, *“Think about all your colleagues who work within your company but outside your country. I would like you to indicate three colleagues with whom you have interacted during the last 12 months through each of the following means... [four categories given].* The actual wording of the questions is given in Appendix 1. This name-generator question was designed to provide a maximum variety of relationship contexts ranging from non-face-to-face to project and team work, thereby avoiding the problem of only identifying strong relationships, which has been identified as a typical risk when using the name generator technique (Lin, 2001).

Measures

The latent variables in the model were measured on multiple indicators, each of which was first assessed in a confirmatory factor analysis and then used in the LISREL model. Each latent variable is discussed below, and the wording of all the measurement items and their sources is given in Appendix 1.

Dependent Variable

The perceived amount of knowledge received by the respondent was used as the dependent variable in order to assess the extent to which knowledge was being shared within the relationship. This was measured on two questionnaire items assessing both information and know-how, using a seven-point Likert-type scale. This approach draws upon the work of Kogut & Zander (1992), who used a similar distinction between information and know-how, and Hansen (1999; 2002) whose work in the network context provided guidance for the wording of the items. A sum of the two items was used to provide a formative (rather than reflective) indicator for the latent variable of knowledge sharing (Jarvis et al., 2003). This is an important distinction as information and know-how are not indicators of the same underlying concept, but rather refer to two distinct components of the larger umbrella construct of knowledge (Kogut & Zander, 1992).

Independent Variables

Frequency of interaction. The latent variable ‘frequency of interaction’ was measured on two indicators, the frequency of non-face-to-face interaction and the frequency of face-to-face interaction. These, in turn, were measured on three questionnaire items including each of the following means of interaction: (i) e-mail or other electronic interaction, (ii) telephone or other voice interaction, and (iii) face-to-face interaction. A five-point ordinal scale was used. The indicator for non-face-to-face interaction was formed as a sum of e-mail and telephone interaction. The operationalization used in this study follows previous operationalizations of interaction frequency (e.g., Ghoshal et al., 1994; Marsden & Campbell, 1984; Hansen, 1999, 2002), extending them by focusing on the interpersonal level, providing numerical estimates of how often actual interactions took place, and examining non-face-to-face and face-to-face interaction separately.

Trust. The relational dimension of social capital was operationalized as trust, following existing literature (Tsai & Ghoshal, 1998). The latent variable trust was measured using

the two indicators fairness and reliability, adapted from Tsai & Ghoshal (1998). Both items were measured on a seven-point Likert-type scale.

Shared cognitive ground. The cognitive dimension of social capital was operationalized as shared cognitive ground. This latent variable was measured on three indicators examining shared goals, shared practice and shared discourse, in line with Nahapiet & Ghoshal's (1998) original work on the cognitive dimension of social capital. This contributes to the literature by using a more comprehensive operationalization of cognitive social capital than the shared vision construct developed by Tsai & Ghoshal (1998) and used in the current literature. Moreover, this construct was developed for the organizational level, and a broader operationalization was thought to be better suited to the individual level. All of the items were again measured on a seven-point Likert-type scale.

Data Analysis

Measurement Model

Structural equation modeling is a particularly appropriate method for examining causal relationships with latent constructs that are being measured on multiple indicators. This study uses four latent constructs to proxy the structural (frequency of interaction), relational (trust) and cognitive (shared cognitive ground) dimensions of social capital, and knowledge sharing (knowledge received within the relationship). The hypotheses were tested on the basis of two models. The main model (Model 1) tested the impact of the frequency of interaction (H1), trust (H2) and shared cognitive ground (H3) on knowledge sharing, while Model 2 tested the direct impact of non-face-to-face interaction (H1a, H1b), face-to-face interaction (H1c, H1d), trust (H2a, H2b) and shared cognitive ground (H3a, H3b) on the sharing of information and know-how respectively.

The models were tested using structural equation modeling with LISREL 8.7 (*Linear Structural Relationships*; Jöreskog & Sörbom, 1999). All of the variables were treated as

ordinal, including Likert-type scales for the indicator variables of trust, shared cognitive ground and knowledge sharing; and polychoric correlations and their asymptotic covariance matrix were used for estimating the models. This procedure is suggested by Jöreskog (2005) for the analysis of ordinal variables that do not have an origin or a measurement unit, and has the advantage that it avoids the normality requirement of regression-based methods by using threshold values to create an underlying normal distribution. The measurement model was assessed according to the Satorra-Bentler scaled chi-square (robust maximum likelihood) approach using the asymptotic covariance matrix, as suggested by Jöreskog et al. (2000) & Jöreskog (2005) for ordinal data. The structured interviews allowed for the collection of reliable data with no missing values.

Validity of the Model

Structural equation modeling involves two steps: the formation of constructs and the assessment of their causal relatedness. Consequently, the validity of the model is determined by assessing both the convergent and discriminant validity of the constructs and the nomological validity (i.e. the goodness of fit) of the whole model (Eriksson, 1998; Jöreskog & Sörbom, 1999).

Convergent validity refers to the homogeneity of the constructs included in the model, i.e. whether each of them relates to its designated set of indicators. The convergent validity of the indicators and their constructs were assessed by the factor loadings of the indicators, all of which loaded on the correct latent constructs (Varimax rotated factor loadings, see Table 1 below), and the reliability measure Cronbach's Alpha. The Cronbach's Alphas for the latent constructs were as follows: interaction frequency $\alpha=0.773$ (3 items), trust $\alpha=0.839$ (2 items), shared cognitive ground $\alpha= 0.779$ (3 items) and knowledge sharing $\alpha=0.706$ (2 items). These indicate satisfactory convergent validity. A correlation matrix of the indicator variables is given in Table 2.

Observed variable	Mean	SD	Factor 1*	Factor 2*	Factor 3*
NON-FACE	6.243	2.025	0.709		
FACE	1.909	1.197	0.700		
FAIRNESS	5.241	1.572		0.797	
RELIABILITY	5.187	1.451		0.901	
GOALS	5.108	1.526			0.758
PRACTICE	4.216	1.699			0.727
DISCOURSE	5.409	1.351			0.654

* Varimax-rotated factor loadings. Only loadings >.4 are reported.

Table 1. Descriptive Statistics and Factor Loadings of the Independent Indicator Variables

	NONFACE	FACE	FAIR	RELIAB	GOALS	PRACT.	DISC.
NON-FACE	1.000						
FACE	0.551	1.000					
FAIRNESS	0.230	0.165	1.000				
RELIABILITY	0.250	0.169	0.774	1.000			
GOALS	0.351	0.327	0.335	0.322	1.000		
PRACTICE	0.365	0.360	0.319	0.322	0.640	1.000	
DISCOURSE	0.305	0.247	0.342	0.570	0.342	0.570	1.000

Table 2. Correlation Matrix of the Independent Indicator Variables.

Discriminant validity refers to the assessment of the separateness of the constructs. This can be determined with reference to the absence of high factor loadings on the indicator variables of the non-assigned constructs, as well as by investigating the LISREL modification index suggesting changes to the model. As indicated in Table 1, all of the observed indicator variables only have significant loadings on their correct factors, suggesting unidimensionality within constructs and its absence between the independent latent constructs. Moreover, the LISREL modification index does not suggest any additional paths between the independent latent constructs, as should be the case. Therefore, satisfactory discriminant validity can be claimed.

The second step in determining the goodness of fit is to assess the nomological validity of the whole model. This was done by assessing the Satorra-Bentler scaled chi-square (Jöreskog et al., 2000; Jöreskog, 2005) and the degrees-of-freedom measures together with a probability estimate (p-value or RMSEA). The p-value is an estimate of the fit between the model and the data, and should be 0.05 or higher for a non-significant

distance between the data and the model at the 5% confidence level (Jöreskog & Sörbom, 1999). The RMSEA (Root Mean Square Error of Approximation) is a measure of the approximate fit of the model, and has been suggested by Browne & Cudeck (1993) to provide a good indication of fit, particularly with larger sample sizes. The RMSEA value should be below 0.05, and its upper confidence limit below 0.08, with a p-value larger than 0.5 (Browne & Cudeck, 1993).

The basic model (Model 1) showed a p-value of 0.592 (chi-square 13.13, df 15), which indicates a very good fit. The more detailed Model 2 had a p-value of 0.050, which is significant but borderline. However, the RMSEA value of Model 2, which was 0.035 (upper confidence limit 0.058 and p-value for the RMSEA 0.85), indicates a very good approximate fit (chi-square 27.60, df 17); therefore Model 2 can be accepted (Browne & Cudeck, 1993). The GFI (Goodness of Fit Index) values for Model 1 and Model 2 were 0.99 and 0.98 respectively, and the AGFI (Adjusted Goodness of Fit) values 0.98 (Model 1) and 0.95 (Model 2), both suggesting a very good fit. Model 1 explains 52% of the variation in the dependent variable knowledge ($r^2=0.52$), while Model 2 explains 36% of the variation in the dependent variable information ($r^2=0.36$) and 54% of the variation in the dependent variable know-how ($r^2=0.54$).

Results

The process of confirmatory LISREL analysis is such that all hypothesized relationships are tested simultaneously, and the final model is built through repeated iterations of the model in order to obtain the most coherent representation of the causal relationships within the data. The basic model (Model 1) fits as hypothesized, with all of the paths being significant. In Model 2, the LISREL modification index suggests an additional significant path from the dependent variable Information to the dependent variable Know-how. This path should be added into the model, as it is theoretically possible that the sharing of information within a relationship may lead to the sharing of know-how. Furthermore, the removal of the path from the independent variable Non-face Interaction to the dependent variable Know-how, again in Model 2, changes the model

from non-significant to significant, suggesting that there is no relationship between these variables. As it is theoretically possible that there may not be any significant relationship between non-face-to-face interaction and the sharing of know-how, this path was removed from the model. No further changes were suggested by the program. The final models are presented in Figures 3 (Model 1) and 4 (Model 2) below.

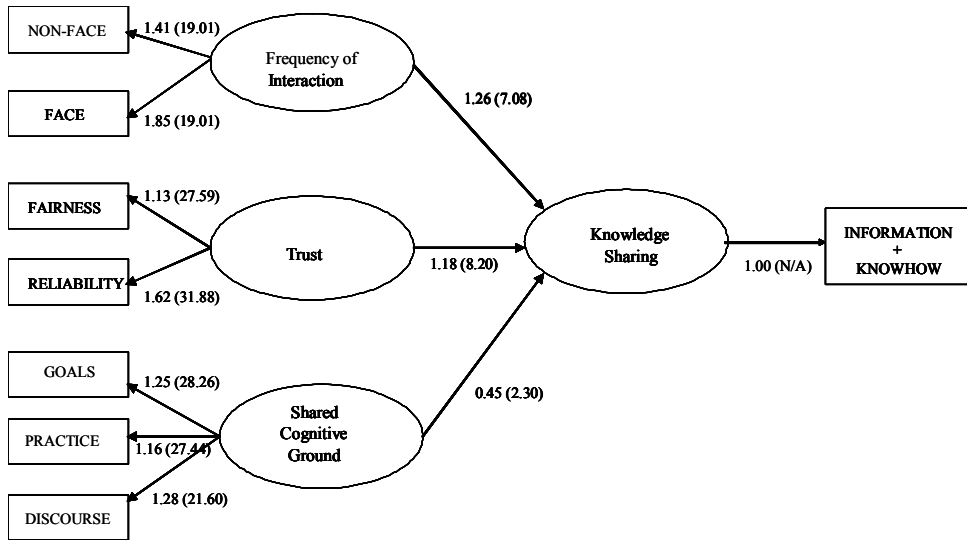


Figure 3. Results of Model 1. Model Chi-Square is 13.13 with 15 degrees of freedom (p-value 0.592). The figures given are un-standardized lambdas of causal relations with *t*-values in parentheses.

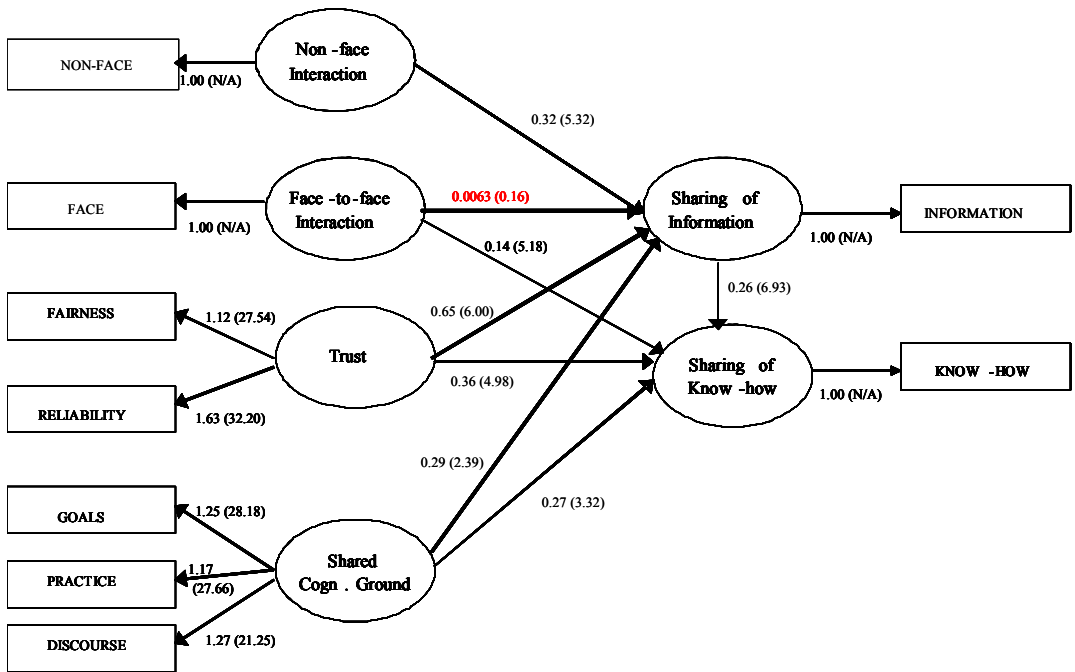


Figure 4. Results of Model 2. Model Chi-Square is 27.60, with 17 degrees of freedom (p-value 0.050, RMSEA 0.035). The figures given are un-standardized lambdas of causal relations with *t*-values in parentheses.

The final models support the hypothesized relationships as follows. As expected, Hypothesis 1 is supported (t-value 7.08): in other words, there is a significant positive relationship between the frequency of interaction and knowledge sharing. Secondly, the results also indicate that there is a significant positive relationship between trust and knowledge sharing, thus supporting Hypothesis 2 (t-value 8.20). These findings are in line with those of previous research conducted on the organizational level (e.g., Barner-Rasmussen, 2003; Tsai & Ghoshal, 1998), and contribute to the literature by indicating that both frequency of interaction and trust are important determinants of cross-border knowledge exchange also on the interpersonal level.

Hypothesis 3 is also supported (t-value 2.30), indicating that there is a significant positive relationship between shared cognitive ground and knowledge sharing. This result makes an important contribution to the literature, as it establishes a significant

positive relationship between shared cognitive ground and knowledge sharing on the interpersonal level, a relation that was not found significant in the Tsai & Ghoshal (1998) study conducted on the unit level. This finding is discussed in more detail in the next section.

Hypotheses 1a to 1d, 2a to 2b, and 3a to 3b were examined in Model 2 as follows. First, Hypothesis 1a was supported (t-value 5.66). In other words, a positive relationship was found between the frequency of non-face-to-face interaction and the sharing of information. Hypothesis 1b was not supported. The removal of the path between Non-face Interaction and Know-how changed the model from non-significant to significant, suggesting that there was no relationship between these variables. Hypothesis 1c was not supported either: while there was a path between face-to-face interaction and the sharing of information, this was not significant (t-value 0.16). Hypothesis 1d was supported, as a significant positive relationship was found between the frequency of face-to-face interaction and the sharing of know-how (t-value 5.18).

Hypotheses 2a and 2b were both supported. In other words, there was a significant path between the level of perceived trust and both the sharing of information (t-value 6.00) and know-how (t-value 4.98), thus substantiating Reagans & McEvily's (2003) finding that strong trustful relationships facilitate the sharing of all kinds of knowledge, not just the tacit or complex kind. Finally, Hypotheses 3a and 3b were both supported: there was a significant path between shared cognitive ground and both the sharing of information (t-value 2.39) and know-how (t-value 3.32). This provides more evidence for the interesting finding that shared cognitive ground is a significant determinant of knowledge sharing on the interpersonal level, even if the relationship has been difficult to verify on the organizational level (see e.g., Tsai & Ghoshal, 1998). Table 3 provides a summary of the findings.

Hypotheses	Results
H1: The higher the frequency of interaction in an interpersonal cross-border relationship, the more knowledge is being shared within the relationship.	Supported
H1a: The more frequent the non-face-to-face interaction, the more information is being shared within the relationship.	Supported
H1b: The more frequent the non-face-to-face interaction, the more know-how is being shared within the relationship.	Not supported
H1c: The more frequent the face-to-face interaction, the more information is being shared within the relationship.	Not supported
H1d: The more frequent the face-to-face interaction, the more know-how is being shared within the relationship.	Supported
H2: The higher the level of perceived trust in an interpersonal cross-border relationship, the more knowledge is being shared within the relationship.	Supported
H2a: The higher the level of perceived trust in an interpersonal cross-border relationship, the more information is being shared within the relationship.	Supported
H2b: The higher the level of perceived trust in an interpersonal cross-border relationship, the more know-how is being shared within the relationship.	Supported
H3: The more shared cognitive ground there is in an interpersonal cross-border relationship, the more knowledge is being shared within the relationship.	Supported
H3a: The more shared cognitive ground there is in an interpersonal cross-border relationship, the more information is being shared within the relationship.	Supported
H3b: The more shared cognitive ground there is in an interpersonal cross-border relationship, the more know-how is being shared within the relationship.	Supported

Table 3. The Results of the Hypothesis Testing.

Discussion

This study builds on and contributes to the growing literature on knowledge flows within the MNC, but rather than focusing on the inter-unit level as most existing research does, it takes an interpersonal perspective. More specifically, it is argued that knowledge sharing in interpersonal cross-border relationships during the course of the daily work of the MNC is a fundamental component of intra-company knowledge flows, a notion that may have been overlooked with the current research focus on organization level knowledge transfer. While organizational transfer continues to be a vital aspect of MNC knowledge flow, it is argued here that in order to obtain a more complete picture of knowledge exchange within the MNC, the current research focus on the organizational level should be complemented with analysis on the interpersonal level.

Furthermore, this study extends current research by examining how the characteristics of interpersonal cross-border relationships affect knowledge sharing in them, drawing upon Nahapiet & Ghoshal's (1998) three-dimensional framework of social capital. The results indicate that the frequency of interaction, perceived trust and shared cognitive ground within an interpersonal cross-border relationship influence knowledge sharing. This represents a significant contribution to the literature as it brings several new insights into the understanding of knowledge exchange within the MNC, as discussed in the following.

First, the results indicate that shared cognitive ground has a significant positive relationship with knowledge sharing within an interpersonal cross-border relationship. This important finding supports Nahapiet & Ghoshal's (1998) original theoretical insight, which has been difficult to verify in previous unit-level research (e.g., Tsai & Ghoshal, 1998). The new insight was enabled by three contributions that this study was able to make. First, it focused on interpersonal level interaction rather than aggregate unit level data, which has been the dominant unit of analysis thus far. Secondly, the study benefited from extensive cross-sectional relationship level data, obtained by combining the name generation technique from social network analysis (Wasserman & Faust, 1994) with traditional multivariate analysis using LISREL structural equation modeling (Jöreskog & Sörbom, 1999). Previous research has typically operated on either network data from one organization only or on cross-sectional aggregate unit level data. Third, while previous research (e.g., Barner-Rasmussen, 2003; Tsai & Ghoshal, 1998) has operationalized the cognitive dimension of social capital as shared vision on the unit level, analysis on the interpersonal level enabled a broadening of this operationalization to include shared goals, shared practice and shared discourse, in line with Nahapiet & Ghoshal's (1998) original conceptualization. Furthermore, the construct of shared vision was not deemed appropriate for the interpersonal level analysis as members of an organization may share the same vision even when they do not have a specific interpersonal relationship (Tsai & Ghoshal, 1998).

Another major finding of this study was that the implications of non-face-to-face and face-to-face interaction are different when considering the sharing of information versus

the sharing of know-how. More specifically, while the frequency of non-face-to-face interaction was found to have a positive impact on the sharing of information, it was not a significant driver of the sharing of know-how. On the other hand, and contrary to what was expected, face-to-face interaction was not found to be a significant driver of information sharing, only of the sharing of know-how. All in all, one could conclude that virtual means of communication are efficient for the sharing of information, as suggested by McKenney et al. (1992), but, as also argued by Eccles & Nohria (1992), they should not replace face-to-face interaction within the MNC. Trust and cognitive ground were found to be significant drivers of both the sharing of information and the sharing of know-how, thereby supporting the results of Model 1.

In addition to listing its contributions, it is also important to consider the limitations of this study. First, it should be pointed out that it was the perceptions of the respondents related to the different characteristics of their relationships and the amount of knowledge received within them, rather than physical knowledge exchanges that were under investigation. Although this was the only way in which data such as this could be obtained, it may have led to a degree of common-method bias. Harman's one-factor test with unrotated factor loadings of all observed variables in the study (Podsakoff & Organ, 1986) was used to assess this. Significant common method bias would result in one general factor accounting for the majority of covariance in the variables. Harman's test yielded three factors with all of the independent observed variables loading on their correct factors. Thus, common method bias is unlikely to have caused the relationships among variables observed in this study. Secondly, the method used in this study does not allow the two-sided analysis of dyads, nor does it provide for the observation of actual situations of knowledge exchange. Both of these approaches would provide additional insight, but were not feasible within the scope of a cross-sectional study; this therefore remains a key limitation. However, the benefit of obtaining cross-sectional relationship level data was judged to compensate for egocentric data by enabling the testing of interaction patterns across several firms and industries. Third, although the dependent variable Knowledge sharing was measured on two observed formative indicators in the main model (Model 1), these indicators were examined separately in Model 2, thus carrying the risks associated with single-item measures. Therefore, even

though the benefit of gaining additional understanding for the results of the main model (Model 1) was judged to outweigh potential single-item measurement problems, especially since the wording of the items had been validated in previous research (Hansen, 1999, 2002), the results of Model 2 should be viewed with the necessary caution. Lastly, this study does not consider the impact of individual level attributes such as personal trustworthiness, the motivation to share knowledge, national cultural dispositions to share knowledge, or other individual characteristics that may have an influence on the interpersonal level. These attributes are likely to cause significant variation in interpersonal knowledge sharing, but it was not possible to take them into account in this study. Further research should consider addressing all of these limitations.

Finally, this study is the first step in providing a strengthened empirical focus on the fundamentally important topic of interpersonal knowledge sharing within the MNC. While it has provided more understanding on how knowledge is being shared within interpersonal cross-border relationships, much remains to be studied. Of particular significance are considerations of how interpersonal level knowledge sharing influences the value-creation activities of the MNC, and how it can facilitate the effective mobilization of knowledge within the MNC. While these topics are outside the scope of this study, they are in urgent need of further research attention.

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APPENDIX 1. Operationalization of Constructs

Operationalization of Constructs	Source
<p>Name Generator Question (Identification of Interpersonal Cross-Border Relationships): Think about all your colleagues who work within your company but outside your country. I would like you to indicate 3 colleagues with whom you have interacted during the last 12 months by each of the following means (please exclude direct bosses or subordinates):</p> <ul style="list-style-type: none"> - Telephone and/or e-mail only (i.e. you have never met them in person) [asking for 3 names] - Meetings and possibly e-mail/telephone (i.e. you have met them face-to-face at least once) [asking for 3 names] - You have worked together on a joint project or other temporary/short-term arrangement [asking for 3 names] - You have worked together in the same work team during an expatriate assignment or other more permanent/long-term arrangement [asking for 3 names] 	<p>Name-generator technique adapted from Wasserman & Faust (1994)</p>
<p>Frequency of Interaction (Structural Dimension of Social Capital): - How often do you interact with this person currently? - By e-mail - By telephone - Face-to-face</p>	<p>Adapted from Ghoshal et al. (1994) & Hansen (1999), adding means of interaction and objective estimates of time</p>
<p>Trust (Relational Dimension of Social Capital): - I can rely on this colleague without any fear of him or her taking advantage of me, even if the opportunity rises. - I can trust this colleague always keeps the promises he or she makes.</p>	<p>Adapted from Tsai & Ghoshal (1998) Adapted from Tsai & Ghoshal (1998)</p>
<p>Shared Cognitive Ground (Cognitive Dimension of Social Capital): - I have a deep understanding of this colleague's business goals. - I have a deep understanding of this colleague's everyday work practice. - I have a deep understanding of the professional language this colleague uses in his/her everyday work.</p>	<p>Adapted from Tsai & Ghoshal (1998) Developed following Nahapiet & Ghoshal (1998) Developed following Nahapiet & Ghoshal (1998)</p>
<p>Knowledge Sharing (Information and Know-How): - I have received facts or information from this colleague (such as data, documents etc.). - I have received personal practical know-how from this colleague (such as advice how to deal with a work- related problem, personal insight, tricks-of-the-trade etc.).</p>	<p>Differentiation between information and know-how adapted from Kogut & Zander (1992) Adapted from Hansen (2002) Adapted from Hansen (2002)</p>

ESSAY 2

KNOWLEDGE SHARING THROUGH EXPATRIATE RELATIONSHIPS: A SOCIAL CAPITAL PERSPECTIVE

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KNOWLEDGE SHARING THROUGH EXPATRIATE RELATIONSHIPS: A SOCIAL CAPITAL PERSPECTIVE

Abstract

This article explores knowledge sharing in expatriate relationships from a social capital perspective. These refer to interpersonal relationships that expatriates form with their host-country colleagues while on assignment, lasting well beyond the actual length of the assignment. It is argued that such relationships provide strong ties that function as channels of knowledge sharing across the different units of the multinational corporation. The empirical results of an exploratory case study show that, compared with more arms-length cross-border relationships, expatriate relationships have several typical characteristics that have direct consequences for knowledge sharing. First, they are, on average, richer and longer-term, and thus create more opportunities for knowledge sharing. They also have a higher multiplying effect, spreading ties more effectively across new units. Second, they are characterized by a higher level of trust and multiplexity, which is driven by shared experience, physical proximity and prolonged face-to-face interaction. Finally, lengthened participation in the assignment unit typically leads to a shared cognitive ground, effectively facilitating knowledge sharing. This study suggests that expatriation may have a sustained effect on knowledge sharing within multinational firms beyond the knowledge transfer perspective discussed in previous research.

Introduction

Social capital theory, referring to assets embedded in and available through a network of relationships (Adler & Kwon, 2002; Nahapiet & Ghoshal, 1998) has become an increasingly established research framework in the field of international business. Issues to which social capital theory has been applied include, for example, knowledge transfer within the Multinational Corporation (MNC) and the creation of organizational advantage (Kostova & Roth, 2003; Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). Similarly, and particularly in recent research, international personnel transfers have been associated with both knowledge transfers within the MNC (e.g., Bonache & Brewster, 2000; Riusala & Smale, forthcoming; Riusala & Suutari, 2004), and individual and organizational capability development (e.g., Gregersen et al., 1998; Suutari, 2002). Specifically, expatriates have been examined as transferors of knowledge, skills and practices from the home unit to the host unit (outward transfer),

as well as from the host unit back to the home unit (inward transfer) (Riusala & Suutari, 2004; Tsang, 1999).

However, while the social capital approach appears to provide a useful framework for looking at international personnel transfers in connection with knowledge sharing within the MNC, it has not previously been applied in this context to any great extent. This is what this article sets out to do, the objective being to explore knowledge sharing in expatriate relationships from a social capital perspective. Expatriate relationships are defined here as the interpersonal relationships that expatriates form with their host-country colleagues while on assignment, lasting well beyond the actual length of the assignment. The research question is thus formulated as, “How do expatriate relationships contribute to knowledge sharing within the MNC?”

The remainder of the article is organized in four sections. First, the concept of social capital is discussed. Second, current research on knowledge sharing and transfer within the MNC is reviewed. Third, the methodology of the study, an exploratory case study of 20 individual managers within a world-leading MNC, is described. Fourthly, the findings of the study are presented, and the main results and contributions are summarized in the concluding section.

The Concept of Social Capital

The concept of social capital has recently attracted considerable attention within the field of the social sciences (Bourdieu, 1983; Burt, 1992; Coleman, 1988; Putnam, 1995). Following Nahapiet & Ghoshal (1998, 243), it is defined here as “the sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network”.

Scholarly research has approached social capital from a number of different perspectives in several research fields. The different approaches include the ‘bonding’

school on the one hand, and the ‘bridging’ school on the other, as described by Adler & Kwon (2002). Bonding social capital is characterized by belonging to a social group, and the effect of social ties that connect people together is stressed (Coleman, 1988). Bridging social capital, in turn, refers to benefits stemming from bridging disconnections, i.e. providing linkages across different social groups (Burt, 1992; Granovetter, 1973). In other words, bonding social capital focuses on within-group ties, and bridging social capital on between-group ties.

This study takes the notion of bridging social capital put forward by Burt (1992, 1997; building on Granovetter’s (1973) work on the strength of weak ties), and combines it with Nahapiet & Ghoshal’s (1998) three-dimensional framework of structural, relational and cognitive social capital. Burt (1992) argues that, due to increased specialization, disconnections between different actors (i.e. structural holes) emerge in social networks. Linking these otherwise disconnected actors (i.e. bridging structural holes) gives access to better or privileged information and opportunities, and thus leads to competitive advantage. As Burt (1997, 341) explains, “[a] structural hole indicates that the people on either side of the hole circulate in different flows of information. A manager, who spans the structural hole, by having strong relations with contacts on both sides of the hole, has access to both information flows.”

Nahapiet & Ghoshal (1998), in turn, examine social capital through three categories, which they refer to as its structural, relational and cognitive dimensions. The structural dimension refers to the actual linkages between individuals or social units, i.e. where and to whom an individual is connected, and the relational dimension to the behavioral assets and requirements embedded in the relationship, including elements such as trust, norms, identity, obligations and expectations. Finally, the cognitive dimension, introduced by Nahapiet & Ghoshal (1998), refers to shared paradigms, codes, and systems of meaning that facilitate a mutual understanding of proper ways of acting within a social system (see also Tsai & Ghoshal, 1998).

This article takes the Nahapiet & Ghoshal (1998) framework of social capital and applies it to expatriate relationships, with a particular focus on cross-border knowledge

sharing.¹³ Expatriate relationships are conceptualized as bridges providing cross-border linkages between different MNC units, through which knowledge can flow across national and cultural boundaries, thereby functioning as ‘boundary spanners’ (Kostova and Roth, 2003). Knowledge flows within the MNC are examined in more detail in the next section, with specific attention being given to the role of expatriation in cross-border knowledge sharing.

Expatriation and Knowledge Sharing within the MNC

The coordination and integration of knowledge across different locations and cultures has been recognized as a key challenge facing multinational corporations (Bartlett & Ghoshal, 1989; Doz et al., 2001; Westney, 2001), and often seen as one of the main sources of competitive advantage for firms (Grant, 1996; Kogut & Zander, 1993; Spender, 1996). As a consequence, cross-border knowledge flows have recently attracted considerable research interest within the international business literature. The internal flow of knowledge within the MNC has been a frequent research theme, referring to the internal exploitation of know-how or practices that have been created somewhere in the organization (Szulanski, 2000). Research on knowledge transfer (e.g., Foss & Pedersen, 2002; Gupta & Govinradajan, 1991, 2000; Kostova, 1999) has focused particularly on the factors that facilitate or impede knowledge flows between subsidiaries, including the properties of the sender and the receiver and the relationship between them, and the properties of the knowledge being sent (Argote et al., 2003).

The role of expatriates and repatriates as carriers of knowledge within the MNC has been recognized by several prominent international business scholars (Doz et al., 2001; Ghoshal & Bartlett, 1989; Nohria & Ghoshal, 1997). While the MNC literature has not covered this issue in more detail, there has recently been notable interest within the IHRM field (Antal, 2000, 2001; Bonache & Brewster, 2001; Downes & Thomas, 2000;

¹³ It should be noted that Nahapiet & Ghoshal’s (1998) original work did not focus solely on bridging social capital, but rather attempted to provide a framework encompassing both its bridging and bonding facets. In a similar manner, this paper focuses on relationships that are bridges in the sense that they provide cross-border linkages between different MNC units, but at the same time it is recognized that the bonding element of these bridging relationships is very important indeed.

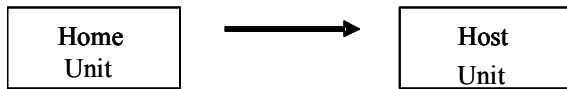
Riusala & Smale, forthcoming; Riusala & Suutari, 2004; Tsang, 1999). Expatriates have traditionally been viewed as exporters of knowledge and organizational practices from headquarters to subsidiaries (Edström & Galbraith, 1977; Harzing, 2001a, 2001b). Recent literature has also recognized other directions of expatriate knowledge transfer, including knowledge transfer back to the home organization during repatriation (Antal, 2000, 2001; Tsang, 1999), or knowledge transfer from subsidiaries to headquarters associated with inpatriation (Harvey et al., 2000). Furthermore, factors influencing the effectiveness of expatriate knowledge transfers have also been examined (Bonache & Brewster, 2001; Riusala & Smale, forthcoming; Riusala & Suutari, 2004).

Other scholars have emphasized knowledge sharing - rather than knowledge transfer – within the MNC, in the sense of mobilizing dispersed knowledge that is scattered around the corporation (Doz et al., 2001; Westney, 2001). This has important implications in terms of how knowledge flows within the MNC are conceptualized. While the term knowledge transfer typically refers to a formally organized activity with specific boundaries (Szulanski 2000), knowledge sharing relates to a wider range of knowledge exchanges in interpersonal and organizational interaction. In this article, the concept of interpersonal knowledge sharing refers to formal and informal knowledge exchanges occurring within interpersonal interaction in network relationships (Barner-Rasmussen, 2003).¹⁴ Knowledge sharing occurs naturally in interpersonal interaction, and may or may not be planned or even intentional. Examples of knowledge transfer, on the one hand, include the transfer of organizational best practices between subsidiaries, and the transfer of a specific set of knowledge or skills from the home to the host organization by an expatriate. On the other hand, knowledge sharing may take place when colleagues discuss a work problem by the coffee machine, a manager calls a friend in another unit for information that he/she needs, or when one gets an idea in a meeting from something a colleague has done.

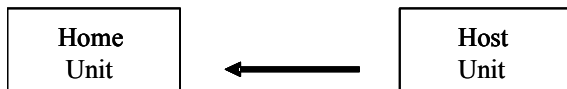
In the expatriation context, knowledge transfer has traditionally referred to either (i) the transfer of a specific set of knowledge or skills possessed by the expatriate to the

¹⁴ Obviously, knowledge sharing and knowledge transfer are interrelated and not mutually exclusive terms, i.e. knowledge transfer may include aspects that are very close to what I have termed knowledge

assignment location (outward transfer), or (ii) the transfer of newly acquired knowledge and skills back to the home organization (inward transfer), as illustrated in Figure 1.



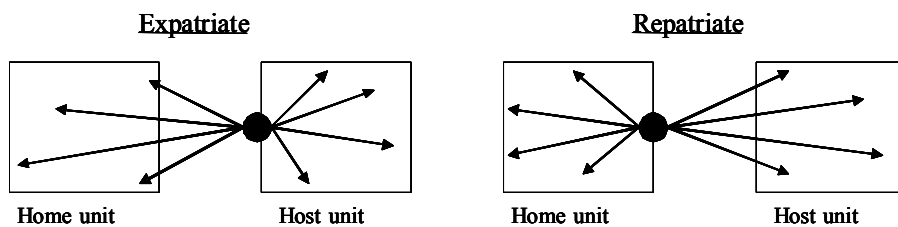
Outward knowledge transfer to the host unit.



Inward knowledge transfer back to the home unit.

Figure 1. The Traditional Approach: Knowledge Transfer by Expatriates and Repatriates.

In contrast, in the context of this study, knowledge sharing refers to formal and informal knowledge exchanges that occur within expatriate relationships, i.e. the interpersonal relationships formed during assignments, typically lasting well beyond moving back to the home unit or to the next assignment location, as illustrated in Figure 2.



Knowledge sharing in the interpersonal networks of expatriates and repatriates

Figure 2. The Network Approach: Knowledge Sharing in the Interpersonal Networks of Expatriates and Repatriates.

sharing, and vice versa. It is argued, however, that there is a distinct difference in emphasis that warrants attention and more research.

It is worth noting that the social capital approach is applicable to both expatriates and repatriates (as illustrated in Figure 2 above), but the direction of the cross-border relationships changes in each case. During the assignment, the direction of the cross-border relationships held by an expatriate is to the home country. Correspondingly, the direction of the cross-border relationships held by the repatriate after his or her return is to the assignment country. This study focuses on the latter direction, i.e. the cross-border relationships repatriates have with their ex-assignment countries after their return. In other words, the focus is on the *new* social capital built during the assignment, as opposed to the social capital already existing in the home unit. Furthermore, although the term ‘repatriate’ was used above for clarity, in the remainder of the article the term ‘manager with expatriate experience’ is used instead in order to emphasize the fact that expatriate relationships have relevance beyond the immediate repatriation stage. It is also recognized that, while return back to the home unit is assumed, many expatriates move on to the next assignment unit, and the concepts discussed here are equally applicable to this situation.

Methodology

This study adopts an exploratory case study design, in which 20 cases of individual managers are embedded in one focal organization (Yin, 2003). This multilevel approach reflects the objective of the study, which is to explore knowledge sharing in expatriate relationships from a social capital perspective. Indeed, according to Grootaert & van Bastelaert (2002), qualitative approaches to social capital are best implemented through case studies, thus allowing multilevel examination.

The research setting needed to be one in which the phenomenon was easily observable (Eisenhardt, 1989). The chosen setting is a world-leading MNC in the fast-moving consumer goods industry with its headquarters in the United States, operations in 80 countries and sales in 140 countries. International personnel transfers are used as a standard way of operating not only between headquarters and the subsidiaries, but also across all units and regions. The company’s Nordic operations, consisting of regional

headquarters in Sweden and to-the-market operations in Finland, Denmark and Norway, were chosen as the focal organization. It provided a context in which a variety of types, levels and directions of transfer both within and outside the region could be observed.

Semi-structured interviews and observation were the primary source of data, but were used in conjunction with several other data sources. First, the interview data consisted of personal interviews with managers with expatriate experience working within the Nordic operations of the case company (n=10), and managers in equivalent positions but with no expatriate experience (n=10). All of the case managers were involved in cross-functional and cross-border interaction in the course of their normal work. Formal research interviews lasted between 60 to 120 minutes for managers with expatriate experience, and between 45 to 60 minutes for managers with only domestic experience. The interviews were conducted in English, Finnish or Swedish. Second, complementing the formal interviews, several follow-up interviews and informal discussions with the case individuals and other personnel provided additional insight, as did formal interviews conducted with two key informants (the Nordic head of to-the-market operations, and the Nordic head of Human Resources). As both key informants also had expatriate experience, they provided not only contextual data but also further insights into the issue under study. Third, in addition to the interview data, a total of 5 days were spent in the research sites for observing and discussing with managers working within the Nordic operation (6 half days in Finland and 2 full days in Sweden). Although the observational material was not systematically coded in the same manner as the interview data, it provided invaluable insight to the research phenomenon. Fourthly, a research journal was written throughout the research process, where insights emerging during the process were jotted down. Fifthly, a number of internal and external documents, and the company Intranet were used to support the analysis.

The case data was analyzed using replication logic, following Eisenhardt (1989), Miles and Huberman (1994) and Yin (2003). All of the interviews were taped and transcribed, and a record was created for each case. The interview questions focused on how the case managers interacted with their colleagues abroad, and sought and shared knowledge. Furthermore, those who had been on an expatriate assignment were asked

their perceptions on what they had learned and how they had benefited as a result of their assignment. Examples of knowledge-sharing-related questions included “What are the typical ways and situation in which you communicate with your foreign colleagues?”, and “When you need information or advice for a work-related problem, what do you do?”. Examples of expatriate-experience-related questions included “What do you think you have learned or benefited from your international assignment?”, “Has the organization benefited in any way?” and “Are you or have you been in contact with anyone you worked with or know from the assignment unit?”.

The data was then content analyzed using Nahapiet & Ghoshal’s (1998) social capital framework as the guiding theory. First, the data was carefully re-read and reflected on several times in order to foster deep familiarization, then it was placed in pre-assigned categories reflecting the three-dimensional framework of social capital described by Nahapiet & Ghoshal (1998). Thirdly, it was coded according to observations and insights arising during the process, in order to identify underlying patterns and relationships. Finally, the data on expatriate relationships from the managers with expatriate experience was systematically compared with the arms-length-relationship data from those with no expatriate experience in order to evaluate regularities and differences in the data.¹⁵

Findings

This section examines expatriate relationships in the light of Nahapiet & Ghoshal’s (1998) three-dimensional framework of social capital. As discussed earlier, this framework breaks social capital into its structural, relational and cognitive dimensions. It is important to note, however, that while these dimensions are distinctive and discussed here separately, they are both interdependent and overlapping. It should also

¹⁵ It is important to note that managers with expatriate experience can hold both expatriate relationships and arms-length ones. In other words, managers who hold expatriate relationships with their close ex-host-country colleagues typically also have other, more arms-length relationships with colleagues elsewhere. Thus, even if this study compares expatriate relationships held by managers with expatriate experience to arms-length relationships held by managers with only domestic experience for analytical reasons, it is not claimed that all relationships maintained by managers with expatriate experience are expatriate relationships.

be highlighted that the impact individual characteristics and dispositions, or national and organizational culture, while being important factors influencing cross-border knowledge sharing, are outside the focus of this study.

Managers with expatriate experience provide boundary-spanning relationships between their home and assignment units. It seems particularly fruitful to compare them with other, more arms-length (Uzzi, 1997) cross-border relationships involving direct and personal inter-unit liaison. Arms-length cross-border relationships are an aspect of many MNC managers' everyday work, and they are typically fostered through meetings, visits and projects. In the cases in question, they included cross-border interaction between marketing teams and key account teams and interaction between the different functions such as sales, marketing, logistics and finance. These interactions took place both within the Nordic region, between the Nordic region and European Headquarters, and between the Nordic region and other country operations. It appears from the data that expatriate relationships have several characteristic properties that make them more effective channels of cross-border knowledge sharing than other, more arms-length relationships. These are discussed next.

The Structural Dimension

The case data indicated that expatriate relationships have several structural characteristics that differentiate them from more arms-length cross-border relationships. First, they were typically richer than arms-length relationships. This means that managers with expatriate experience had typically a multitude of different types and levels of both formal and informal relationships at the assignment unit. This density of ties created multiple opportunities for interpersonal interaction, providing a broader base for knowledge sharing than arms-length relationships, which were typically less diverse.

Second, expatriate relationships were characteristically long-term. The case data indicated that personal relationships built during an assignment tended to last long beyond the assignee's return back to the home unit, and were typically longer-lasting than arms-length cross-border relationships. This was a function of the strength of the

relationship: it was built on shared experience, extended physical proximity and close face-to-face interaction during the assignment. Naturally, the longer the network relationship lasts, the more opportunities there are for knowledge sharing, as illustrated by the following quotation from an expatriate currently on his second assignment, as opposed to a typical comment related to arms-length cross-border relationships.

“Let’s say I have a problem with a brand in Norway, and I know from talking to people here that something happened in 1999. I also know that X was the country manager and Y and Z worked with the issue back then. As I’ve known them for a long time [worked with them during an earlier assignment], I can call them directly and get first-hand information of the background of the issues back then.” [Finnish manager, currently on assignment in Norway, expatriate experience from regional headquarters in Sweden]

“I give them information, but the problem with [the regional headquarters] is that people change every one, two, three years, and the information does not seem to get to the successor.” [Finnish manager, no expatriate experience]

Third, expatriate relationships had significant multiplying effects beyond the home – host unit continuum. This refers to host-country colleagues and other expatriates on assignment in the same unit moving into third countries and thus creating linkages to new units. While one person might benefit from this multiplying effect without having had an international assignment, it became evident from the case data that the effect was significantly higher with those individuals who had expatriate experience. This was driven by two factors. First, they had not only home-country colleagues but also colleagues in the host country moving on further international assignments. Second, the expatriates tended to form close relationships with other expatriates on assignment in the same unit, a phenomenon also observed by Manev and Stevenson (2001). When these expatriate colleagues returned to their home units (or moved into the next assignment unit), they carried their personal relationships with them, spreading linkages across a number of different units, as illustrated below.

“I called this vice president [whom I know from my assignment in Holland] . . . he’s now at the European headquarters leading this business, with which we needed some help. I called him, and suddenly he got six people doing things, and then we were connected to some UK people who we’d otherwise never have known to talk to . . . if you move a lot . . . you start to have contacts everywhere.” [Finnish manager, previously on assignment in Holland]

The Relational Dimension

Within the relational dimension, aspects of trust came out particularly strongly in the case data. With reference to network relationships, trust has been defined as an expectation that one's exchange partner will act benevolently, and not opportunistically, within a relationship (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). Trust is just as relevant to domestic organizations and intra-unit relationships as to cross-border linkages. However, the MNC context amplifies its importance as it creates additional geographical, cultural and linguistic barriers to interaction. According to the case data, expatriate experience may be able to reduce these barriers by increasing trust on the interpersonal level.

Shared experience and intensity of interaction seemed to be the key drivers of trust in expatriate relationships. These trust-enhancing mechanisms were all typical outcomes of expatriate assignments, in which expatriates worked with and alongside host-country colleagues in close physical proximity and daily face-to-face interaction; this is in contrast to arms-length cross-border relationships that were not usually characterized by physical proximity and prolonged face-to-face interaction. Trust created by mutual history seemed to be powerful in enabling the cutting across the geographical, cultural and linguistic barriers within the MNC, both during and after the assignment. In the case interviews, these trustful personal relationships were repeatedly accredited to providing direct linkages to other units, creating shortcuts across organizational barriers, and providing access to people or information across borders, as illustrated by the following example.

“X [brand director at the European headquarters] tends to call me if he has a question concerning his brand in Finland [rather than using the official route through the country manager] . . . I guess it's because we have during the years developed a certain trust towards each others' judgment and expertise . . . you find things out so much quicker than through formal routes.” [Finnish manager, worked closely with X during a previous assignment]

Obviously, the relational dimension of social capital does not necessarily always have positive consequences: there were also cases in which past experiences lead to a lack of trust within individual network relationships. However, a lack of trust was more commonly attributed to the fact that arms-length cross-border relationships lacked intensive face-to-face interaction than to personal chemistry, as illustrated by the following example.

“[P]eople don’t meet often enough and that’s sometimes a barrier . . . how different it is when you know the face and you’ve had . . . a shared moment together versus when you haven’t . . . we have had situations . . . [when] there has been a strange tension and people haven’t been working well together, and then . . . they actually meet and suddenly everything is very different . . . the person becomes a person.” [Finnish manager in a liaison role at the regional headquarters]

Furthermore, expatriate relationships were typically more multiplex than arms-length cross-border relationships. Multiplexity refers to multiple contents within one relationship, such as working together, playing golf together, and going to the same parties (Granovetter, 1973; Monge & Contractor, 2003). A key driver for multiplexity in expatriate relationships was physical proximity during an assignment: you simply knew your colleagues better on both the professional and the personal level, regardless of whether you were personal friends or not. These multiplex relationships created strong ties that have been associated in previous research with being more available and motivated to share knowledge, advice and help (Krackhardt, 1992). This is evident in the following example of a manager comparing a personal cross-border relationship built by mutual experience to a more arms-length relationship.

“I happen to be very close with Y who’s the country manager in Denmark . . . because we’ve worked together . . . we speak a couple times a week and we both chat socially but also do business issues with each other . . . even while I’ve been in Finland, he has called two or three times and asked how you do this in Finland - it’s so much easier now when he knows me well as opposed to [the previous country manager] whom he didn’t really know, to get the inside scoop.” [Danish manager, currently on assignment in Finland]

The Cognitive Dimension

Although the cognitive dimension, referring to a shared ‘cognitive ground’ (Nonaka & Takeuchi, 1995), has perhaps received less focus in previous research than the other two dimensions, it came out particularly strongly in the case data. Extended participation in the host unit typically led to an increased awareness of the thought collectives and of the often subtle and tacit codes of conduct present within that unit. In other words, the managers with expatriate experience had an insider view of ‘the name of the game’, understanding the discourse and expected ways of behaving in the other unit better than the managers without that experience.

“You both get to know the people [at the headquarters], and learn ‘the name of the game’. Which is more important? I would say both are very important but learning the game is even more so.” [Swedish manager, after having been on assignment at the European headquarters]

All of the managers with expatriate experience reported a significant shift in their understanding of the thought collectives, the tacit codes of conduct, and the language systems and codes prevalent in their assignment units. This also seemed to translate into a higher general ability to take different perspectives (Boland & Tenkasi, 1995). In contrast, the case individuals who had not had any expatriate experience were often aware of differences, but tended to attribute them to a lack of understanding by the others. This contrast is well illustrated by these representative quotations from two people in the same country operation: both of them had regular contact with the regional headquarters, but one had been there on assignment and the other had no expatriate experience.

“[Having been on assignment at the regional headquarters] one understands how the system works, how the different functions work - how you talk - who you talk to - and where - what language you use.” [Finnish manager, having been on assignment at the regional headquarters]

“It should be enough that one works for this company; that a request always has a valid reason. But there’s always a real interrogation, people don’t trust each other . . . sometimes so much time and effort goes for explaining and building [credibility and the

relationship]” [Finnish manager, no expatriate experience; referring to his cross-border relationships at the regional headquarters]

Table 1 summarizes the different characteristics of the expatriate relationships identified in this study in comparison to more arms-length cross-border relationships. Obviously, there is significant individual variation within both expatriate and arms-length relationships, driven by e.g., individual characteristics, personal motivation, political factors or interpersonal chemistry. In other words, individual arms-length relationships may be significantly stronger than individual expatriate relationships. However, the exploratory case data indicates clear differences between the two relationship types when examined as a whole.

TYPICAL CHARACTERISTICS OF EXPATRIATE RELATIONSHIPS, compared to arms-length cross-border relationships		
Expatriate relationships	Characteristic	Arms-length relationships
Typically several different levels and types of relationship in one country	Richness	Typically only a small number of relationships in one country
Typically significantly longer-lasting than the actual length of the assignment	Long-term	Typically discontinued when there is a change in the assignment
Additional multiplier effects when host-country nationals and other expatriates move to third countries	Multiplier effects	Multiplier effects only if home-country colleagues move to third countries
Typically high trust, driven by prolonged physical proximity and face-to-face interaction	Trust	Typically less face-to-face interaction leading to potential trust-related issues
Typically multiple contents within relationships driven by prolonged physical proximity	Multiplexity	Typically mostly task-related content
Typically increased awareness of differing thought collectives; “insider view”	Awareness of different thought collectives	Typically mostly superficial awareness; “outsider view”
Typically increased understanding of the differences in required behavior; “name of the game”	Understanding and use of differing codes of conduct	Potential communication problems typically attributed to the lack of understanding by others
Typically increased understanding of the different discourses; “speaking their language”	Understanding and use of different language systems and codes	Potential communication problems typically attributed to the lack of understanding by others

Table 1. Typical Characteristics of Expatriate Relationships vs. Arms-length Cross-Border Relationships

Discussion and Conclusions

As discussed earlier, expatriation has primarily been linked in previous research to the transfer of knowledge, skills and practices from the home unit to the host unit or vice versa (e.g., Bonache & Brewster, 2000; Riusala & Suutari, 2004; Tsang, 1999). Although the importance of personal networks has been recognized by Antal (2000, 2001), Harzing (2001a, 2001b) and Welch & Welch (1993), for example, and in the external relations context by Au & Fukuda (2002), the social capital approach applied above seems to have been able to bring new insights into the role of expatriation in facilitating effective knowledge sharing within the MNC.

Specifically, this study was able to identify several typical characteristics of expatriate relationships, leading to a higher level of social capital present within them than in more arms-length cross-border relationships. All types of cross-border relationships may function as boundary-spanning linkages (Kostova & Roth, 2003). However, while the mere existence of such linkages is a necessary condition for effective knowledge sharing, it may in itself not be sufficient. It has been recognized in previous research that the sharing of tacit and complex knowledge in particular requires a strong tie between exchange partners (Hansen, 2002; Reagans & McEvily, 2003). The findings of this study indicate that expatriate experience has the capacity to create strong ties to ex-assignment unit colleagues, driven by shared experience, physical proximity and prolonged face-to-face interaction, and – importantly – lasting long beyond the assignment.

Obviously, there is significant variation in the strength of expatriate relationships, i.e. expatriates do not build strong relationships with all assignment-unit colleagues but typically with those with whom they have worked closely. Moreover, other types of cross-border relationships may also provide strong ties. Nevertheless, the findings of this study clearly indicate that, on average, expatriate relationships are stronger than arms-length cross-border relationships, thus leading to the following two propositions for further empirical testing.

Proposition 1: Expatriate relationships have a higher level of social capital than other, more arms-length cross-border relationships.

Proposition 2: A higher level of social capital in expatriate relationships leads to more knowledge sharing within them than in other, more arms-length cross-border relationships.

To summarize, the contributions of this study are as follows. First, it provides a novel perspective on international transfers, exploring knowledge sharing in expatriate relationships through a social capital lens. Second, by doing so, it identifies several typical characteristics of expatriate relationships contributing to a higher level of social capital within them than in other, more arms-length cross-border relationships. As strong ties have been recognized in previous research (Hansen, 1999, 2002) to facilitate the sharing of complex knowledge, this may have important implications for knowledge sharing within the MNC. Furthermore - and importantly - this study shows that expatriate relationships may have a sustained impact on cross-border knowledge sharing beyond the immediate repatriation stage discussed in previous research.

The obvious limitation of the study is that all the individual cases were embedded in one focal organization. While this was a conscious choice that enabled multilevel examination, it may have led to contextual bias. Furthermore, the study was exploratory in nature. Thus, these findings should be tested and further verified cross-sectionally. What this study has achieved, however, is that it has identified the social capital aspect as an important facet of international transfers that warrants further study. This carries important implications for both strategic HRM as well as knowledge management within MNCs.

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ESSAY 3

**SHARING KNOWING:
CROSSING COGNITIVE BOUNDARIES
IN MULTINATIONAL ORGANIZATIONS**

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Abstract

This paper explores knowledge sharing in interpersonal cross-border relationships between managers with multinational corporations (MNCs). It argues that a significant part of knowledge sharing within the MNC occurs in interpersonal interaction between MNC managers within the daily work of the organization. Furthermore, it conceptualizes the MNC as not only a differentiated network but a distributed network characterized by differentiated communities of knowing. In an analysis of 63 examples of cross-border interaction, derived from the interviews of 22 MNC managers, it examines cross-border interaction between MNC managers as instances of sharing knowing rather than transferring knowledge. By doing so, it provides a complementary perspective for examining knowledge exchange within the MNC, and highlights the importance of aspects such as overcoming cognitive boundaries in interaction. Furthermore, it identifies six means of overcoming cognitive boundaries, which are typically used in interpersonal cross-border interaction.

Introduction

A major part of today's business is conducted through multinational organizations which due to their geographical dispersion need to operate effectively across multiple boundaries existing within the operation (Bartlett & Ghoshal, 1989; Doz et al., 2001; Nohria & Ghoshal, 1997; Westney et al., 2001). This geographical dispersion of the multinational corporation leads to the presence of both cultural and linguistic boundaries between its different units and people working within them. Furthermore, organizational boundaries such as exist between different functions or other organizational groups become amplified when there is an added element of geographical distance. There is ample evidence that these boundaries have an adverse impact to the effective flow of knowledge within multinational organizations (Amin & Cohendet, 2004; Boland & Tenkasi, 1995; Brown & Duguid, 2000). As Brown & Duguid (2000) argue, organizational structures often contribute to less than perfect flow of knowledge between the different structural entities. Burt (1992, 1997) maintains that specialization within large organizations creates disconnections which lead to differentiated pools of knowledge in the various parts of the operation. Boland & Tenkasi (1995) add that organizations are characterized by distributed knowledge,

where different organizational groups cannot easily share ideas due to cognitive boundaries. Furthermore, cultural differences have been considered as a major barrier of knowledge flows (Bhagat et al., 2002; Kedia & Bhagat, 1988; Leung et al., 2005), as have language issues (Brannen, 2004; Marschan-Piekkari, 1998).

Therefore, in order to increase the effectiveness of internal knowledge sharing, it is important to understand better how knowledge is being shared across the multiple boundaries existing within the organization. The value of cross-boundary knowledge sharing lies in its ability to link previously unconnected knowledge, therefore facilitating innovation and the development of new knowledge, which is imperative for the creation of competitive advantage (Doz et al., 2001; Kogut & Zander, 1993; Westney, 2001). Hardagon & Sutton (1997, 716) express it well:

“Ideas from one group might solve the problems of another, but only if connections between existing solutions and problems can be made across the boundaries between them. When such connections are made, existing ideas often appear new and creative as they change form, combining with other ideas to meet the needs of different users. These new combinations are objectively new concepts or objects because they are built from existing but previously unconnected ideas.”

Cultural, linguistic and organizational disconnections create cognitive boundaries, as people on the different sides of them may think, act and interact in different ways (Boland & Tenkasi, 1995; Carlile, 2002; Hardagon & Sutton, 1997; McDermott, 1999). This is important as the daily life of the multinational organizations consists of ongoing interaction between managers working in the different units of the operation, who exchange information and knowledge in order to do their work. The objective of this paper is to examine knowledge sharing in these interpersonal interactions, with particular emphasis to boundary crossing. Consequently, the specific research question this paper seeks to answer is as follows: “*How do managers working in the different units of the multinational operation overcome cognitive boundaries in order to share knowledge in interpersonal interaction?*”

The paper is organized as follows. Previous research concerning interpersonal knowledge sharing in multinational organizations is discussed first. Second, the notion of *sharing knowing* is developed and discussed in order to describe how knowledge sharing takes place when individual managers interact. Third, this theoretical lens is used in the empirical part to examine how personal knowing is being shared across cognitive boundaries, drawing on a qualitative data set of 63 instances of sharing knowing derived from 22 managers working in a world-leading multinational company. Finally, the main results and contributions of the study are discussed in the concluding section in relation to theory and practice.

Interpersonal knowledge sharing in multinational organizations

Knowledge issues within multinational organizations have received significant research attention recently (e.g., Andersson et al., 2002; Doz et al., 2001; Foss & Pedersen, 2002; Gupta & Govinradajan, 1991, 2000; Kogut & Zander, 1993; Szulanski, 2000). Previous research has, for example, found that knowledge is typically ‘sticky’ and difficult to transfer across the organization (Szulanski, 2000). It has also established that the effectiveness of knowledge exchange is influenced by both the characteristics of knowledge and the ease of its transfer (Zander & Kogut, 1995), properties of the sender and the receiver, and properties of the transmission channel (Argote et al., 2003; Gupta & Govirandajan, 1991, 2000). Furthermore, recent work has examined institutional (Jensen & Szulanski, 2004; Kostova, 1999; Kostova & Roth, 2002) and cultural (Bhagat et al., 2002; Brannen, 2004; Kedia & Bhagat, 1988) aspects of knowledge exchange. Finally, relational factors such as the network position of a particular unit, the configuration of its relationships and social capital embedded in them have been found to influence inter-unit knowledge sharing positively (Hansen, 1999; Reagans & McEvily, 2003; Tsai, 2001, 2002; Tsai & Ghoshal, 1998).

A central aspect of inter-unit knowledge exchange is the knowledge sharing that occurs when managers working in different parts of the organization interact on behalf of their respective units, and in order to their work. In fact, Brass et al. (2004) argue that inter-

unit ties not only consist of, but are often a *function of* interpersonal relationships. In this paper, the concept of interpersonal knowledge sharing refers to formal and informal knowledge exchanges occurring within interpersonal interaction (Barner-Rasmussen, 2003), both within and beyond formal reporting lines, and in both one-on-one and small group interaction. Knowledge sharing takes place during the course of the everyday work of managers; in face-to-face meetings, over the telephone or via e-mail, as well as in informal encounters such as popping into someone's office or chatting at the coffee machine. Unlike more structured means of knowledge sharing, such as top-management visits and meetings, internal conferences and company intranets, interpersonal relationships provide both formal and informal linkages at the operational level where the day-to-day work of the multinational operation is conducted.

Interpersonal relationships have an ability to create bridging ties between the different parts of the organization, creating channels through which knowledge can flow across geographical, cultural, linguistic and organizational boundaries. As such they have an ability to function as 'boundary spanners' (Kostova & Roth, 2003) across what Burt (1992, 1997) calls structural holes, i.e., disconnections between the different parts of the organization. This is important, as innovation within the organization is typically a product of connections in which previously unrelated agents, goods, and knowledge come into interdependence (Amin & Cohendet, 2004; Hargadon & Sutton, 1997). In fact, Doz et al. (2001) argue that people are one of the most important carriers of knowledge within multinationals.

While organizational level knowledge transfers can typically be seen as re-creations of organizational best practices across different units (Szulanski, 2000), knowledge sharing between managers may not follow the same reasoning.¹⁶ On the interpersonal level, one should perhaps rather talk about the *sharing of personal knowing* rather than the transfer

¹⁶ It is worth noting that this paper differentiates knowledge sharing from the often interchangeably used term knowledge transfer. Typically, the term knowledge transfer refers to the re-creation of organisational practices between subsidiaries as an organised activity (Szulanski, 2000), whereas knowledge sharing occurs naturally in interpersonal interaction and may or may not be planned or even intentional. Obviously, knowledge sharing and knowledge transfer are interrelated and not mutually exclusive, i.e. knowledge transfer may include aspects that are very close to what I have termed knowledge sharing, and vice versa. It is argued, however, that there is a distinctive difference in emphasis that warrants attention and more research.

of knowledge, as knowledge in interpersonal interaction always involves people who know (McDermott, 1999). This differentiation between knowledge and knowing may have important consequences in terms of how knowledge sharing on the interpersonal level is conceptualized. This difference between the two terms is discussed in more detail in the following, building upon the literature on knowing and practice (e.g., Boland & Tenkasi, 1995; Brown & Duguid, 2000; Cook & Brown, 1999; Lave & Wenger 1991; Orlikowski, 2002; Wenger 1998).

Sharing knowing

Knowing and practice

The epistemology of ‘knowing’ (Amin & Cohendet, 2004; Blackler, 1995; Cook & Brown, 1999) differs from the more traditional view of ‘knowledge’ in that ‘knowing’ is regarded as an innate part of action or practice, i.e. as something we do, instead of something we possess (Cook & Brown, 1999). In other words, according to this view, knowing is action and interaction situated in particular contexts, when a person acts in a knowledgeable way (Lave & Wenger, 1991; Orlikowski, 2002), as opposed to knowledge within the more traditional epistemology, which is seen as something we hold and then employ (Cook & Brown, 1999). McDermott (1999, p. 105) gives an illustrative example of this:

“To know a city is to know its streets, not as a list of street names or a map, but as a set of sights and routes useful for different *purposes*. Driving through your hometown to avoid rush-hour traffic, find an interesting restaurant, bring relatives sightseeing, or go bargain hunting, you not only draw on a vast amount of information, you use the information in different ways. Professionals do the same thing. They face a stream of problems; when to run a product promotion, how to estimate the size of an oil field, how to reduce the weight and cost of a structure. To solve these problems, professionals *piece information together*, *reflect* on their experience, *generate* insights, and *use* those insights to *solve* problems.” [Italics in the original]

In other words, knowing is thinking and acting for a purpose in a specific context; typically professionals not only apply a priori knowledge to a situation, but rather engage in continuous problem solving around issues facing them (Amin & Cohendet, 2004; Orlikowski, 2002). Similarly, sharing knowing is *thinking-in-interaction*, i.e. the act of addressing a specific problem or question in interaction in a knowledgeable way. Typically, when managers interact, they discuss and compare their respective business issues, exchange experiences and generate joint insights, and use these insights in interaction to solve problems. This involves more than statically ‘transferring’ a piece of knowledge: managers typically draw on their existing knowledge and experience (both explicit and tacit), but use them in a dynamic way develop solutions to specific problems in specific contexts in a process of interactive thinking-in-action.¹⁷

Distributed knowing within multinational organizations

The concept of knowing has been closely associated in the literature with the theoretical perspectives of practice and communities (Lave & Wenger, 1991; Wenger, 1998). For example, Orlikowski (2002) argues that organizational knowing emerges from the ongoing and situated practice of its members, i.e. from what people do every day to get their work done. In organizations this knowing in practice is distributed across different groups of specialized professionals, each dealing with a part of the overall task of the organization (Carlile, 2002; Boland & Tenkasi, 1995). These organizational groups bound by a common interest and practice, could be conceptualized in terms of what Boland and Tenkasi (1995) call ‘communities of knowing’.¹⁸ They are characterized not only by different knowledge bases but also by differentiated ‘thought worlds’, language and narratives, and systems of meaning (Boland & Tenkasi, 1995; Nahapiet & Ghoshal, 1998); in other words, their members are thinking and acting within specific frames of

¹⁷ In this, I subscribe to Cook & Brown’s (1999) view on knowledge and knowing. They see the two paradigms as parallel and complementary, rather than as competing. For them, existing knowledge - be it explicit or tacit, individual or collective - is used as tool in the context of a situated interaction between the knower and the world. In other words, knowing is thinking-in-action, knowledge is the base upon which knowing draws.

¹⁸ Other concepts echoing the Boland & Tenkasi (1995) idea of ‘communities of knowing’ include epistemic communities (e.g., Amin & Cohendet, 2004; Håkanson, 2004) and communities of practice (in their original sense, as described by Lave & Wenger, 1991; Wenger, 1998).

knowing. Along this line of argument, firms could be seen as ‘constellations of diverse communities’ (Amin & Cohendet, 2004, p. 74), or ‘communities of communities’ (Brown & Duguid, 2000, p.53), in which dynamic and overlapping communities of knowing are found in both traditional organizational structures such as departmental or functional groups (e.g., software engineers, the marketing department), and in more informal compositions such as teams or task forces. These differentiated communities are further embedded within the multinational organization in a variety of contexts across geographical, cultural and linguistic boundaries.

Therefore, if multinational organizations are viewed not only as differentiated networks (Nohria & Ghoshal, 1997) but also as a *distributed networks characterized by differentiated communities of knowing*, this gives us an interesting perspective on intra-organizational knowledge flows, particularly on the interpersonal level. If we see knowledge as something that is possessed, then the research focus should be on how to transfer knowledge effectively from one exchange partner to another. Accordingly, properties of knowledge such as tacitness/explicitness, complexity and codifiability (e.g., Zander & Kogut 1995), and barriers to transfer (e.g., Gupta & Govinradajan, 1991, 2000; Szulanski, 2000) assume significance. On the other hand, if we see ‘knowing’ as something that is done, rather than possessed, the research focus shifts to interaction between people-who-know (McDermott, 1999). Specifically, if knowing is viewed as thinking and acting embedded in practice, knowledge exchange needs perhaps to be examined as instances of sharing our thinking across the boundaries of two practices, rather than as transferring knowledge that is in our possession, regardless of whether it is tacit or explicit.¹⁹

¹⁹ It has to be said that this is by no means to argue that knowledge cannot be transferred. Quite the contrary, the more established view of knowledge (as something that is possessed) represents an important step forward in our understanding of knowledge flows within multinational organizations, and this progress will continue. However, the notion of knowledge exchange as sharing knowing might have significant *complementary* potential in contributing to the understanding of knowledge flows within multinationals, particularly on the interpersonal level.

Sharing knowing across boundaries

If knowledge exchanges are viewed as instances of sharing knowing in interpersonal interaction, then one should examine the very interaction in more detail. There are two dimensions here: (i) the personal relationship and (ii) the organizational context within which the interaction is taking place.²⁰ These dimensions reflect the relational and cognitive proximity of the interaction partners, as discussed in Amin & Cohendet (2004). Relational proximity involves aspects of interpersonal trust and other relational factors, which have been discussed extensively in the literature (see e.g., Abrams et al., 2003, for an overview in a network context). The present investigation focuses on the cognitive dimension of proximity, which has attracted significantly less research focus in the literature concerning knowledge flows in multinational organizations (Nahapiet & Ghoshal, 1998).

Cognitive proximity refers to the degree of shared cognitive context between exchange partners, i.e. how commensurable the perspectives, thought worlds, language and systems of meaning of the interaction partners are (Boland & Tenkasi, 1995). As Boland & Tenkasi (1995, 355) explain, “They may use the same words..., but they will use them to see different things in different ways... They will look at the same phenomena..., but will see different problems, different opportunities, and different challenges.” These are typical problems of interpretation within organizations, and within multinational organizations these cognitive boundaries can be not only functional but and cultural and/or linguistic, driven by the geographical dispersion of the firm. The challenge as far as the interpersonal sharing of knowing is concerned, then, involves how managers ‘navigate and negotiate’ the multiple cognitive boundaries these interactions cross (Carlile, 2002; Orlikowski, 2002).

In sum, sharing knowing in interpersonal relationships is seen in this paper as a process of thinking-in-interaction across the cognitive boundaries of the two (or more) communities of knowing in which the interaction partners are embedded. This argument

²⁰ The physical aspect of where, when and how interaction is taking place is beyond the focus of this study. It is assumed that most interpersonal relationships have some continuity, and interaction may take a variety of forms such as face-to-face meetings, telephone or electronic mail, over time.

is illustrated in Figure 1 below. The interaction partners (Managers 1 and 2) are embedded in their respective communities of knowing (Subsidiaries/Groups X and Y), which are characterized by specialized knowledge bases and frames of knowing. When these managers interact (as indicated by the two-way arrows), they have to overcome cognitive boundaries in order to develop solutions to specific business problems in specific contexts.

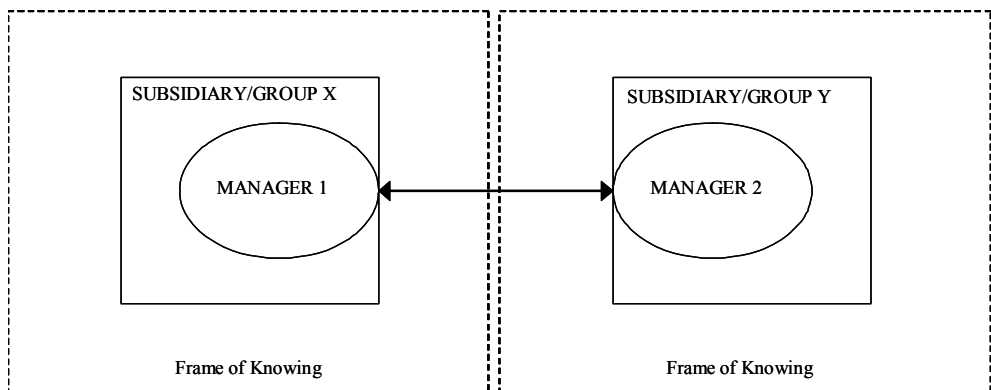


Figure 1. Sharing Knowing in Interpersonal Cross-Border Relationships: Thinking-in-Interaction across the Cognitive Boundaries of Two Communities of Knowing.

Data and Methods

The sharing of knowing in interpersonal relationships across cognitive boundaries is explored in this study through an in-depth qualitative analysis of 63 such instances derived from the interviews of 22 managers working in one focal organization.

The research setting is a world-leading multinational corporation within the fast-moving consumer goods industry with headquarters in the United States, operations in 80 countries and sales in 140 countries. The company could be described as a differentiated global network (Nohria & Ghoshal, 1997), in which the daily operational work of the organization involves frequent interaction between managers across the different units. The company's Nordic operations, consisting of regional headquarters in Sweden and

to-the-market operations in Finland, Norway and Denmark, were chosen as the focal organization. All of the managers were selected on the basis of their involvement in interaction across multiple boundaries (including geographical, cultural, linguistic and functional ones) in the course of their normal daily work. Furthermore, they were deemed to typify the various possible roles and positions involved in interaction across boundaries; these roles included country sales managers (4), marketing managers (5), key-account team managers (10), and other liaison roles (3). These interactions took place both between the different units and countries within the Nordic region, between the Nordic region and European Headquarters, and between the Nordic region and other country operations. Examples of typical interaction instances included multi-functional strategy development between the European headquarters and the Nordic unit, product launch planning between brand teams at the regional headquarters and key-account teams in the Nordic countries, and day-to-day business interaction between the different functions such as sales, marketing, finance and logistics, all located in different units. This research design provided a context in which a host of different examples of boundary crossing interaction could be observed both within and outside the region. Furthermore, the embedded multilevel approach allowed comparison between the various means used for overcoming cognitive boundaries in the interpersonal sharing of knowing, but at the same time held the research setting constant (Yin, 2003).

Semi-structured interviews and observation were the primary sources of data, and were used in conjunction with several other data sources as follows. First, formal research interviews lasting between 45 and 120 minutes were conducted, with the average interview lasting 60-90 minutes. Secondly, additional follow-up interviews and informal discussions were carried out with the managers in order to obtain clarification or dig more deeply into interesting issues. The interviews were conducted in English, Finnish or Swedish. Thirdly, in addition to the interview data, a total of five days were spent at the research sites observing and discussing with managers working within the Nordic operation (six half days in Finland and two full days in Sweden). Although the observational material was not systematically coded in the same manner as the interview data, it provided invaluable insight into the research phenomenon. Fourthly, a research journal was written throughout the research process, and insights that emerged

were jotted down in it. Fifthly, a host of both external and internal documents, including annual reports, internal magazines and other printed material, organization charts, the company Internet site, the company Intranet, and news archives were used to support the analysis. Finally, extended previous experience with the focal organization prior to this investigation enabled an in-depth understanding of the overall research context.

The interview questions focused on how the managers interacted and shared knowledge with colleagues outside their own unit. They included questions such as “*What are the typical ways and situations in which you communicate with your foreign colleagues?*”; “*Who do you talk to outside your own unit?*”; “*Who talks to you?*” and “*When you need information or advice for a work-related problem, what do you do?*” The interviewees were encouraged to give practical examples of various interaction situations. Furthermore, more detailed questions were asked to detect alternative behaviors and to establish the perceived ease or difficulty of interaction and knowledge exchange in the various instances. This procedure resulted in rich descriptions of 63 different instances of sharing knowing being detected in the interviews, which were used as the basis of the analysis. All 63 instances crossed a national border (i.e. the interaction partners were located in different countries), together with the crossing of at least one cognitive boundary including cultural (i.e. the interaction partners were of different nationalities), linguistic (i.e. the interaction partners had different mother tongues) and functional (i.e. the interaction partners worked in different functions). A summary of the operationalization of the different boundaries is provided in Table 1 below.

Boundary	Operationalization
Geographical	Interaction partners located in different countries
Cultural	Interaction partners have different nationalities
Linguistic	Interaction partners have different mother tongues
Functional	Interaction partners work in different functions (sales, marketing, finance, logistics)
Other organizational	Interaction partners work in different teams, project groups etc.

Table 1. The Operationalization of the Various Cognitive Boundaries

The analysis was carried out first for each instance of sharing knowing independently, and thereafter across the different instances using replication logic to detect similarities and differences (Eisenhardt, 1989; Yin, 2003). The reliability and validity of the research process was attended to as follows. First, all interviews were taped and transcribed, and a record was created for each interviewee including rich descriptive data of the individuals and their various work contexts, which created a retrievable chain of evidence throughout. Second, multiple sources of evidence were used to support the interview data, including observational insights, research notes and various documents. Third, the data was carefully re-read and reflected on several times to allow deep familiarization, and then coded according to observations and insights arising during the fieldwork and analysis process, forming tentative categories of the different means of boundary crossing. These categories were constantly modified to account for the accumulating data. Fourth, the data collection was informed by previous research in the fields of knowledge, networks, knowing and practice, and the research process incorporated repeated iteration and juxtaposing between theory and data. The final categories emerged through iterative tabulation of the evidence for each construct (Eisenhardt, 1989). Fifth, towards the end of the analysis process, the data from the different observations were systematically compared in order to evaluate the regularities and differences that occurred. Finally, theoretical rather than statistical generalization was applied with regards to external validity: as Ritchie & Lewis (2003) note, generalizations should be seen as working propositions, or 'extrapolations', on the applicability of the findings under similar but not identical conditions, rather than generalizing across a population.

Findings

As discussed, sharing knowing in interpersonal relationships is seen in this paper as a process of thinking-in-interaction across the cognitive boundaries of the two (or more) communities of knowing in which the interaction partners are embedded. The daily work of the multinational operation involves numerous examples of such boundary-

crossing thinking-in-interaction, as illustrated below in an example of a new-product-launch process.

“A new product launch, for example, requires an awful lot of preparatory work. We have a multifunctional team and we prepare plans together with the countries... You discuss with the people who know most about a certain issue... It is continuous communication; you continuously seek the right information and the right direction with the countries and with the different functions.” [Finnish manager working in a brand strategy development role at the European Headquarters]

Although the focal organization is known for its overall corporate culture of sharing, the data indicated clearly that the differentiation and specialization of units typical of large multinational organizations nevertheless led to the formation of various cognitive boundaries inside the firm. As discussed, boundary crossing in this context typically includes overcoming not only geographical distance, but also and at the same time different combinations of cultural (i.e. between managers coming from different cultural backgrounds including both national and organizational cultures), linguistic (i.e. between managers with different mother tongues and professional discourses) and functional (i.e. across different functions) boundaries. These disconnections represent cognitive boundaries between the interaction partners, the existence of which is well illustrated in the following example in which a manager reflects on his earlier experience in a different unit of the company.

“It’s almost like two completely different companies, who do completely different jobs even though they are all the same company” [Expatriate manager on assignment in the Nordic organization, comparing the daily work of his home and host units]

Furthermore, it became clear in the data that in their daily interaction managers by nature enact their respective frames of knowing, as illustrated in the following quotation from the same manager who described the new-product-launch process.

“There are situations all the time when interests are different and people don’t speak the same language ... the countries want the plans to suit their individual needs..., marketing wants to maximize their investment, sales wants the most competitive price, logistics wants to deliver big streamlined parcels, accounting and finance want to

maximize prices and minimize costs – there is a fundamental kind of conflict ... the more we speak the same language and understand each other, the more optimal the result becomes.” [Finnish manager working in a brand strategy development role at the European headquarters]

In the 63 instances of sharing knowing analyzed in this study, the managers used multiple intentional and non-intentional, even unconscious, means of overcoming these cognitive boundaries when involved in interpersonal interaction. Six different means for overcoming incommensurability (i.e. a lack of a shared cognitive ground) were detected in the data. These included building on existing shared cognitive ground in other areas, building new shared cognitive ground, using dialogue for perspective taking and making, using mediators, using boundary objects, and using personal trust to transcend incommensurability on the interpersonal level.²¹ Table 2 provides an overview of the categories and their frequencies within the data set. It is worth noting that the number of occurrences reported in Table 1 (n=79) is higher than the number of instances of sharing knowing examined (n=63). This is because the managers sometimes used more than one way of overcoming boundaries during one instance, such as building on existing shared cognitive ground and at the same time seeking to build new shared cognitive ground, or using mediators and boundary objects at the same time. Building on existing shared cognitive ground and using mediators were the most commonly used means.

Means of Overcoming Cognitive Boundaries	Occurrence	Percentage
Using existing shared cognitive ground	17	22%
Creating new cognitive ground	12	15%
Perspective taking and making	10	13%
Using mediators	18	23%
Using boundary objects	9	11%
Using personal trust to transcend incommensurability	13	16%

Table 2. Means of Overcoming Cognitive Boundaries as They Occurred in the Data.

²¹ While there may be several additional organisational-level strategies for overcoming boundaries between communities, such as reported by Brown & Duguid (1998), Orlikowski (2002) and Wenger (1998), this investigation focuses on interpersonal means of overcoming incommensurability.

The different means of overcoming cognitive boundaries in interpersonal interaction are now discussed in more detail. Table 3 below provides a summary of the different means used by the managers, and further empirical examples are presented thereafter.

Means of Overcoming Cognitive Boundaries	Description	Examples
Using existing shared cognitive ground	Using some overlapping or complementary basis of knowing to bridge cognitive boundaries in other areas	Using shared cultural ground to overcome functional incommensurability; using overlapping functional knowing to overcome cognitive boundaries related to different business cultures
Creating new cognitive ground	Creating some new shared experience upon which to build to overcome incommensurability	Seeing the reality of the other through extended face-to-face meetings or visits; joint project work; building informal connections in joint training, going out together, etc.
Perspective taking and making	Framing of what one knows in a way that can be understood and appreciated by the other (Boland & Tenkasi, 1995)	Working out disagreements in dialogue; using analogies, stories and narratives to illustrate one's perspective
Using mediators	Relying on the translating ability of colleagues who can frame the interests of one community from another community's perspective	Using colleagues who belong to two communities to mediate between them; using expatriates and repatriates to mediate between their home and host units
Using boundary objects	Drawing on physical objects, technologies or business processes to bridge cognitive boundaries (Brown & Duguid, 1998; Wenger, 1998)	Using documents, computer programs and business processes to facilitate effective interaction
Using personal trust to transcend incommensurability	Drawing on the personal relationship between interaction partners or a personal reputation to transcend incommensurability	Relying on 'what the other is saying' based on personal trust or reputation

Table 3. Summary of the Different Means of Overcoming Cognitive Boundaries in Interpersonal Interaction.

Building on existing shared cognitive ground. Building on existing shared cognitive ground refers to using some overlapping or complementary frames of knowing that the interaction partners have in common in order to bridge cognitive boundaries in other areas. For example, if there is considerable incommensurability between functional knowing such as there may be between engineers and marketers, for example, the interaction partners may build upon a shared cultural base, some shared experience or

any other similarity. Using common ground in one area helps in bridging incommensurability in other areas both by building personal rapport, but also because building on overlapping experience helps the listener to intuitively sense what the speaker is trying to express, as suggested by Nonaka & Takeuchi (1995). The following quotation from a marketing manager working at the European headquarters using his previous experience in a country operation to overcome cognitive boundaries between the differing frames of knowing between the brand and to-the-market operations illustrates this well.

“One thing which has made it easier for me to work with the country operations is that [because of my previous country experience] I understand how the country operations function. People at the European Headquarters usually come from a pure marketing role. They are not close to the operational side of the business, and are struggling to provide the countries with what they need. Instead of providing a lot of strategic guidance and principles, I could bring it down one level to make it a bit more operational... I think that gave me an advantage, we had it easier to relate to each other than some of the other guys had. They kind of stayed in their bucket and there was no bridging in between [the strategic and operational] knowledge.” [Marketing manager working at the European Headquarters]

Building new shared cognitive ground. Building new shared cognitive ground refers to creating some shared experience upon which to build in order to overcome incommensurability. Two primary means of building this new shared ground were observed in the data. First, seeing the reality of the other through extended face-to-face interaction or visits is a powerful way of overcoming incommensurability. This importance of getting a feel of the reality of the other is well illustrated in the following example of a troubled relationship turning into a sharing one.

“We have centralized all ... [internal] business services into a mega service centre for Europe ... in the beginning there was a lot of trouble with this, people from the countries were totally unforgiving and had the attitude that these people ... were always a bunch of incompetents ... When these service people actually started to come to Nordic with regularity and actually met with the function heads and the country managers... suddenly everything was very different” [Nordic manager referring to a problematic relationship between the Nordic operation and a centralized service centre]

In addition to increasing the shared understanding of the realities of the other, another way of building new shared cognitive ground is to create some novel mutual experience that increases the common ground. This shared experience may vary from intensive shared project work to joint training courses or even spending an informal evening together. This is well illustrated in the following quotation reflecting the power of joint work experience.

“When you have gone through a shared experience ... it just bonds you more ... the person who I worked with back then ... I know what his realities are like and that helps me connect with him quicker... this is crucial in my current role... there are two important things in this, first is the people knowing that they know you as a person, and then there is the other thing that they know that you know what they are doing” [Nordic manager in a liaison role reflecting on a shared project work experience]

Perspective making and taking. Perspective making and taking refers to Boland & Tenkasi’s (1995) concept of framing what one knows in a way that it can be understood and appreciated by the other. Two main strategies for this framing came out in the data. These included a ‘cards on the table’ approach, where differences were discussed and brought to light in dialogue; and the use of analogies, stories and narratives for illustrative purposes that facilitate the making of one’s thought world more visible and thus more accessible to the other. The following description of the problem-solving mechanisms of the Nordic management team under a new CEO gives an illustrative example of the use of dialogue for overcoming incommensurability.

“Our previous CEO used to delegate projects to different departments, and then they came and made a presentation of the plans and asked for input ... Now we put all issues on the table at the department-head meeting and it may be really difficult and there might be a really negative atmosphere, but in the end we always manage to deal with the issues. It’s an interesting dynamic - it is so easy to work with the other department heads now.” [A Nordic department head reflecting on her management team experiences]

Using a mediator. Using a mediator refers to relying on the translating ability of a colleague who can frame the interests of one community from another community’s perspective (Brown & Duguid, 1998; Wenger, 1998). These brokers are typically

individuals who are members of two communities at the same time, being able to identify with both frames of knowing (Wenger, 1998). In the data, expatriate assignments involving the sharing of long-term mutual work experience enabled the building up of 'multimembership' (Wenger, 1998) more effectively than any other type of involvement (Mäkelä, forthcoming). This mediator role is well illustrated in these quotations from two managers reflecting on a conflict between a key-account manager in Finland and a brand team at the regional headquarters in the course of an attempt to develop a business plan for the particular brand in the key-account manager's customer base.

"I had this major issue with the brand team that just went all ugly and resulted in a lot of bad feelings. Not knowing what to do I gave up and asked X to sort it out, she knows how to talk to them." [A Finnish manager who had an issue with another manager at the regional headquarters]

X – the mediator:

"He had this problem with the brand team... but I saw right away that it was such a tiny little thing ... just a communication error on the way ... They didn't understand each other because they didn't speak the same language...I can say things how they want to hear them." [Finnish manager who had previously worked at the regional headquarters for an extended period of time]

Using boundary objects. Using boundary objects refers to drawing upon physical objects such as forms or contracts, technologies such as computer programs, and business processes in order to bridge cognitive boundaries (Brown & Duguid, 1998; Wenger, 1998). Although these boundary objects play a significant role in facilitating interaction between communities, as discussed in detail by Brown & Duguid (1998), Carlile (2002) and Wenger (1998), they seemed less important in interpersonal interaction. On the interpersonal level, the different boundary objects, such as action plans, joint business plans and business processes, facilitated effective interaction up to a certain point, but then it was personal contact that was credited to enabling the sharing of knowing at a deeper level. This difference is illustrated in the following quotation from a manager comparing the value of boundary processes and personal contact in boundary crossing after his arrival at the Nordic organization from another part of the company.

“There are some formal processes we have every month, we have ‘action plan initiative review’ and ‘country road shows’ ... When I arrived, it took me between two and six months of ... this type of relatively formal contact to start developing some personal relationship with them. Quite often, funnily enough, those relationships are formed ... [when] you go out and chat in a more informal setting ... I think it’s significant - once there’s a strong [personal contact] informal communication happens ... you can just give someone a call or drop them a line and say ‘not sure if you are aware of this’. You have much more complete communication.” [Expatriate manager reflecting on his arrival at the Nordic organisation]

Using personal trust to transcend incommensurability. Using personal trust to transcend incommensurability refers to drawing upon a personal relationship between interaction partners or a personal reputation for getting around cognitive boundaries. In other words, relational proximity is used to compensate for the lack of cognitive proximity (Amin & Cohendet, 2004) when interaction partners rely on ‘what the other is saying’. Incommensurability becomes less relevant when there is personal trust in the knowing of the other, built up by mutual history or personal reputation. The compensatory role of trust is illustrated in the following quotation from a Nordic marketing director referring to his relationship with the different country operations.

“If someone really genuinely believes in something and kind of puts their personal commitment into it, even if that means taking a sort of a jump, I’m always open for that if I trust the person.” [Nordic marketing director referring to his relationship with the different country operations]

Having identified these six means of overcoming cognitive boundaries, I then examined whether the different means used to transcend those boundaries were depending on whether the boundary was cultural, linguistic or functional. I did this by cross-tabulating each of the types of boundaries with each of the means used for overcoming them, to see whether there were any statistically significant differences between the different means (Pearson Chi-Square, 2-sided asymptotic significance). This analysis indicated that while each of the means was used for all boundary types, perspective making and taking was particularly relevant for crossing cultural and linguistic boundaries; and building on existing shared cognitive ground and the use of mediators for functional

boundaries. However, it has to be remembered that cultural, linguistic and functional boundaries very often coincide in cross-border interaction, and therefore their separation may not be desirable or even possible. The co-existence of the different types of boundaries was evident in the data: they coincided in almost 40% of the observed interaction instances (n=25). The results of these cross-tabulations can be found in Table 4 below.

	Existing cognitive ground	New cognitive ground	Perspective taking and making	Using a mediator	Using boundary objects	Using personal trust
Cultural boundary	.131	.131	.001***	.314	.288	.054
Linguistic boundary	.188	.067	.008**	.795	.179	.158
Functional boundary	.009**	.173	.060	.0018*	.445	.826

Pearson Chi-Square, 2-sided asymptotic significance.

* p<.05, ** p<0.01, *** p<0.001

Table 4. Cross-tabulations between types of cognitive boundaries and means of transcending them.

I then searched for any potential patterns between the different means for overcoming boundaries, i.e. whether there was any regularity in the way they co-existed. This was done by cross-tabulating each of the means of overcoming boundaries with the other means (Pearson Chi-Square, 2-sided asymptotic significance). This analysis indicates that using existing common ground and building new common ground were likely to be used in combination with perspective making and taking, and the use of mediators or boundary objects. On the other hand, perspective making and taking, and the use of mediators or boundary objects seemed to be alternative strategies, which were not typically used together. The results of these cross-tabulations can be found in Table 5 below.

	Existing cognitive ground	New cognitive ground	Perspective taking and making	Using a mediator	Using boundary objects
New cognitive ground	.106				
Perspective taking and making	.026*	.355			
Using a mediator	.002**	.015*	.115		
Using boundary objects	.049*	.003**	.684	.210	
Using personal trust	.080	.050*	.063	.010**	.098

Pearson Chi-Square, 2-sided asymptotic significance.

* p<.05, ** p<0.01, *** p<0.001

Table 5. Cross-tabulations between the different means of transcending cognitive boundaries.

Discussion and Conclusions

As argued earlier, a significant part of knowledge sharing within multinational operations occurs within interpersonal interaction between managers during their day-to-day work. In the above, the multinational organization was conceptualized as not only a differentiated network (Nohria & Ghoshal, 1997), but also as a distributed network characterized by differentiated communities of knowing, in which interpersonal knowledge exchanges were examined as instances of sharing knowing rather than transferring knowledge. In this last section, some theoretical implications of using the perspective of sharing knowing, and the limitations of the approach, are discussed. Finally, some managerial implications are proposed.

As discussed earlier, using the lens of sharing knowing shifts the focus of investigation from the properties of knowledge and barriers of transmission to what people do in interaction (Orlikowski, 2002). Furthermore, if knowing is viewed as thinking-in-action rather than as applying a priori knowledge, and sharing knowing as thinking-in-interaction rather than transferring a piece of knowledge, it raises some interesting questions concerning knowledge exchange within multinational organizations. First,

there is the question of knowing versus knowledge, i.e. where the boundary between knowledge and knowing lies. In this, I refer to Cook & Brown's (1999) work on bridging the two epistemologies. For them, knowledge (both explicit and tacit, and individual and collective) is seen as a tool for knowing. Knowing, in turn, is something we do. Furthermore, what is important, according to Cook & Brown (1999), is not the difference between knowledge and knowing, but a dynamic interplay between them.

Secondly, there is the question of sharing versus creation. If viewed as thinking-in-interaction, sharing knowing in interpersonal interaction may also imply the generation of new knowing and knowledge rather than just the mobilization of existing ones. Indeed, if sharing knowing is seen as thinking-in-interaction, when does the sharing end and the creation start? As interpersonal interaction is dynamic by nature, knowing is typically not only shared but also generated in interdependent communication through discussion and feedback (Amin & Cohendet, 2004; Nohria & Eccles, 1992). Although the borderline between sharing knowing and creating new knowing and knowledge is not clear cut, I see them as conceptually different, in such a way that the sharing of existing knowing is a necessary precursor for creating new knowing and knowledge. As McDermott (1999) posits, new knowledge is typically created within the boundaries of old knowledge. Therefore, one could hypothesize that interaction across the multiple boundaries within the multinational operation, where different bodies of knowledge and different frames of knowing come into contact, may be a particularly fruitful context in which new knowing is created (Leonard & Sensiper, 1998).

Thirdly, using the lens of sharing knowing may lead us to rethink how best practices are conceptualized. The term 'best practice' itself implies the notion of practice (Orlikowski, 2002), in other words knowing-in-action. As practices are deeply embedded in their respective communities of knowing, rather than transferring practices we should perhaps talk about learning from the practices of others and then using that learning to create new improved situational practices. Therefore, on the interpersonal level at least, knowledge exchange may not be about transfer but rather of sharing what-one-knows, i.e. sharing one's thinking and knowing. Sharing implies that one does not move one's knowing anywhere, it stays within the sharer but others can also benefit

from it. This sharing requires enough common ground for the other to appreciate what one is trying to express (Nonaka & Takeuchi, 1995), thereby bringing research attention to relational and cognitive proximity (Amin & Cohendet, 2004), and boundary crossing.

While the notion of sharing knowing can bring us new insights into the flow of knowledge within multinational organizations, it should be considered not as competing against the knowledge transfer argument, but rather as complementary to it. It, like any other approach, has its limitations. First, there is a risk of using different semantics for framing what is essentially the same thing, i.e. using a different label for what has thus far come under the research umbrella of knowledge transfer. While I agree that these two concepts are interlinked and their boundaries are fuzzy, I believe that they are conceptually separate, and that the complementary perspective of sharing knowing has the potential to provide additional insight to knowledge issues within multinational organizations. This is an area that requires further theoretical and empirical work. Secondly, work on sharing knowing is at an emerging and explorative stage, and this analysis has only been able to scratch the surface of this complex phenomenon. There are many issues that I have not been able to cover in this paper. For example, we do not know enough about the actual process of sharing knowing. I have discussed one aspect of this process, which is the crossing of cognitive boundaries, but have not touched upon how the actual process of sharing knowing unfolds. This would require a separate study incorporating observation of real-time situations of sharing knowing, and was not possible within the research design employed, which was using managers' perceptive accounts of instances of sharing knowing, obtained through interviews, as the unit of analysis. Furthermore, this paper does not discuss the effectiveness of the process, or whether some of the means are more effective in overcoming cognitive boundaries than others. More research is needed in these areas. Another obvious limitation of this study is that all the interviewed managers were embedded in one focal organization. While this was a conscious choice that enabled multilevel examination, it may have led to contextual bias. Finally, concrete and measurable propositions need to be developed around the concept of sharing knowing, and these concepts need to be tested empirically in different contexts, using both qualitative and quantitative methods.

There are some major managerial implications embedded in the sharing-knowing perspective. First, it highlights the fundamental importance of interpersonal interaction for the effective flow of knowledge within multinational organizations, a matter that has perhaps been given less focus in corporate practice than more structured means of knowledge exchange such as Intranet systems or search-and-reapply tools. Secondly, it recognizes that interpersonal interaction across the boundaries of the different communities of knowing may be difficult. The functional boundaries between the different units and other organizational structures within the multinational operation are combined with cultural and linguistic ones which makes the multinational context particularly challenging. This study suggests six concrete means of overcoming these cognitive obstacles. While these means were identified from the interview accounts given by the managers, the interviewees often did not use them consciously. More conscious awareness of both the existence of cognitive boundaries and of the possible means of overcoming them will have a major influence on the effectiveness of the interpersonal sharing of knowing.

In conclusion, this paper has introduced a novel perspective for studying knowledge exchange within multinational organizations: while the knowing perspective is relatively well established in other areas of organization theory, its application to the research concerning knowledge flows within multinational organizations is relatively new. As discussed, the literature on knowledge transfer has advanced our understanding to a great extent, and this will continue in the future. Nevertheless, the notion of sharing knowing might have significant complementary potential in contributing to our understanding of knowledge mobilization within the multinational operation, particularly on the interpersonal level.

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ESSAY 4

**INTERPERSONAL KNOWLEDGE SHARING WITHIN MULTINATIONALS:
HOMOPHILY AS A DRIVER FOR CLUSTERING**

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INTERPERSONAL KNOWLEDGE SHARING WITHIN MULTINATIONALS: HOMOPHILY AS A DRIVER FOR CLUSTERING

Abstract

Previous research suggests that knowledge is not always shared evenly throughout the multinational corporation. To explain this phenomenon, we propose that one driver for such uneven knowledge sharing is homophily, i.e. the tendency to interact with similar others, and its aggregate clustering effect. We focus on the similarity of the national-cultural background, shared language, and similarity of organizational status as factors generating homophily. We suggest that similarity in these areas lead to a higher tendency for interaction, increasing the sharing of business knowledge, and driving an aggregate clustering effect. Based on a synthesis of the literature and a multiple case study of three multinationals, we argue that knowledge flows better within clusters driven by homophily than between them.

1. Introduction

Contemporary scholars frequently conceptualize the multinational corporation (MNC) as a differentiated network consisting of specialized subsidiary units with various tasks, roles, and responsibilities (Bartlett & Ghoshal, 1989; Nohria & Ghoshal, 1997). In such a geographically scattered network, the ability to effectively share knowledge internally is often seen as fundamental for maintaining competitive advantage (Doz et al., 2001; Kogut & Zander, 1993). Consequently, the difficulty of transferring knowledge within the MNC across different locations and cultures has recently attracted considerable scholarly attention (e.g., Gupta & Govindarajan, 2000; Szulanski, 2000; Westney 2001; Zander & Kogut, 1995). Previous research has particularly focused on factors that facilitate or impede knowledge flows between subsidiaries, such as the properties of the sender and the receiver, the relationship between them, and the properties of the knowledge being sent (Argote et al., 2003).

Informal and often uneven patterns of knowledge sharing within MNCs have also been observed recently. For example, Birkinshaw & Arvidsson (2004) found that subsidiaries have a tendency to communicate more intensively with similar others. Furthermore, Marschan-Piekkari et al. (1999) suggest that individuals and entire subsidiaries are inclined to huddle together and collaborate on a number of issues due to language

similarity. Language differences and cultural considerations may explain why some members of the organization become isolated from important knowledge exchanges. Taken together, these findings suggest that knowledge is not shared evenly or indiscriminately within the MNC, but it rather appears to flow better in some parts of the organization than in others. Thus, when examining knowledge sharing, one should look not only at how knowledge is being exchanged between the sender and the receiver, but also which organizational members one connects and interacts with. This is a fundamental question, as the sharing of knowledge necessarily requires both a connection and some form of interaction.

Therefore, it seems appropriate to examine in greater depth how connectivity, i.e. the question of who interacts with whom, influences intra-company knowledge sharing, an issue which has received relatively little attention in the MNC literature thus far. This paper contributes to this research gap, and is particularly interested in informal connecting points between individual MNC managers. One factor influencing such connection is interpersonal similarity. In fact, the findings of Arvidsson (1999), Birkinshaw & Arvidsson (2004) and Marschan-Piekkari et al. (1999) suggest that the tendency to interact with similar others, referred to as homophily in sociology (McPherson et al. 2001, p. 435) may indeed be one driver behind the uneven patterns of intra-MNC knowledge sharing observed in these studies. Therefore, the specific research question under investigation is: "*How does homophily influence knowledge sharing within the MNC?*" While our starting point is homophily between individual managers, we suggest that interpersonal homophily may also have implications for knowledge sharing on the organizational level by producing an aggregate clustering effect.

In the remainder of the paper, we first discuss interpersonal interaction within the MNC. We then describe the methodology, a multiple case study of three MNCs. Following on from here, we develop the theme of homophily and its aggregate effect of clustering through an interplay between existing theory and insights emerging from our data. Finally, in the conclusions section, we discuss the implications of our findings for internal knowledge sharing within the MNC.

2. Interpersonal interaction within the MNC

MNCs are differentiated and geographically dispersed social entities where knowledge is scattered across organizational units and routines (Kogut & Zander, 1993).²² This makes them particularly challenging environments for internal knowledge sharing. One important conduit for internal knowledge sharing within the MNC is interpersonal interaction between individual managers in the course of the everyday work of the MNC. Already Minzberg (1973) identified that managers do not work in isolation. On the contrary, interpersonal knowledge sharing, defined as formal and informal business-related knowledge exchanges in ongoing interaction between MNC managers (Barner-Rasmussen, 2003) is a primary means through which inter-unit knowledge exchange takes place (Foss & Pedersen, 2004; Ghoshal et al., 1994). For example, Hansen (1999) emphasizes the importance of interpersonal relationships for information and knowledge flows between different subunits. Furthermore, Kostova & Roth (2003) suggest that individual MNC managers in boundary-spanning roles can play a key role in the formation of subunit linkages and thus in the flow of knowledge. Brass et al. (2004) support their view by asserting that inter-unit ties are often a function of interpersonal ties. Finally, Borgatti & Cross (2003) identified that interpersonal interaction is the principal method through which individuals seek knowledge.²³

Interpersonal knowledge sharing takes place in meetings, via e-mails and telephone calls, in projects and informal encounters; and it can be planned or unplanned, even unintentional. Examples of business-related knowledge that is continuously shared

²² Knowledge-related issues have attracted considerable interest in a number of research fields recently, and there is some disagreement among scholars on both the definition of knowledge as well as on what it constitutes (see e.g., Amin & Cohendet, 2004; Tsoukas & Vladimirou, 2001). Tsoukas & Vladimirou's (2001, p. 979) definition of knowledge as "the individual ability to draw distinctions within a collective domain of action, based on an appreciation of context or theory, or both" is particularly relevant for this paper. When applied to the MNC context, their definition emphasizes the role of individual managers in the creation and sharing of both explicit and tacit knowledge. It also recognizes that knowledge is always created within particular contexts.

²³ Although the current MNC literature focuses on the unit level, the role of individuals in exchanging knowledge has been specifically recognized in social network analysis (see e.g., Kildruff & Tsai, 2003) and social capital theory (see e.g., Adler & Kwon, 2002). For example, Nahapiet & Ghoshal (1998) and Tsai & Ghoshal (1998) argue that the level of social capital, i.e. assets embedded in social networks, facilitates the sharing and creation of knowledge within organizations, leading to competitive advantage. Also, extensive research on inter-organizational networks has also recognized the role of interpersonal relationships in knowledge sharing (see e.g., Uzzi, 2003; Yli-Renko et al., 2002).

between MNC managers include functional knowledge such as insights into how to develop a good marketing plan for a product launch, market-related knowledge regarding how customers in a certain country think and behave, and process-related knowledge such as how various processes from logistics to M&A are best executed.

While a lot of interpersonal knowledge sharing occurs within formal structures, it is the very structures that often contribute to the challenges of less than perfect flow of knowledge within organizations (Brown & Duguid, 2000). Examples of such challenges are functional silos or different geographical areas working on similar issues without awareness of each other - both frequently noted organizational problems. Indeed, Burt (1992, 1997) found that increased specialization within organizations results in disconnections, which he calls 'structural holes', between units. Typically, as Burt (1997) argues, different pools of knowledge circulate on the different sides of geographical, cultural and organizational boundaries, and they do not integrate due to disconnection. Interpersonal connections between managers working in different MNC units can provide valuable avenues for the effective flow of knowledge across these structural holes (Kostova & Roth, 2003). As discussed, one factor influencing such connections is interpersonal similarity. Since this insight evolved during the research process, we will now turn to the research method. Thereafter, the theoretical framework developed through an iterative process between empirical data and existing theory is presented.

3. Research method

This study draws on three MNC research projects examining interpersonal interaction across geographical, cultural and linguistic boundaries within the firm. The three case companies are all world-leading MNCs in their respective fields. Company A is an engineering company headquartered in Finland with operations in more than 40 countries. Currently, its personnel comprises of 27,000 employees worldwide. Company B is a globally leading MNC within the fast-moving consumer goods industry, with 98,000 employees around the world. Its brands include everyday household items,

personal hygiene & cosmetics products, and food & beverages. Its headquarters are located in the United States, with operations in 80 countries and sales in 140 countries. Company C is one of the world's leading telecommunications MNCs with headquarters in Finland. The company employs over 58,000 employees globally, and has sales in over 130 countries. The rationale of choosing these case MNCs is that they could all be characterized as differentiated networks (Nohria & Ghoshal, 1997), and have ongoing inter-unit and inter-personal interaction across all six continents. Table 1 gives a brief summary of key background characteristics.

	<i>Company A</i>	<i>Company B</i>	<i>Company C</i>
Industry	Engineering	Fast-moving consumer goods	Telecommunications
Headquarters location	Finland	US	Finland
Global dispersion	Operations in 40 countries	Operations in 80 countries, sales in 140 countries	Sales in over 130 countries
Sales 2004/2005	3 billion EUR	51.4 billion USD	29.3 billion EUR
Employees	27,000	98,000	58,000

Table 1. Background characteristics of the three case companies.

The original research questions did not explicitly consider homophily but examined different aspects of cross-border interaction within MNCs. Project A was specifically concerned with language issues in communication between the Australian subsidiary, its sister units and corporate/divisional headquarters. Project B examined knowledge sharing in the interpersonal cross-border relationships of MNC managers within the Nordic area and between the Nordic and other foreign units. Project C looked at intercultural communication and cooperation issues within the MNC, focusing on the interactions of employees in the context of two product lines, where the key locations were in Finland, Japan, and the UK.

The initial insight of clustering based on language took place in the original study of Company A, which prompted a more focused analysis across the three case companies. First, a follow-up study with eight new interviews was carried out in Company A in order to verify the finding. Second, the theme of clustering was incorporated into the on-going data collection of Projects B and C. Third, part of the interview data on Project

C was re-analyzed from the new perspective of clustering. During the research process, it became clear that language-based clustering was one form of clustering driven by homophily which can be regarded as a generic phenomenon. Homophily driven clustering was then deemed the final focus of our empirical and theoretical inquiry. Figure 1 below illustrates the research process.

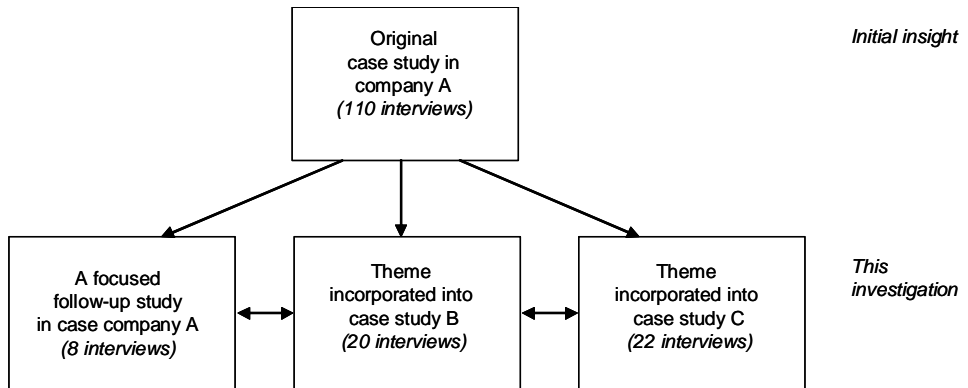


Figure 1. Research process

The case data consists of 50 personal interviews with top and middle managers representing several nationalities, from both headquarters and subsidiary units. The informants were chosen on the basis that they were all involved in internal cross-border interaction as a part of their normal work. The interview questions were open-ended and focused on real-life examples of cross-border interaction and perceived challenges in such interaction. The interviews were supplemented with other sources of data including observation, field notes and research journals, company documentation, intranet and internet data, and archival data. Furthermore, the authors have all spent extensive periods of time (2-5 years) in their case companies which enables an in-depth understanding of the research contexts. Table 2 provides detailed information on the research design.

	<i>Company A</i>	<i>Company B</i>	<i>Company C</i>
Research sites	Australia	Nordic unit including Sweden, Finland, Denmark and Norway	England, Finland, Japan
Data collection methods	Interviews, observation, field notes, company documents	Interviews, observation, participant observation, field notes, research journal, internal documents, intranet, public documents, news archives	Interviews, observation, participant observation, field notes, research journal, internal documents, intranet, public documents, news archives
Number of interviews	8	20	22
Functional background of interviewees	Top management, Sales, R&D, Maintenance	Sales, Marketing, Human resources	Marketing, Operations, R&D, Sales
Nationality of interviewees	Australian, British, Finnish	Danish, Finnish, South African, Swedish	British, Dutch, Finnish, Japanese
Interview language	English, Finnish	English, Finnish, Swedish	English, Finnish

Table 2. Key aspects of the research design

The process of data collection and analysis was carried out first for each case independently and thereafter across the three cases to detect cross-case similarities and differences. The reliability and validity of the research process was attended to as follows. First, the interviews were recorded and transcribed, and a case report was produced for each case, creating a retrievable database that maintains a chain of evidence (Yin, 2003). Second, the interview transcripts were studied carefully and potential instances of interpersonal homophily and their implications were analyzed with respect to existing theory and possible alternative explanations, such as trust and power (Eisenhardt, 1989; Pauwels & Matthyssens, 2004). Third, multiple sources of evidence, including interviews, observation, field notes and research journals, company documentation, intranet and internet data, and news archives, were used (Yin, 2003). Fourth, the research process included a systematic comparison of patterns found in the empirical data and an emerging theoretical explanation, with replication logic used to ensure that the findings were consistent across all of the cases (Pauwels & Matthyssens, 2004; Yin, 2003). Using an iterative process, we coded the data, classified them into the emerging themes and categories such as which homophily factors seemed particularly relevant for the MNC context, juxtaposed them against existing theory, and compared our findings across the three cases.

Finally, in terms of external validity, this study aims towards theoretical, rather than statistical, generalization based on the in-depth qualitative evidence. This inductive analysis of the case data resulted in a theoretical framework describing interpersonal homophily as driver of informal clustering behaviour within the MNC, with several implications for intra-company knowledge sharing.

4. Homophily as a driver of clustering within the MNC

In this section, we develop a theoretical framework of interpersonal homophily and its aggregate effect of clustering within the MNC. The framework is presented through an interplay between theory and data: the underlying theoretical concepts are explained first and then followed by an introduction of our empirical insights

4.1. Homophily on the interpersonal level

Homophily can be defined as a “tendency to associate with people ‘like’ yourself” (Watts, 1999, p. 13). Its central idea, as argued by McPherson et al. (2001), is that interpersonal similarity breeds connection. In other words, a connection is more likely to occur between similar than between dissimilar people, whether based on geographical proximity, or on cultural (such as race, nationality and religion), genetic (such as gender, age and kinship) or behavioural (such as education, occupation, social class, position, abilities, attitudes or values) resemblance (McPherson et al., 2001).

Previous research in the domain of sociology has found extensive support for homophily in social networks. Empirically, similarity in terms of social class, status, gender, race and occupation, for example, have all been identified as bases of homophily (e.g., Brass, 1995; Ibarra 1993; McPherson & Smith-Lovin, 1987). Moreover, Monge & Contractor (2003) provide two main explanations for the generic tendency of homophilic behaviour. On the one hand, what they call ‘the similarity-attraction hypothesis’ posits that homophily reduces psychological discomfort and

conflict arising from cognitive or emotional disparity, while on the other hand, ‘the theory of self-categorization’ suggests that individuals define their social identity through homophily-based self-categorization (Monge & Contractor, 2003). In other words, these two theories approach the same issue from slightly different angles. The first one argues that people are often more attracted to an individual who is similar to themselves in terms of some demographic or personal attribute(s); alternatively, the second theory focuses on self-categorization through a process of social comparison (Williams & O’Reilly, 1998).

In our data, we found evidence of several similarity factors driving connection between managers within our case companies, such as gender, age, nationality and language. Moreover, it was not only similarity based on personal or social characteristics that were highlighted in our empirical data, but also the importance of factors related to organizational status, such as similarity of function or position, tenure in the company, and the similarity of the local environment shared between two managers. We focused our investigation on three forms of homophily which were observed across all three case companies and came out as particularly relevant in the MNC context. These include the similarity of the national-cultural background, shared language and similarity of organizational status. Table 3 provides an overview of the three forms of homophily with a description of each, together with examples of instances in which they were observed in the three case companies. Furthermore, the three forms of homophily are described in more detail below, complemented with illustrative examples from the three companies.

Similarity factor	Description	Examples	Observed in
National-cultural background	Shared beliefs, values, perceptions and practices driven by shared nationality. A shared national-cultural background can drive increased interaction, by creating a strong bond and common cognitive ground.	<ul style="list-style-type: none"> - Between members of the same nationality (e.g., Finns, Danish, English); - Between managers belonging to the same nationality cluster (e.g. the Anglo cluster) 	<p>A, B, C</p> <p>A, B, C</p>
Language	Shared language, either the same mother tongue or fluency in a common language. Shared language can drive increased interaction by facilitating easier communication, shared meanings and shared systems of signification.	<ul style="list-style-type: none"> - Between managers sharing the same mother tongue (e.g., native English speakers, between Swedes and Swedish-speaking Finns); - Between managers fluent in each others' language (e.g., between Swedes and Norwegians); - Between managers fluent in a shared language (e.g., expatriates mastering the languages of their host countries); - Between managers not speaking the official company/majority language as their mother tongue (e.g., managers whose first language is not English) 	<p>A, B, C</p> <p>A, B</p> <p>A, B, C</p> <p>A, C</p>
Organizational status	Shared organizational status such as the same function, equal tenure within the organization, the same level or position, and similarity of local environment. Similarity of organizational status can drive increased interaction by providing similar reference points and creating common ground.	<ul style="list-style-type: none"> - Between managers from the same function; - Between managers in the same hierarchical level; - Between managers coming from countries with a similar market size or position; - Between expatriates 	<p>B, C</p> <p>B</p> <p>A, B</p> <p>A, B, C</p>

Note: The letters denote the case companies in which specific forms of homophilic behaviour were observed. A missing letter indicates that we were unable to isolate relevant examples of homophilic behaviour, rather than the managers not exhibiting such behaviour in keeping with the homophily argument.

Table 3. Three similarity factors particularly relevant for the MNC context.

The similarity of national-cultural background. The similarity of national-cultural background refers to the shared beliefs, values, perceptions and practices within the interaction partners' respective countries (House et al., 2004). In our case data, the similarity of national-cultural background created a strong bond between people located in different units and countries, by facilitating common cognitive ground behind shared values, belief systems and codes of conduct (Nahapiet & Ghoshal, 1998; Nonaka &

Takeuchi, 1995). This form of homophily was observed in all three case companies, and similarity-attraction seemed to be the main explanatory factor for its occurrence (Monge & Contractor, 2003). The impact of a shared national-cultural background was the strongest between managers of the same nationality, as illustrated by the first example, but also very evident between culturally close nationalities (Hofstede, 1980; House et al., 2004), as the second quote illustrates.

“I was given a completely new task in Japan at the beginning of the year [after having been stationed in Japan for 18 months] and it was really difficult at first because I had never done it before and I wasn’t given any guidance... I didn’t know where to go, not until I called people in the UK.” [British, based in Japan, Company C]

“Somehow I just know more people in the UK business so quite often I’ll ask them a question. There’s always been quite a strong affiliation between South Africa and the UK... you quite often end up talking with the guys from the UK. And then I’ve got relatives in the UK so I sometimes pop into the office. When you add all of that up... I know that business and the people in the business better than the other Western European businesses.” [South-African, on assignment in Sweden, Company B]

Shared language. Similarly, a shared language emerged in the case data as another similarity factor particularly relevant to the MNC. Although language and nationality are interrelated, it is important to separate them analytically, as they do not always go hand-in-hand. Shared language can drive interaction by facilitating easier communication, shared meanings and shared systems of signification (Brannen, 2004; Marschan-Piekkari et al., 1999). Again, the homophilic impact of shared language was observed in all three case companies, and the main explanatory factor behind it seemed to be similarity-attraction (Monge & Contractor, 2003). One interviewee reflected on the idea of shared language producing powerful informal connections, as illustrated in the first quotation. The second excerpt, on the other hand, offers one manager’s explanation as to why certain nationalities communicate more with one another than with other nationalities, emphasizing the importance of the same mother tongue.

“INTERVIEWEE: Speaking Swedish as my mother tongue definitely helps me compared to someone who is a Finnish-speaking Finn when communicating to Sweden.

RESEARCHER: Why does it help you?

INTERVIEWEE: I think it is in many layers actually. One layer is that you are able to use forms of expression that people are comfortable with. You can say what people can relate to. One side of the language is knowing the words, but another side is how you play with the words in different types of situations and what you mean by them, and if you don't know the language well you will always miss a nuance ... I can connect both with the Finnish social environment and the Swedish one. Even though my dialect is different from the one spoken in Sweden - they don't see me as just one of them, they still see me as different - but I'm a Finn who somehow is easy to connect with.” [Finn, based in Sweden, Company B]

“It is often easier for someone to speak to a person who has the same mother tongue. For example, some of the Finns feel uneasy about speaking English, and may not call an English-speaking person.” [Dutch, based in England, Company C]

Similarity of organizational status. Finally, the similarity of organizational status came out as the third key factor driving interaction between MNC managers. As such, homophily based on the similarity of organizational status can occur in both domestic and multinational organizations. However, given our case data, we argue that the dispersed nature of the MNC amplifies its importance. Similarity of organizational status may include several different aspects, such as a shared function, equal tenure within the organization, the same level or position, and similarity of local environment, creating both joint reference points and a common cognitive ground (Nonaka & Takeuchi, 1995). Several instances of homophily based on the similarity of organizational status were observed in all three case companies, stemming from a combination of self-categorization, i.e., defining one's social identity through homophily-based self-categorization, and similarity-attraction (Monge & Contractor, 2003). The following empirical example provides an illustration of several aspects associated with organizational status, such as management level, newcomer status, and similarity of organizational rank, which breed informal interaction.

“I noticed a very interesting thing in my first meeting of country sales managers at the European headquarters. In the meeting, I established really good contact with the people who were on Level 4 in the company hierarchy, the same level as me. Those who were on Levels 5 and 6, they had their own club. They've been around and know each other from other meetings. Also, the newcomers [newly appointed country sales managers] like Holland, Belgium and me, we formed our own little group right away.

Another interesting thing was that I immediately established good contact with the Greek country sales manager, their market is about the same size as the Scandinavian market and we fight the same battle for HQ attention as we do not belong to the top five countries.” [Finn, based in Sweden, Company B]

This greater tendency for interaction influences knowledge sharing as McPherson et al. (2001, p. 415) state, “[h]omophily limits people’s social worlds in a way that has powerful implications for the information they receive, the attitudes they form, and the interactions they experience”. Carley (1991) suggests that relative similarity between individuals leads to interaction and influences the choice of interaction partners. Interaction, in turn, leads to shared knowledge, as knowledge sharing is a natural product of interaction. In the organizational context, Brass (1995) suggests that interpersonal homophily between managers drives linkages across intra- and inter-organizational boundaries. In other words, similarity can breed informal business-related connection between MNC managers over and above formal structures. In fact, a number of MNC studies have shown that interaction between two members of the organization increases knowledge sharing between them (e.g., Hansen, 1999; Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). For example, Tsai & Ghoshal (1998) argue that social relationships are channels for information and resource flows, and show that the frequency of interaction and the closeness of social-interaction ties between members of two organizational units have a significant positive effect on knowledge exchange between them.

Our empirical data indicates that knowledge sharing does indeed occur as an outcome of increased interaction, as suggested in the literature. Similarity drove knowledge sharing, for example, when two managers of the same nationality compared their work roles in different parts of the company in Company A; when newcomer brand managers gravitated towards each other in a brand-manager meeting and started sharing best practices in Company B; or when fellow expatriates discussed the differences in how a particular process is executed in their respective countries in Company C. Indeed, typical occasions in which similarity drives interaction and, consequently, knowledge sharing include internal business meetings and conferences, where participants tend to have informal but yet business-related conversations during breaks: people who are similar in some way have a greater tendency to interact with each other in business

situations. Invariably, they discuss their respective businesses, markets and roles, and consequently come to share experiences, insights and best practices – i.e., knowledge – and also establish relationships that can be used later. Furthermore, these knowledge exchanges may be both unplanned impromptu knowledge sharing as well as planned knowledge seeking. The following example illustrates these two situations well.

“RESEARCHER: Do any other people in the brand organization have a similar background to yours?”

INTERVIEWEE: Well, yes, Augustin in Spain has a very similar background to me, he’s also worked for the company for 15 years [and had a similar career path]. I don’t know him that well really, but we always chat in quarterly meetings and we’ve had dinner together.

--- LATER IN THE INTERVIEW: ---

INTERVIEWEE: I had some difficulties with our second biggest customer in Finland, they just didn’t seem to respond to our concept. Then I happened to learn in a business review meeting that our biggest customer in Spain has a very similar business concept to my customer. So, in the next quarterly meeting I went to Augustin and asked how he was doing and how things were going with that specific customer. Then we chatted, and when I got back home the next day I had all the information complete with digital pictures in my e-mail, to take to my customer.” [Finn, based in Finland, Company B]

To summarize, we argue that interpersonal similarity increases the tendency for interaction between MNC managers, and that this increased interaction leads to a higher tendency to share business knowledge. These relationships could be reduced to two propositions for further empirical testing, as follows:

Proposition 1: Interpersonal similarity increases the tendency for interaction between two MNC managers.

Proposition 2: The more two MNC managers interact, the higher the tendency that they will share knowledge with each other.

4.2. Homophily-driven clustering on the organizational level

In addition to the interpersonal level consequences, our case data suggests that interpersonal homophily may also have an aggregate effect on the organizational level.

When the effect of homophily on the interpersonal level is multiplied, i.e. when similar managers all have a tendency to interact with like others, it may produce an aggregate effect of informal clustering within the organization.

The term ‘clustering’ is defined here as the formation of sub-groupings within networks, following a definition commonly used in the social networks tradition (Watts, 1999).²⁴ In other words, similar people have a tendency to flock together, thus creating informal clusters. It is important to note, however, that these clusters are not necessarily identifiable subgroups with specific boundaries, but rather loose non-structures of people who interact with each other more because of similarity than they would otherwise. Furthermore, similarity-driven sub-groupings are in constant flux, their boundaries are fuzzy, and managers can belong to several clusters simultaneously.

Extensive multidisciplinary research on networks has established that clustering is a fundamental characteristic and a generic property of all complex networks ranging from social networks to language, neural and cellular networks, and many systems in physics and biology (Barabasi, 2002; Kildruff & Tsai, 2003; Watts, 1999). Therefore, it should be expected that the phenomenon of clustering may also feature within multinational organizations where complexity is a norm. Within the social networks tradition, Granovetter’s (1973) classical work on the strength of weak ties was among the first to recognize clustering in social systems. He argues that people tend to cluster into subgroups characterized by cohesive ties and overlapping knowledge. Applied to the MNC context, the clustering argument thus suggests that homophily has a tendency to create sub-groupings of similar managers.

²⁴ The terms ‘clusters’ and ‘clustering’ have been used in several other fields of research in addition to the social networks tradition. For example, the term ‘cultural clustering’ is widely used in cross-cultural comparative studies, particularly on the national level (e.g., Hofstede, 1980; House et al., 2004). In that context, clustering refers to the formation of subgroups between nations based on cultural similarity, and the focus is on the ‘sharedness’ of culturally based values and practices (House et al., 2004). Furthermore, the term ‘cluster’ is also a central concept in economic geography (Birkinshaw & Hood, 2000; Buckley & Ghauri, 2004; Forsman & Solitander, 2003). In this literature, however, clustering refers to spatial proximity, i.e. concentrations of competing and complementary firms that are located in relatively close geographical proximity (Birkinshaw & Hood, 2000; Porter, 1998), rather than the formation of subgroups as such. We would like to emphasise that, although this paper recognises other definitions of clusters and clustering, it is restricted to the definition used in social network theory.

Indeed, homophily has long been recognized as a driver for group formation in sociology (see Carley, 1991; Monge & Contractor, 2003, for reviews). As discussed, Carley (1991) suggests in her seminal work that group characteristics can be derived from individual characteristics. Furthermore, when members of a subgroup interact, increased knowledge sharing is a natural product of the interaction. The following quotations from Australian managers illustrate how clustering may have an aggregate effect by influencing knowledge sharing on the organizational level. Such clustering occurs when different nationality groups or even entire national subsidiaries show a tendency to interact with similar others.

“...we [in Australia] understand the Canadians, the Americans and the English better than any [other overseas subsidiary]... [The connections] are made easier by the fact that there is a common cultural background.” [Australian, based in Australia, Company A]

“It’s easier for the Auzzies to talk to the guys from America, Canada and England...to understand how they implement [best practices] successfully...than it is to talk to the guys from Germany and France... Although I think our business and the French business are not fundamentally different... it’s just that with the language difficulty between ourselves and France, it’s not quite so easy to pick up French best practices in Australia and apply them...” [Australian, based in Australia, Company A]

One consequence of the aggregate clustering effect is that knowledge flows better within these informal subgroups than between them. This may be both in terms of quantity (i.e., more knowledge), quality (i.e., more tacit and/or relevant knowledge, insider information etc.), and speed (i.e., providing a quicker access to knowledge). In the above example, membership in the Anglo cluster (House et al., 2004) significantly facilitated knowledge exchange between the Australians, Americans, English and the Canadians as a group. At the same time, cluster boundaries, although fuzzy, may create barriers between different national-cultural, language or organizational subgroups. In the previous example, the Germans and the French belonged to other nationality clusters (Germanic and Latin respectively), which functioned as an informal barrier to knowledge sharing.

The following examples provide additional empirical evidence. They show how homophily based on shared nationality creates powerful sub-groupings within the organization, and conversely how such clusters operate as significant barriers to knowledge sharing for those outside them.

“It is funny how we have our Finnish ‘mafia’ in the Nordic Leadership team. We have Liisa [a Finn] who is the Swedish sales manager, Jan [a Finn] who is the Norwegian sales manager, Harri [a Finn] who is the Finnish sales manager. We have Tommi [a Finn] who is the Nordic HR manager, and now I’ve joined, too. We rule the whole organization!” [Finnish manager in a Nordic liaison role, Company B]

“... if you had the key to unlock the Finnish door, you didn’t just get the information, you got the hidden bit of information at the back that was given only to special [Finnish] people.” [Australian, based in Finland, Company A]

“Expatriates are usually used as channels of communication, what I mean is that the British based in the UK will go to the British person they know in Japan, rather than their Japanese counterpart.” [British, based in England but previously worked in Japan, Company C]

To summarize, interpersonal homophily has an aggregate effect of clustering when a number of managers sharing the same characteristic all have a tendency to interact with similar others. Consequently, knowledge may flow better within these informal homophily-based clusters than between them. Therefore, the following propositions are put forward.

Proposition 3: Interpersonal homophily produces an aggregate effect of clustering within the MNC.

Proposition 4: Increased similarity-driven interaction within clusters results in knowledge flowing better within than between them.

Finally, Figure 2 summarizes the theoretical framework illustrating the effect of interpersonal homophily and its aggregate effect of clustering on knowledge sharing.

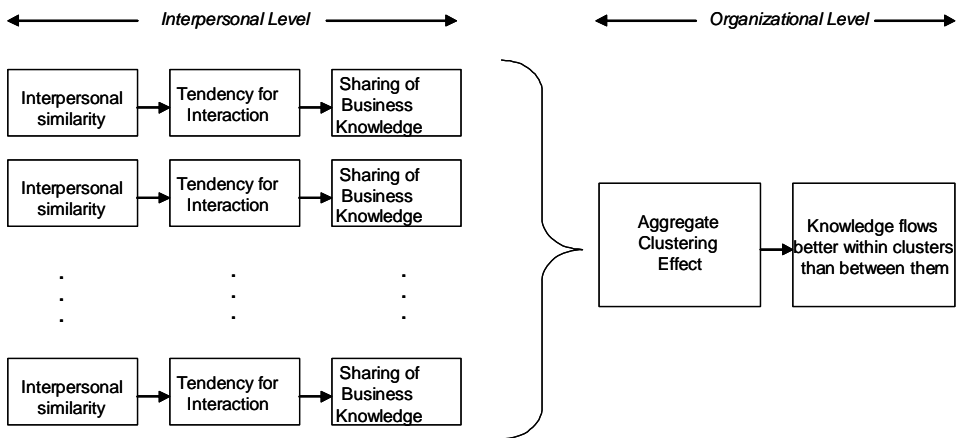


Figure 2. Theoretical framework of homophily-driven clustering.

5. Discussion and conclusions

This study contributes to our understanding of knowledge sharing within the MNC in several ways. First, we argued that interpersonal knowledge sharing is an important dimension of the internal flow of knowledge within the MNC. Second, the study highlighted the importance of informal connecting points within the MNC. More specifically, while knowledge sharing within the MNC is affected by a myriad of factors, interpersonal homophily and its aggregate clustering effect provide one explanation which helps us to understand the often uneven knowledge flows within these large and complex organizations. Finally, we suggested a theoretical framework illustrating the relationship between interpersonal homophily, its aggregate effect of clustering, and knowledge sharing, and put forward four propositions for further empirical testing.

It is important to notice that the effect of homophily-driven clustering can be both positive and negative for the flow of knowledge within the MNC. On the one hand, interpersonal homophily facilitates knowledge sharing within clusters: interpersonal similarity in the form of a shared national-cultural background, language or organizational status increases interaction and results in higher levels of knowledge

sharing. In this sense, interpersonal homophily can actually function as a bridge across geographical and functional boundaries, as was clearly demonstrated in the example concerning the meeting of country sales managers.

On the other hand, and perhaps more importantly, homophily-driven clustering can also function as a barrier to knowledge sharing between clusters. Nationality, language and organizational status can become powerful dividers of how knowledge flows within the organization. Examples of this included the 'old-boys network' among country sales managers and the Finnish insider group in the examples presented above.²⁵ In fact, Quibria (2003) recognizes the fact that social capital within subgroups often opens up opportunities for network members, but since the networks are usually based on ethnicity, religion, language or profession, they can also build entry barriers to those who are outsiders. The study by Goodall and Roberts (2003) provides additional support by identifying strong expatriate networks which were almost impermeable for local staff to enter.

We also recognize that there are some key limitations to this study. As the nature of this paper is explorative, the role of the inductive empirical work is to guide theoretical development rather than offer comprehensive empirical testing. We recognize that our empirical quotes are only indicative, and significantly more empirical work is needed to test our propositions. However, it is also important to note that this empirical data set was instrumental in the development of the theoretical insight. The fact that the phenomenon of homophily-driven clustering was not part of the original empirical research design, but emerged from the data during the research process makes the empirical findings particularly interesting. Furthermore, the fact that such homophily-driven behaviour could be identified in three separate MNCs, operating in completely different market sectors, gives further support to these initial findings.

To conclude, an awareness of homophily and its aggregate effect of clustering carries implications for the MNC not only on the theoretical level as discussed above, but also on the practical level. First, managers can and should build on homophily in one area to

overcome boundaries in another. For instance, in the example of the meeting of country sales managers, the Scandinavian manager was able to build on a joint organizational status as a newcomer to overcome geographical boundaries. Second, one should use homophily to build bridges to other parts of the organization: business meetings, conferences and the like provide good opportunities for this. One should look for colleagues with whom there is a natural connecting point, talk to them, share business insights and experiences, and keep in touch. This builds social capital that bridges structural holes within the organization (Adler & Kwon, 2002; Burt, 1992).

However, recognizing that homophily-based clustering can also function as a significant barrier for knowledge sharing between clusters, is perhaps even more important. In our case data, we identified two particularly effective means of transcending cluster boundaries – or indeed other organizational boundaries - and labelled these ‘multimembership’ (Wenger, 1998) and shared experience. Multimembership refers to situations in which certain individuals belong to, or are members of, two or more clusters simultaneously. It involves understanding two different clusters from the inside (Brown & Duguid 2000), and thus makes communication and knowledge sharing less ‘sticky’ (Szulanski, 2000). In the MNC context, one such mechanism is expatriate assignments. As Au and Fukuda (2002, pp. 286-287) postulate, “[e]xpatriates are multicultural brokers... They become culture brokers who can connect groups and resources that would otherwise be scattered.” Shared experience, in turn, refers to personal relationships built by having worked together. One way to achieve this is through the regular use of project groups and task forces that enable interaction across different groups. In our case data, shared experience provided channels through which knowledge was shared more effectively between clusters than otherwise would have been the case.

Finally, increasing connectivity within the MNC is the key to effective internal mobilization of knowledge. Moreover, an understanding and consideration of homophily, and its aggregate effect of clustering, can be important facilitating factors in this context. Evans (1992, p. 94) put it well: “A network does not require everyone to

²⁵ Interestingly, even though power considerations have typically been used to explain old-boys networks

know everyone else. For it to function effectively, it requires ‘loose ties’ – knowing someone who knows someone who knows someone.” It is vital for managers wishing to increase connectivity within organizations to appreciate how knowledge flows naturally and to utilize this insight to benefit the entire organization.

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APPENDICES

Appendix 1. The Research Process

PRELIMINARY LITERATURE REVIEW AND THEORETICAL FRAMEWORK	Autumn 2002 - Spring 2003
DEVELOPMENT OF THE CASE STUDY PROTOCOL	Spring – Autumn 2003
FIELDWORK IN FINLAND	Autumn 2003 - Spring 2004
PRELIMINARY ANALYSIS OF FINNISH DATA	Spring 2004
FIELDWORK IN SWEDEN	Spring – Summer 2004
QUALITATIVE DATA-ANALYSIS	Spring – Autumn 2004
ESSAY 4	Spring 2004 – Spring 2005
DEVELOPMENT OF THE QUANTITATIVE RESEARCH PROTOCOL AND QUESTIONNAIRE	Spring 2004 – Spring 2005
ESSAY 2	Summer - Autumn 2004
QUANTITATIVE FIELDWORK AND ANALYSIS	Spring – Summer 2005
ESSAY 3	Spring – Summer 2005
ESSAY 4	Spring – Summer 2005
WRITING-UP OF THE FINAL THESIS	Summer – Autumn 2005

Appendix 2. Case Study Protocol and Interview Questions

CASE COMPANY	Procter & Gamble Nordic (P&G Nordic) consisting of regional Headquarters in Sweden and to-the-market operations in Sweden, Finland, Denmark and Norway (in the order of the market size)
CASE MANAGERS	Access to case managers within the sales and marketing functions. Have to interact with colleagues outside their own country on a regular basis. 50 % managers with expatriate experience, 50% managers with domestic experience only. Case managers primarily from Finland and Sweden due to access, but seek to verify with the country managers from Denmark and Norway. Data saturation to guide number of case managers.
DATA COLLECTION	Collect embedded case data: Interviews with the case managers (see interview guide) Observation (target 5 days) Internal documents Annual reports Intranet Company Internet site News archives (available from the P&G Website)
FIELDWORK	Kick-off meeting set up for November 2003 Book interviews and field visits
DATA ANALYSIS	Replication logic - Follow Eisenhardt (1989), Miles & Huberman (1994), Yin (2003a) in coding and categorizing

INTERVIEW GUIDE

Interview Date and Time:

Place:

Name:

Job Title:

Organizational Level:

Function:

Years with the Company:

Description of Career Path:

International Assignments:

Interview Questions

I am interested in how you interact and communicate with your foreign colleagues, i.e. those who work within this company but outside [your country]. I'd love to hear practical examples whenever such come to your mind.

1. Tell me what are the typical ways and situations in which you communicate with your foreign colleagues?

Further questions asked to dig deeper in issues of interest, such as:

- Who do you talk to outside your own unit? Why? How? In what sort of situations?
- Can you give me examples of different situations?
- Is it difficult or easy? When is it easy / difficult? Why? What do you do if it is difficult?

2. When you need information or advice for a work-related problem, what do you do?

Further questions asked to dig deeper in issues of interest, such as:

- What different information sources do you use?
- Who do you talk to? In what sort of situations? Why that particular person?
- Does anyone contact you to ask information, advice or help? In what sort of situations? Why you?

If the interviewee is or has been on an international assignment:

3. Could you tell me about your assignment(s):

- What is/was your job there?
- Why did your company send you abroad?

4. What do you think you have learned or how have you benefited by having worked abroad on an international assignment?

Further questions asked to dig deeper in issues of interest, such as:

- During the assignment – after the assignment?
- Do you do anything differently than before?
- Has your opinion of the host organisation changed vs. what it was before your assignment?
- Has the organisation benefited in any way from your assignment?

5. Are you or have you been in contact with anyone a) you worked with or know from your home organisation (if currently on assignment), or b) anyone you worked with or know from the host organisation (if returned)?

Further questions asked to dig deeper in issues of interest, such as:

- With whom – in what kind of matters – in what kind of situations – how often?
- Have you used these contacts for any specific purpose(s)?
- Have you personally benefited from these contacts? If yes, how? If not, why not?
- Has anyone else benefited from these contacts? If yes, how? If not, why not?

ENCOURAGE TO GIVE PRACTICAL EXAMPLES WHENEVER POSSIBLE

Appendix 4. The Interview Questionnaire: Structured personal interviews

GENERAL DATA

Company:

Years in the company: _____ years _____ months

Birth year:

Sex:

INTERNATIONAL ASSIGNMENTS

In which country(ies) have you been on an international assignment with your current employer?

Country	Started (month/year)	Finished (month/year)
---------	----------------------	-----------------------

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

COLLEAGUES ABROAD

Think about all your colleagues who work within your company but outside your country. Think about all your colleagues who work within your company but outside your country. I would like you to indicate three colleagues with whom you have interacted during the last 12 months through each of the following means:

VIRTUAL CONTEXT:

E-MAIL OR TELEPHONE SOLELY (i.e. you have never met them in person)

First name (M/F)	Current location	Nationality
_____	_____	_____
_____	_____	_____
_____	_____	_____

FACE-TO-FACE CONTEXT:

MEETINGS AND POSSIBLY E-MAIL/TELEPHONE (i.e. met face-to-face at least once)

First name (M/F)	Current location/	Nationality
_____	_____	_____
_____	_____	_____
_____	_____	_____

SHORT-TERM PROJECT GROUP CONTEXT:

YOU HAVE WORKED TOGETHER ON A JOINT PROJECT OR OTHER TEMPORARY / SHORT-TERM ARRANGEMENT

First name (M/F)	Current location/	Nationality
_____	_____	_____
_____	_____	_____
_____	_____	_____

LONG-TERM TEAM CONTEXT:

YOU HAVE WORKED TOGETHER IN THE SAME WORK TEAM DURING AN EXPATRIATE ASSIGNMENT OR OTHER MORE PERMANENT / LONG-TERM ARRANGEMENT

First name (M/F)	Current location/	Nationality
_____	_____	_____
_____	_____	_____
_____	_____	_____

(Name of respondent: _____)

(Name of colleague: _____)

For each of the above mentioned colleagues, please answer the following questions:

1. How long have you known this colleague?

_____ years _____ months

2. Does this colleague work in the same function as you?

_____ Yes _____ No

3. What is the approximate seniority level of this colleague when compared to you?

Much more junior	More junior	Peer	More senior	Much more senior
1	2	3	4	5

4. How often do you interact with this colleague currently? (Circle closest alternative)

E-mail: daily weekly monthly 3-4 times a year once a year or less Never

Telephone: daily weekly monthly 3-4 times a year once a year or less Never

Face-to-face: daily weekly monthly 3-4 times a year once a year or less Never

5. In which language do you communicate personally with this colleague?

4. Our shared mother tongue
3. Your mother tongue
2. His/her mother tongue
1. A third language

For the following questions, please mark the most appropriate answer:

	Distant, like an arms-length delivery of the output			Somewhat close, like discussing and solving problems together			Very close, practically like being in the same workgroup
6. I have a close working relationship with this colleague.	1	2	3	4	5	6	7
	Strongly disagree						Strongly agree
7. I can rely on this colleague without any fear of him or her taking advantage of me, even if the opportunity rises.	1	2	3	4	5	6	7
8. I can trust this colleague always keeps the promises he or she makes.	1	2	3	4	5	6	7
9. I know how this colleague is going to act, i.e. s/he can always be counted on to act as I expect.	1	2	3	4	5	6	7
10. I have a deep understanding of this colleague's business goals.	1	2	3	4	5	6	7
11. I have a deep understanding of this colleague's everyday work practice.	1	2	3	4	5	6	7
12. I have a deep understanding of the professional language this colleague uses in his/her everyday work.	1	2	3	4	5	6	7
	Hardly any						Significant amounts
13. I have received facts or information from this colleague (such as data, documents etc.)	1	2	3	4	5	6	7
	Hardly any						Significant amounts
14. I have received personal practical know-how from this colleague (such as advice how to deal with a work related problem, personal insight, tricks-of-the-trade etc.)	1	2	3	4	5	6	7

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