

# Knowledge and Strategy Creation in Multinational Companies

## Social-Identity Frames and Temporary Tension in Knowledge Combination

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### Abstract:

- While a great deal of research on international business and management has fruitfully focused on knowledge transfer, this paper investigates knowledge creation; the process by which multinational companies (MNCs) continuously combine and recombine knowledge in order to generate a competitive advantage.
- By integrating contemporary strategic management research into the field of international business, we have developed a new perspective on strategy and knowledge creation in MNCs, by elaborating on and extending the knowledge-based view and other views of MNC strategy making. We suggest that the agglomeration of a multitude of diverse social-identity frames, nested inside a corporate centripetal frame, creates an arena in which exploitable new knowledge can be created.
- We propose that while a common corporate social-identity frame promotes knowledge transfer, the diversity of various subgroups' social-identity frames, in combination with interaction and temporary tension between them, advances knowledge creation. Although this partly involves a serendipitous process, it promotes a systemic advantage for MNCs compared to local firms, as regards knowledge exploration, (re-)combination, and integration. This competitive advantage is firmly rooted in hard-to-imitate complex social processes and may therefore be sustainable.

**Keywords:** Multinational companies · Strategy · Knowledge creation · Social identity frames

**Received:** 20.12.2010 / **Accepted:** 09.03.2011 / **Published online:** 10.11.2011  
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## Introduction

For more than three decades, international business and management research has emphasized knowledge transfer and its associated characteristics and challenges as a primary undertaking of multinational companies (MNCs).<sup>1</sup> Most commonly, the rationale for undertaking this research is that the global economy is becoming increasingly knowledge-based (Dunning 2000) and/or that the MNC is an extraordinary vehicle for knowledge transfer across national borders (Kogut and Zander 1993/2003). Significant progress has been made in this analysis, but the international literature on knowledge transfer lacks a thorough examination and micro-level analysis of the way in which potentially valuable MNC knowledge is created in the first place. Knowledge transfer in itself may not necessarily provide a competitive advantage; what matters is also how transferred knowledge is combined and formed into novel knowledge throughout the MNC in order to generate competitive advantage.

Despite the fact that the existing literature includes a debate over the significance of centrally versus locally situated knowledge, extant studies say relatively little about what drives the processes that combine and recombine knowledge in (and between) MNC sub-units and subgroups and the external environment which they are embedded in. Thus far, the emphasis has largely been on the MNC as a common 'umbrella body' defining shared identity and understandings through which knowledge transfer across national borders runs smoothly. Our mission is to analyze the extent to which the MNC is also an extraordinary vehicle for combining and recombining knowledge in ways that will facilitate knowledge creation and potentially generate competitive advantage. Specifically, we will examine how diversity and temporary tension, under a common corporate MNC umbrella (Regnér 2003), can facilitate the exploration and multiplicity that is required for the discovery and creation of strategic opportunities and sustainable competitive advantage (Denrell et al. 2003).

It is our view that the widespread, interesting and important scholarly discussion of knowledge creation in MNCs over time has moved from an excessive focus on the activities and capabilities of units in the parent country to a possibly equally excessive focus on initiatives, entrepreneurship and the environmental embeddedness of foreign subsidiaries. Since the pendulum has swung, less focus has been given to developing a synthesis, that is, a more balanced, integrated theory that explores the details of why and how MNCs are regularly able to combine parent and subsidiary competencies with external knowledge and to create knowledge of the type that underlies a sustainable competitive advantage. Moreover, most examinations of MNCs have hitherto been focused on macro-level constructs, ignoring possible forces at the micro level (Foss and Pedersen 2004).

As described in the resource-based view, for knowledge and resources to provide for sustainable competitive advantage the requirements are vast (Barney 1986a, 1991; Peteraf 1993) and they can only be developed in intricate ways. To develop them, extreme levels of knowledge exploration are required, which includes elaborate processes involving complex social webs of many actors and their interactions over time in trying to determine which combinations of knowledge and resources that may be valuable. In fact, this process is so complex that it is likely to include a fair amount of serendipity (Denrell et al. 2003) and luck (Barney 1986a), but above all it is characterized by social complexity

(Barney 1991). Based on the recent focus in strategic management research on micro-foundations (Felin and Foss 2005; Gavetti 2005; Regnér 2003, 2005; Teece 2007), socially situated strategy-making (Johnson et al. 2003; Jarzabkowski 2004; Regnér 2008; Whittington 2006) and extreme exploration requirements in the economics of strategic opportunity (Denrell et al. 2003), our purpose is to develop a new perspective of MNC knowledge creation. The aforementioned research, however, is still in its early stages and under development, and thus far very little has been explored in the field of international business and management research. Nevertheless, these emerging ideas have potentially important implications for MNC theory and for explaining how novel knowledge is created in the MNC. Our primary concern here is thus with the MNC as a vehicle for 'international knowledge creation and transformation', rather than 'international knowledge transfer'. We will argue that the MNC is, in fact, fittingly designed for knowledge creation and, due to its complexity and diversity, a useful study object for evaluating hypotheses concerning knowledge creation and innovation in general.

Our point of departure is that differences, both between countries (Ghemawat 2007) and between diverse MNC units within the same country, are valuable sources of variation and creation, and are not (solely) limitations which must be overcome. This perspective incorporates some fundamental characteristics of MNCs that may result in knowledge creation advantages over local firms. While aspects of these advantages have been discussed earlier, we will emphasize the systemic properties of the MNC, as we believe that progress can now be made by focusing on the micro-level processes that underpin the creation of new knowledge that may potentially generate a competitive advantage.

In essence, we argue that, in spite of allusions to the 'recombination' of knowledge in MNCs (Kogut and Zander 1992, 1993; Hedlund 1994), we have tended to overlook the process of knowledge creation, even in the resource-, capabilities- and knowledge-based approaches. We thus need more insight into *how* resources, capabilities and knowledge emerge and are created to begin with and what the organizational and managerial processes and activities are that underlie this. While research has started to examine micro-level mechanisms of knowledge and strategy creation in MNCs and diverse categories of managers and strategy activities involved (Regnér 2003, 2005) we still do not have a complete picture of this or the interactions and synergies between MNC sub-units and subgroups. Research on dynamic capabilities emphasizes capability change, but it has so far mainly focused on the nature of the capabilities and their evolution at the firm level (Eisenhardt and Martin 2000; Helfat et al. 2007; Teece et al. 1997; Teece 2007; Winter 2003).

Hence, while research on knowledge transfer in MNCs has celebrated great achievements, we also need to direct our attention towards the creation of unique and idiosyncratic knowledge, during which the exchange of tacit and non-codifiable knowledge plays an important role. Before the surge of knowledge transfer research, we somewhat naively neglected knowledge dissemination in MNCs, or assumed it to be smooth and devoid of friction. Similarly, there has been a tendency to assume that knowledge creation happens more or less effortlessly as a result of research and development (R&D) or other routine innovation activities, particularly in MNC units which are sometimes enabled by benevolent knowledge sharing between them. We, however, believe that the processes and mechanisms involved are considerably more complex and at times tension-ridden, especially for more idiosyncratic combinations of knowledge and capabilities that may

provide a competitive advantage. In addition, the trends among MNCs in certain industries to not only outsource manufacturing, but also (routine) technological development indicates that it is becoming increasingly likely that a sustainable competitive advantage will instead derive from the internal creation of socially complex, tacit knowledge in combination with effective knowledge transfer.

In our analysis, we will base our argument on contemporary strategic management research and relax some commonly used points of departure and assumptions in the analysis of MNCs, including: the emphasis on aggregate macro-levels of analysis; the top management/headquarters strategic decision-making and choice perspective (and thus homogeneity regarding strategy beliefs), the dominant belief in managerial intentionality and foresight and the emphasis on tension and conflicts between (foreign) units as important limitations and liabilities. The creation of potent new knowledge in MNCs will thus here no longer be seen as essentially a harmonious, well-planned local affair executed in traditionally competent and advanced home countries, initiative-rich entrepreneurial local subsidiaries, or designated global ‘centers of excellence’.

### **The MNC as an Empirical Foundation for Theory-Building**

When discussing the MNC as a research context, Roth and Kostova (2003) argue that MNCs have been used: (a) to study MNC-specific phenomena; (b) to validate and expand upon existing theories; and (c) to develop new theories. In this article, we aim to develop new theories about knowledge creation from a micro-perspective which is concerned with individuals’ identities (including their perceptions, motivations, actions, and norms) and social dynamics. We will attempt to explain why MNCs with a certain degree of regularity can create and develop new knowledge that will lead to a sustainable competitive advantage, and what the underlying micro-processes may look like. Our perspective when studying MNCs is designed to ‘leverage complexity’, in the sense that the complex nature of MNCs is used as an asset (instead of a complicating liability) in our quest to understand fundamental organizational phenomena. Fundamentally, we argue that the study of MNCs can contribute to other management research areas, such as organizational and strategic management theory, and also to other disciplines which are interested in knowledge creation and sources of firm heterogeneity (economics, sociology, psychology, etc.).

MNCs operate in many different environments, using an array of geographically diverse units and groups with different goals, and are inhabited by managers and employees from different ethnical and cultural backgrounds and with different roles. Most scholars refer to ‘diversity in identity’ as being based on membership in social and demographic groups, and how these differences in identities affect social relations in organizations. Diversity can therefore be defined as a mixture of people with different group identities within the same social system (Nkomo and Cox 1996). In this context, MNCs must be regarded as a potentially very fruitful ‘bowl or kettle of fish’ in which to botanize. The contextual heterogeneity, combined with the intra-organizational complexity and individual variability, makes it possible to study a rich and varied set of identification processes shaping social

interaction, and ultimately to study organizational performance. By using the MNC as a context for research, scholars will be able to leverage the fact that the default situation in an MNC provides a great deal of variation in terms of the social categories available for analysis (see Zander et al. 2010). The ensured potential variability of multiple local patterns of identification processes within the context of a larger global frame and the resulting outcomes in terms of knowledge creation should help us to answer questions and to develop theories of a general nature, where small, local organizations can be seen as a special case.

While MNC-related research may be gaining legitimacy during this period of globalization, scholars are increasingly being asked to defend their choice of MNCs as a study context and to demonstrate and articulate the distinctiveness of this context for theory building. We believe that a central question to be answered by the community of international business scholars is: what is the benefit of studying MNCs, arguably the most complex organizations in existence today? In our view, the obvious answer to this type of question is that it is beneficial to study MNCs *because* of their inherent systemic internal and external complexity. In short, the study of MNCs allows researchers to study the complexity of different environments and semi-integrated internal units that are willing (or sometimes forced) to interact under a common corporate roof. Understanding these processes may illuminate important new general relationships and explanations regarding, for instance, knowledge creation.

Thus, in contrast to some who believe that international business research is less likely to contribute to the core of other domains (Peng 2004), we argue that research on MNCs has a great potential to contribute to other bodies of theory (cf. Ghoshal and Westney 1993). Our response to those who are concerned with international business researchers' lack of focus on 'big questions' (Buckley 2002), a 'lost relevance' and scholars' 'atheoretical' approach (Shenkar 2004) is that the interaction between semi-integrated MNC units in the unique context of cross-border and culturally complex operations in knowledge creation processes offers extraordinary opportunities to examine big, relevant and theoretically central questions.

With regard to the broad potential of the MNC as a valuable study object, we will therefore develop three central themes in this paper. First, we will discuss contemporary strategic management theory and the possibilities for the discovery of valuable strategic opportunities underpinning sustainable competitive advantage. Second, we will build on emerging thoughts in strategic management, focusing on the micro-foundations of strategy, and develop our view of how the interaction between diverse sub-units and sub-groups within the MNC may facilitate knowledge creation. Finally, will we argue that the MNC comprises a fertile foundation for examining knowledge creation, and examine the ways in which this may be useful, both for scientific progress in the fields of international business and other research areas, and for practitioners.

The remainder of this article is divided into five sections. First, the literature on knowledge in MNCs is briefly reviewed and the history of the field in this respect is used as a backdrop for our main argument; that knowledge creation in MNCs takes place due to their large exploration capacity, their potential for combining extant and novel knowledge, and the tension in the intersection between diverse subgroups. Second, the extensive requirements for a sustainable competitive advantage in strategic management theory are

discussed in relation to the potential for knowledge creation in MNCs. Next, we discuss the importance of the diversity of cognitive interpretations and normative evaluations for knowledge creation within what we label “social-identity frames” and how they may differ between diverse parts of the MNC. Fourth, the importance of temporary tension in the knowledge creation process is discussed and our argument is summarized. Finally, we will discuss our ideas in relation to previous international business research, outline possible limitations, and suggest areas for future research.

### Knowledge Creation in MNCs

The knowledge-based view of the firm, which is based on the Schumpeterian spirit, claims that firms are essentially knowledge-creating entities and that the successful creation of new, commercially viable knowledge leads to a sustainable competitive advantage. Continuous knowledge creation and utilization are seen as the *raison-d'être* of firms in a world which is characterized by a process of creative destruction (Schumpeter 1942). This reasoning is deeply rooted in the international business discipline.

Hymer (1960/1976) in his seminal contribution, emphasized the importance of ownership- or firm-specific advantages for firms wishing to overcome the disadvantages of being active in foreign markets. As he showed, firms which engage in overseas production must have some form of proprietary advantage in order to compensate for the natural disadvantage of competing with established firms in a foreign land. As stated by Dunning (1980, 1988) this firm-specific advantage can be subdivided into two distinct types of advantage: asset advantages, that stem from the exclusive and privileged possession of income-generating assets, and transaction advantages, which reflect the firm's ability to economize on transaction costs as a result of multinational coordination and control of assets. While belief in the role of transaction cost economizing is common, there has been general agreement that some form of firm-specific advantage is nonetheless necessary for international expansion (Rugman 1981; Dunning 1988). In this context, home-market conditions and entrepreneurship in particular have been seen to affect the speed and direction of internationalization (Johanson and Vahlne 1977; Oesterle 1997; Oviatt and McDougall 2005). Technological resources, in particular, have been the focus of many studies of firm-specific advantage (e.g., Teece 1977; Rugman 1981), although researchers have also considered manufacturing, marketing, organizational and human resources (Dunning 1993, p. 81).

In early international business theory, the prevailing assumption was that the necessary advantage was a product of *knowledge creation in the MNC's (highly developed) home country*. It is not surprising that Vernon (1966), in his product cycle hypothesis, discussed the actions of North-American MNCs in a similar way to Hymer. Vernon's (1979) revision of the idea of the product cycle came as a response to the United States (US) and its MNCs gradually beginning to lose their completely dominant post-war position in the world economy.

In the mid-1990s, Cantwell (1995) re-examined two hypotheses associated with earlier versions of the product cycle model. The first hypothesis, that innovations are almost always located in the home country of the parent company, was rejected on the basis of

evidence drawn from 100 years of US Patent Office data. The second hypothesis, that the international dispersion of activity was led by leaders in the field of technology, was, however, proven to be historically valid. The advantage of MNCs is that they are able to exploit new knowledge from across the globe, which is often *created locally in foreign markets*.

Beginning in the late 1970s, there was an increasing realization that MNCs were busy developing internal international networks in order to exploit the potential of foreign units in different locations which were initially involved in the adaptation and development of technology, but which, over time, drifted into research. Motives, the characteristics of different locations, inter-temporal characteristics, modes of entry for foreign direct investment (FDI) in R&D, and the roles of foreign subsidiaries in knowledge creation have been explored in a variety of countries and settings.<sup>2</sup>

The internationally distributed R&D activities in MNCs can, in a wider sense, be seen as manifestations of entrepreneurship in foreign subsidiaries. A parallel body of literature was developed from the 1980s onwards, in which the strategies of MNCs began to center on the increasingly important role played by subsidiary companies as contributors to the development of firm-specific advantages. MNC subsidiaries start out with market-seeking responsibilities (i.e., with the objective of selling the MNC's products in the local market) but, as the parent company grows and as the subsidiaries develop resources and capabilities of their own, they take on additional responsibilities, tapping into new ideas and opportunities in the local market, interacting with other actors in the local environment, building up their unique capabilities on which the rest of the MNC can draw, and becoming active participants in the formulation and implementation of strategy (see, for example, Prahalad and Doz 1981; Hedlund 1986; Bartlett and Ghoshal 1989; Gupta and Govindarajan 1994; Birkinshaw 1997; Birkinshaw et al. 1998). The body of research which is concerned with subsidiary roles—determined by the external environment, headquarters or subsidiary managers—is testament to the shift which has taken place in the locus of firm-specific advantage creation (Ghoshal and Nohria 1989; Martinez and Jarillo 1989; Roth and Morrison 1992; Gupta and Govindarajan 1994; Birkinshaw and Morrison 1996). Knowledge creation and maintenance in MNCs, and thereby their sustainable competitive advantage, has therefore shifted from being seen as the sole concern of the parent company to including the efforts of individual foreign subsidiaries.

Increasingly, foreign subsidiaries are conceptualized as semi-integrated entities with entrepreneurial potential within a complex competitive arena, consisting of an internal environment of other subsidiaries, internal customers and suppliers and an external environment consisting of customers, suppliers and competitors (cf. Birkinshaw et al. 2005). Recently, the role and importance of *the external environments in which MNC subsidiaries are active and embedded* has received an increasing amount of attention in the discussion of knowledge creation in MNCs (Rugman and Verbeke 2001; Andersson et al. 2002, 2005, 2007; Almeida and Phene 2004). An extreme version of the importance of the local environment in knowledge creation is presented by Yamin (2002), who argues that the organizational isolation of foreign subsidiaries in MNCs can lead to the replication of idiosyncratic routines, and that control instruments may work less effectively. As foreign subsidiaries are isolated, the probability that a differentiated set of knowledge will exist increases, and the adaptive capabilities of the MNC are improved.

It is our contention that the scholarly discussion of knowledge creation in MNCs has moved from an excessive focus on units in the parent country (internal/home) to an equally excessive focus on the units in an environment of the host country (external/host). We strongly believe that the key to understanding knowledge creation in MNCs lies in the systemic recombination of knowledge (cf. Kogut and Zander 1992, 1993; Hedlund 1994) which comes about when multiple and heterogeneous subunits and subgroups in an MNC interact in (and sometimes collide over) discussions concerning what new knowledge and novel capabilities will provide locally or globally exploitable business opportunities in the future (cf. Regnér 2003). Instead of discussing the advantages of multinationality in terms of the specific places in which they may reside, we intend to examine and understand the fundamental systemic principles and processes that underpin knowledge exploration and creation in MNCs. We will demonstrate the basic characteristics and structural features which provide MNCs with an advantageous position for exploration and creation, in relation to local firms. Our focus is on the diversity of subgroups in the MNC and the underlying micro-level processes that drive knowledge creation and contribute to the creation of novel (re-)combinations of knowledge and potentially competitive advantage.

### **MNCs and Possibilities for Strategic Opportunities and Competitive Advantage**

The importance of knowledge heterogeneity has been one of the most pervasive pillars in strategic management research for quite some time (Rumelt 1984, 1991; Wernerfelt 1984; Barney 1986a, 1991; Winter 1987; Kogut and Zander 1992; Peteraf 1993). The doors that the resource-based view has left open for possible discovery and the creation of heterogeneous strategic opportunities and sustainable competitive advantage are, however, few. Fundamentally, the sources of competitive advantage have been described as being related to luck, superior insight into the firm's own strategic assets (Barney 1986a), causal ambiguity (Alchian 1950; Lippman and Rumelt 1982), unique historical conditions or social complexity (Barney 1991). While recognizing that the borders between the latter, causal ambiguity, and historical conditions is not always clear and sharp in the literature, and that there may clearly be interaction effects between them, we emphasize and try to elucidate social complexity in this paper (cf. Regnér 2010).

A basic foundation of the resource-based view is that, in an efficient strategic factor market, the price of each existing resource will reflect its value in all of its present uses (Barney 1986a). Valuable strategic opportunities cannot be found unless some novelty is introduced in the creation and/or use of resources. It has therefore been argued that the discovery of such opportunities is likely to be serendipitous and requires that the firm was already in possession of several of the necessary components before the discovery, but believed them to be of little value individually (Denrell et al. 2003). This is because of the complex combinatorial character of valuable strategic opportunities (if they weren't complex, they would already have been discovered). In addition to putting a premium on being exposed to vast and different sources of knowledge, this puts a premium on already having a diverse internal knowledge set-up. Hence, first the firm needs to be exposed to a sufficient amount of new knowledge and second, because of the complex combination of knowledge which is required, the firm has already to be in possession of some of the



required components. If this analysis is correct, it is not farfetched to suggest that MNCs may be in a particularly advantageous position from which to capture new and valuable strategic opportunities compared to local actors (although, at least partly, for serendipitous reasons).

The required introduction of novelty in the creation and/or use of resources can be exogenously and/or endogenously driven. Changes in the environment (in technology, regulation, customer's preferences, etc.) or alternative internal interpretations and combinations of resources can therefore introduce variation and novelty. The MNC seems to be uniquely positioned to seize both. The extraordinary combination of an elevated diversity of a combination of external *and* internal sources of knowledge may thus provide the MNC with an advantageous position in relation to smaller and/or local competitors. The idea of the MNC as a 'global scanner' that has the capacity to detect opportunities in global environmental change is part of the foundation of international business theory (Buckley and Casson 1976; Vernon 1979) and has been further developed in more recent international business theories (Doz et al. 2001). While this notion is central, it is important to realize that external knowledge is always filtered through internal cognitive interpretations and normative evaluations and combined with diverse internal knowledge, resources and capabilities. External knowledge is therefore not independent of internal knowledge. The value of the immense variety in internal MNC knowledge sources has, however, attracted far less attention than the global reach of MNCs. Moreover this variety is often not intentional; the diversity in resources, capabilities and views is quite commonly a result of slack. Knowledge sometimes remains in 'dark and distant corners' of the MNC, where the 'torch' of reengineering and efficiency programs has not managed to illuminate slack that is to be weeded out. In effect, MNCs frequently know more than they use, which often later may prove useful in the discovery and creation of strategic opportunities (Miller 2003). Compared to previous emphasis, this analysis shifts the focus onto the interaction of numerous semi-integrated internal sub-units and subgroups of the MNC, including a multiplicity of capabilities, cognitive frameworks and norms.

MNC subgroups introduce novelty based on diverse and sometimes conflicting cognitive interpretations and normative evaluations in the quest for strategic opportunities that signify 'social complexity', which has been suggested as the basis on which a sustainable competitive advantage can be built (Barney 1991). Social complexity denotes complex social phenomena that significantly constrain other firms' opportunities for imitation. A number of such frictions and inertial forces that delay imitation have been suggested (Barney 1986b; Bromiley 2005; Rumelt 1995; Regnér 2010; Schoemaker 1990). They may, for example, involve particular characteristics of the organizational culture (Barney 1986b), reputation (Porter 1980), cognitive frameworks (Amit and Schoemaker 1993) and norms (Jonsson and Regnér 2009). The MNC comprises any number of these complexities, such as organizational culture at the corporate level (e.g., 'The HP way' or 'The IKEA way') as well as particular perceptions, norms, etc. in sub-units and subgroups and, above all, all possible combinations of these. It is particularly interesting that, the MNC encapsulates a whole range of (partly overlapping) possible socially complex phenomena that may provide various strategic opportunities and that can be thought of as strategic options (cf. Gutgut 1983, 1989).

In short, we suggest that MNCs may be particularly well-equipped to combine diverse external and internal sources of knowledge, and that the latter may play a particularly important role as they not only encompass an extreme diversity in the nature of resources and capabilities compared to local actors, but also diverse interpretations and evaluations of these assets and of their possible combination with external sources of knowledge. The MNC is thus systemically equipped for capturing a broader range of strategic opportunities than local firms, not the least in interaction with some of these, like local innovators and entrepreneurs (cf. Bohman 2010). In comparison to earlier arguments for the advantages of MNC global reach, we emphasize not only the potential access to diverse external sources of knowledge, but the importance of the exposure to an unusual amount of external knowledge that this implies and the possibilities of knowledge combination and integration that this offers. Most importantly, this knowledge is evaluated from a whole range of different vantage points based on diverse cognitive and normative evaluations and equally diverse combinations of a range of diverse resources and capabilities, which suggests that a complex web of social phenomena is involved.

In the partly serendipitous process of discovering and creating novel strategic opportunities and competitive advantage, the MNC is thus in the long run likely to have an advantage over local firms due to its extremely broad and diverse set of resources and capabilities and cognitive interpretations and normative evaluations under a common global roof. In brief, the MNCs include multiple sets of subgroups that, on the one hand, share common cognitions and norms with the rest of the MNC, but that also harbor their own idiosyncratic cognitions and norms that may potentially capture valuable strategic opportunities. In the following section, we will discuss specific aspects of this in the context of what we have labeled as ‘social-identity frames’.

### **MNCs as Collections of Multiple Social-Identity Frames**

As discussed above, MNCs encompass vast differences within themselves, not only in terms of exposure to external knowledge and the knowledge set-ups of diverse subgroups, but also in terms of how various subgroups cognitively and normatively evaluate their own and external knowledge and opportunities. Novel knowledge creation includes a process of identifying what knowledge to create, being motivated to pursue knowledge creation and, finally, having the ability to do so. This is similar to the proposed three-stage process of imperfect imitation, which emphasizes the importance of cognitions and norms as antecedents to the technological ability to imitate (Jonsson and Regnér 2009; Regnér 2010). This analysis thus emphasizes the significance of cognitions and norms, which are inherent social phenomena shared among people, and their potential important consequences for knowledge and strategy creation and sustainable competitive advantage.

It has been observed in empirical investigations of MNC strategy creation that differences between subgroups’ strategy contexts, including their inherent knowledge or cognitive structures and activities, can have profound influence on strategy process and subsequent strategy content (Regnér 2003). Specifically, depending on the character of the MNC subgroup or sub-unit setting and intrinsic knowledge structures, they exhibit more or less accurate associations and actions for the discovery or creation of new strategic

opportunities. They thus differ in their capacity to create novel knowledge or capabilities. Consequently, strategy contexts have been described as ‘activity configurations’ including specific actors, cognitive frames, socio-cultural features, artifacts and practices that in combination, rather than individually through complementarities (Roberts 2004), provide for strategy creation (Regnér 2008). Social embeddedness and relations are thus essential in the development of strategy and capabilities. Individuals and groups of actors build on shared understandings (e.g., group, departmental, organizational) and interactions with others (e.g., colleagues) in strategy making. It is this intentional engagement with other people and their views that makes things meaningful; actors use their social relations when updating their beliefs and behavior, and thus in their quest for a competitive advantage involving knowledge creation (Balogun and Johnson 2004; Regnér 2003).

Similarly, recent research on strategy-as-practice has emphasized the significance of socially-shared understandings and shared views of practices that organizational members draw upon with consequences for strategy-making and strategic outcomes (Johnson et al. 2003, Whittington 2004, 2006; Jarzabkowski 2004). The importance of shared understandings seems to be particularly apparent when new knowledge, capabilities and strategies are formed via complex social and knowledge-based relationships in subgroups within the firm/MNC. This has been demonstrated with regard to new venture units (Burgelman 1983), middle management initiatives (Floyd and Wooldridge 2000), peripheral strategic initiatives generally (Regnér 2003), and has also been observed for MNC subsidiaries (Birkinshaw and Fry 1998; Birkinshaw et al. 1998; Birkinshaw 2000). In brief, subgroups are spontaneously or deliberately formed and entail distinct social identities and relationships which are separate from the rest of the organization with the intention of generating new capabilities and products, as well as novel strategies.

The very essence of the knowledge-based view of firms (Kogut and Zander 1992, 1993, 1996; Zander and Kogut 1995; Nonaka and Takeuchi 1995; Grant 1996; Spender 1996) is that firms represent social knowledge of coordination and learning which is bound to identity (see also Tripsas 2009). Economic value is seen as being built upon coordinated action carried out by members of a social community with specialized and personal knowledge. The inherent sociality of people provides the basis for the sustained combination and coordination of knowledge and capabilities and eventually, competitive advantage. What binds people together in knowledge-producing organizations are categories of what is normal and abnormal, what is good and bad, who is like us or not like us, what works and what does not work. The link between the individual and the social is that these categories are anchored in multiple and contradictory but shared identities like family, clan, class, religion, nationality, ethnicity, language, craft, profession (see Kogut 2008). This provides the basis for novel knowledge combinations. While there is no large body of research focusing on shared understandings and interpretations in MNCs (cf. Marschan-Piekkari et al. 1999; Kim et al. 2003; Vaara et al. 2003; Frost and Zhou 2005, Vaara and Tienari 2008), some researchers have examined the ways in which diverse knowledge frameworks (Regnér 2003) and embeddedness in diverse norms (Edman 2009) can promote the identification and exploration of strategic opportunities.

In line with the reasoning outlined above, we suggest the *social-identity frame* as a socio-cognitive deduction that invokes a certain understanding and behavior in relation to a strategy (Regnér and Zander 2008) and on which organizational members inductive,

forceful, and intentional discovery and creation of novel knowledge is based (Regnér 2003). Social-identity frames are characterized by shared cognitions, norms and practices and related visions of the future that produce and reinforce certain emotions, beliefs and behaviors. This implies that while managers and other organizational members work vigorously, diligently, and intentionally on discovering and creating new strategic opportunities, they do so within a social-identity frame and thus based on widely shared perceptions, motivations and emotions. In addition to building on social identity theory (e.g., Tajfel 1974; Turner 1975; Tajfel and Turner 1979) the social-identity frame concept draws from early theoretical and empirical research in the knowledge-based view (Kogut and Zander 1992, 1993, 1996; Zander and Kogut 1995) and the strategy activity and practice approach (Regnér 2003, 2005) that emphasize the importance of group identity and activities respectively for capability, strategy and firm emergence and creation.

The social-identity frame concept is thus related to extant research on strategy-as-practice (e.g., Johnson et al. 2003; Jarzabkowski 2004; Regnér 2003, 2008; Whittington 2006) that builds on social theory generally (Giddens 1984) and its practice-turn specifically (e.g., Schatzki et al. 2001; Schatzki 2002). The significance of practice (Pickering, 1995), communities of practice (Lave and Wenger 1991) and epistemic communities and cultures (Haas 1992; Knorr-Cetina 1999) have also been picked up on in organizational theory (e.g., Brown and Duguid 1991, 2001; Orlikowski 1992, 2002) and in examinations of the knowledge-based view (e.g., Håkanson 2010; Fransson et al. 2011). Compared to some of this research, the social-identity frames concept puts relatively more emphasis on individual agential action in knowledge creation and the importance of social interactions and relationships within and between groups for this. The focus is on business acumen and individuals solving various tasks in knowledge creation in accordance with a vision and an agenda within diverse social-identity frames. The interacting web of strategies (Kristensen and Zeitlin 2005) and actions pursued by different actors in the MNC entails co-creating and coordinating knowledge and activities towards novel knowledge, capabilities and strategies.

Social-identity frames thus capture shared understandings and behavior, including common perceptions (cf. Huff 1982; Porac et al. 1989), norms (Scott 2001; Jonsson and Regnér 2009) and practices (Whittington 2006), around which knowledge is organized in strategy making. In the language of the knowledge-based view, identity frames are cradles of social communities which have the potential to create economic value built on coordinated action among people with their own specialized and personal knowledge, but rallying around a shared vision (Kogut and Zander 1996). This is what Penrose (1959, p. 216) calls an 'image' in the mind of an entrepreneur, or an entrepreneurial 'vision' in the words of Schumpeter (1942).

Shared social-identity frames within an organization or group bring into play particular beliefs and behaviors in relation to strategy. This implies that diverse subgroups within the MNC can form their own cognitive interpretations and normative evaluations in relation to the same knowledge, resources, capabilities, opportunities, etc., and act accordingly. In this way, identity, knowledge and strategy are mutually constitutive and need to be examined together, as knowledge in operations builds on these understanding-behavior deductions. The importance of social mechanisms for knowledge transfer has previously been emphasized in international business research (Nobel and Birkinshaw 1998; Gupta

and Govindarajan 2000; Björkman et al. 2004), but less focus has been given to its vital importance for knowledge creation.

In MNCs, a number of social-identity frames exist at different levels. Often, we see them as tied to subsidiaries, but frames organized around visions of major new technologies or customers, for instance, are also possible in other subgroups of the MNC. Multiple social-identity frames at lower levels are eventually nested within a common corporate social-identity frame. It is this common frame that is responsible for the centripetal force which is necessary in order to encourage units with different social-identity frames to attempt to interact and cooperate for the common good of the MNC. Without it, units in significantly different institutional settings would drift apart and only be creative within their local social-identity frame, much like their national competitors.

To summarize briefly: when introducing social-identity frames as a key concept, we emphasize the importance of sociality and identification and thus invoke interests other than those which are purely economic in business activities. In short, social-identity frames can be seen as social constructs which are negotiated between knowledgeable and intentional actors in order to anticipate and manage perceptions and motivations in a group or organization, and thereby define their social interests. Most fundamentally, we thus emphasize social interests, including identification, approval, belonging, sociability, status, etc., in addition to economic interest. This emphasis on social interests including norms and motivations differs from the emphasis used by other researchers who have primarily emphasized cognitive constructs (Huff 1997; Porac et al. 1989), often interpreted as top management mindsets in the international business literature (Sucheta et al. 2011). Another important difference is that, in our conception, cognitions and norms are intertwined with action (Weick 1995), as emphasized in recent work in strategy-as-practice (Balogun and Johnson 2004; Kaplan 2008; Regnér 2003, 2008). Hence, there is not simply a one-way relationship between cognition and action, but a two-way process between social-identity frames and action.

### **Extreme Knowledge Exploration and Diversity in MNCs: Knowledge Creation and Temporary Tension**

Why then would multiple and diverse social-identity frames within the MNC promote knowledge creation? We noted above that the complex combinatorial characteristics of strategic opportunities that generate a sustainable competitive advantage require both extreme exploration (Denrell et al. 2003) on the one hand and, on the other hand, that the firm is in possession of a great deal of the required knowledge before the discovery of the strategic opportunity (Miller 2003). The simple, but significant, answer to the question is therefore that the division of the MNC into geographically separated, semi-integrated subgroups with diverse social-identity frames can help the MNC to explore new strategic opportunities and to create new knowledge in this way. On the one hand, this division simultaneously provides the MNC with a global reach with regard to external sources of knowledge and, above all, a diverse range of internal sources of knowledge, including diverse cognitive and normative evaluations of external and internal knowledge and, therefore, extreme exploration. On the other hand, it implies that the MNC may already be

in possession of a great deal of the complementary knowledge required for the discovery or creation of strategic opportunities, including a set of diverse resources and capabilities and cognitive and normative evaluations. A division into subgroups or -sections is a common solution when trying to improve organizational structure in order to promote variation (e.g., Siggelkow and Levinthal 2003; O'Reilly and Tushman 2004), not least in the pursuit of ambidextrous organizations (Raisch et al. 2009), according to the literature on network structure (Hansen 1999), and on communities of species (Wright 1978). A semi-integrated subgroup structure improves the balance between exploration and exploitation (March 1991) and makes the organization search in more diverse ways for strategic opportunities (Fang et al. 2009). The evolution of the MNC, by its very nature, ensures the creation of distinct semi-integrated subgroup structures due to the differences between countries (Ghemawat 2007). Formal organizational structures in MNCs, together with informal coordination mechanisms (see Martinez and Jarillo 1989), have to a varying extent been seen as reflecting and supporting underlying sub-group structures. Wolf and Egelhoff (2010), for instance, argue that the double subordination of the matrix structure offers a sufficient level of heterogeneity in perspectives.

The significance of the multiplicity of partially and temporarily conflicting social-identity frames under a common MNC social-identity roof has largely been overlooked. Employees in a number of semi-integrated MNC units involved in search eventually meet in different constellations in an interchange between these diverse sources of knowledge in order to determine what strategies to pursue in the future and what knowledge to use. It is this variation in social-identity frames, in combination with a shared centripetal corporate-wide social-identity frame (often manifested in a corporate vision/mission statement, corporate values, and/or a corporate culture) which ensures the creation of new knowledge.

Our reasoning implies that we in the MNC, on the one hand, see a central (headquarters) social-identity frame that tries to ensure the reliable reproduction of knowledge, and on the other, flourishing sub-units and subgroups including diverse social-identity frames that, with the support of the local environment and networks, pursue the creation of their own knowledge and their quest for strategic opportunities. These two types of social-identity frame, of course, overlap to a certain degree. Organizational members may therefore be embedded in several identities; in addition to the overall organizational identity (that of the MNC), they may also be embedded in a local unit or subgroup identity (headquarters, subsidiary, team, etc.).

We suggest that the overlap and *temporary tension* created by these dimensions are essential as a foundation for the combination of knowledge and capabilities and thus for knowledge creation in the firm and the MNC. The overall and central force forms the basis of the firm, and local and peripheral forces tend to incessantly challenge the former or other social-identity frames. This regularly leads to temporary tension, lack of communication and conflicts (see e.g., Glimstedt et al. 2007). It turns out that tension is of significant importance for knowledge creation and strategy development in MNCs. Empirical research on MNC knowledge creation shows how managers in different subgroups with diverse associations and actions towards one and the same strategic opportunity can come into sharp conflict (Regnér 2003). However, this also leads to a beneficial need to sharpen arguments and evidence and subsequent synthesis (Regnér 1999). Tension can thus not

only be accepted, but be valuable as a source of creativity (Poole and van de Ven 1989; Lewis 2000).

Strategy process research has repeatedly emphasized the significance of conflict and tension between different views regarding strategy in the firm and company politics in strategy development (Pettigrew 1973; Bower and Doz 1979; Johnson 1987) and in promoting strategic change (e.g., Pettigrew 1987). Temporary tension may be necessary for the development of refined strategic alternatives and for the promotion of growth and change (Normann 1976; Pettigrew 1985; Crossan et al. 1999), as it may help to change cognitive attributions (Bowman 1995; Kaplan 2008) and behavioral routines, including the shaping of new combinations of knowledge. Our suggestion, that knowledge creation and the discovery of strategic opportunities may be the result of temporary tension emanating from *within* the organization, differs from the more common suggestions that emphasize the importance of environmental pressure or declining performance (Hedberg et al. 1976; Miller and Friesen 1980; Hedberg 1981) as triggers of knowledge creation, development and change. In our view, these diverse forces are interdependent; external forces and a declining performance are intimately linked with internal tension between social-identity frames. Multiple social identity frames enable knowledge creation and innovation in the MNC by causing fertile recurring temporary tension and provide for the possibility of social complexity (including specificity and stickiness) and therefore protection from competitor imitation. They may, of course also cause corresponding challenges in knowledge transfer, and it is a dire management task to create and maintain requisite loyalty to the company among employees pursuing visions and agendas tied to the local centrifugal social-identity frames they belong to.

It is in this context that a well-functioning overall and central MNC social-identity frame works as a centripetal force, letting change processes play out, and eventually facilitates the transfer of tacit and embedded knowledge within the firm and across borders (Kogut and Zander 1993). The peripheral social-identity frames in different host countries and subsidiaries provide the necessary diversity within the MNC that encourages experimentation and the development of new ideas (Birkinshaw 2000). It is the temporary tensions between these different social-identity frames, we posit, that drive the exploration and innovation which is necessary for the MNC to prosper. This involves a trade-on between exploitation and exploration, rather than a trade-off in terms of ambidexterity. It is, therefore, not a question of headquarters (and possibly some subsidiaries) always taking on an exploitative role, while other subsidiaries take on an exploratory role. Instead, it is a question of interplay between an exploitation-heavy centripetal MNC social-identity frame, which is related to extant core knowledge, and host-country and subsidiary social-identity frames that occasionally play an exploratory role. The temporary tension is, however, not necessarily located between headquarters and the subsidiaries, but also between and within subsidiaries. Most discussions regarding new knowledge and strategic direction within MNCs would include both a headquarters social-identity frame and multiple foreign subsidiary social-identity frames. An important factor supporting the existence of social-identity frames in the MNC, and contributing to the temporary tension and internal debate, is the empirically-demonstrated fact that the evaluation of capabilities in MNCs is an extremely complex task as suggested by contemporary theories in strategic management. Members of MNCs simply do not agree on where in the organization important capabilities reside—the

median inter-rater correlation for capabilities designated as strategic by top management in a sample of leading MNCs has been shown to be as low as 0.28 (Denrell et al. 2004).

What is therefore particularly interesting in the context of MNCs is the fact that the commonly observed and widely discussed temporary tension between headquarters and subsidiaries may, in fact, be instrumental and beneficial in the knowledge creation process. Following the same logic, and exemplifying our argument, the conflict between global coordination and national responsiveness (Bartlett 1986; Doz and Prahalad 1991) is often the one major reason why MNCs could potentially create new knowledge that would provide a competitive advantage on a regular basis.

To summarize, our story therefore casts some doubt on previous suggestions which were designed to promote integration and internal harmony in MNCs by balancing the need for global integration and local adaptation and, in fact, suggests that the opposite may be of more importance. The management of knowledge creation would therefore involve an invitation to uncertainty and ambiguity, and an acceptance and even encouragement of temporary tension. The striking paradox is therefore that the traditional division and tension between headquarters and subsidiaries that we can readily observe, and that a great deal international business research has tried to cure, may be crucial in encouraging the processes of knowledge creation. Hence, while top managers and headquarters keep on chasing subsidiaries to align with the overall MNC in their efforts to cut variance and costs by standardizing and centralizing, and the subsidiaries sustain their efforts to increase variance by adapting to the local environment, knowledge creation thrives.

In contrast to some theories of MNCs, we therefore suggest that for the MNC to survive and prosper in the long term, it is critical that the central MNC force is always kept at bay with counter forces from the peripheries (cf. Regnér 2003). In fact, it could be argued that this is the foundation of the MNC—a network of entities based on a common core identity that is never fully allowed to take over, as this would stimulate a maladaptive process and lead to short-term solutions (Levinthal and March 1993). Instead, in addition to the common core identity, the MNC is divided into a set of centrifugal subgroup social-identity frames that ensure that it never falls into an exploitation trap in the face of complex problems and environmental changes.

In brief, and in line with the reasoning above, we propose seven reasons why MNCs are uniquely positioned with regard to capturing strategic opportunities and the creation of new knowledge which could potentially lead to a sustainable competitive advantage: (1) While earlier examinations have argued that MNCs practice exploration to a significant degree, as each MNC stretches across national borders and over multiple heterogeneous organizational environments (Buckley and Casson 1976; Vernon 1979; Bartlett and Ghoshal 1989, 2002; Doz et al. 2001), we have clarified that it is the division of the MNC into multiple semi-integrated subgroups that promotes this extreme exploration which is necessary for the discovery and creation of strategic opportunities and a potential competitive advantage (Denrell et al. 2003); (2) Second, a factor which is even more important and much less often discussed, is the fact that sub-unit and subgroup strategy contexts are likely to vary substantially within MNCs (Regnér 2003). MNCs are complex organizations involving many hierarchical levels with divergent social-identity frames, and on top of that, differences in location specificity further increase the variation in social-identity frames (Regnér and Zander 2008). These diverse social-identity frames incorporate a



range of different perceptions, norms and values that not only have implications for the interpretation and evaluation of internal knowledge, but also for external knowledge; (3) Third, while social-identity frames may differ between subgroups, there is still an overall and common MNC social-identity frame that allows for shared perceptions and norms at the firm level. This provides the foundation for the transfer and interchange of knowledge within the MNC (Kogut and Zander 1992, 1993); (4) Fourth, this internal diversity implies that the MNC is likely to already be in possession of some of the required components (knowledge/resources or a certain interpretation and/or evaluation of them) that are needed for complex knowledge combinations to take place and thus for the discovery of strategic opportunities (Denrell et al. 2003). Hence, even though efforts to bring about integration in MNCs over time tend to eliminate any excessive knowledge, resources and capabilities other than those which are required to produce core services or products, it is likely that there will be knowledge and assets in the sub-units and subgroups that are not of primary use and that may even be considered liabilities. These assets may prove to be valuable in later stages of strategy development, as this idiosyncratic knowledge or resource configuration may become essential for future strategic opportunities (Miller 2003); (5) A fifth distinct feature that we can observe is that, at times, social-identity frames may differ substantially between, for example, central/head-quarter units and peripheral subsidiary units. This may produce significant differences in interpretations and evaluations of strategic opportunities and therefore temporary tension between the units (Regnér 2003). We proposed that it is within this temporary tension that the potential value of combining knowledge may lie, as it signifies an interchange between extant knowledge (which provides the current competitive advantage) and novel knowledge that may provide future advantages, which competitors have not yet detected (otherwise it would not be controversial); (6) Sixth, it is also apparent that the knowledge creation and combination which is produced by temporary tension between multiple nested social-identity frames involves intricate social phenomena including diverse cognitive and normative evaluations (Jonsson and Regnér 2009; Regnér, 2010, 2011) or, in other words, social complexity, and therefore may be inimitable (Barney 1991).

Our final message is thus that while MNCs are excellent vehicles for knowledge transfer, they are better suited to the creation of knowledge that may potentially provide them with a competitive advantage through transformation than their mono-national counterparts. MNCs not only traverse borders and national cultures, but encompass multiple sub-units and subgroups that involve a diverse set of social-identity frames that co-exist and interact under a common corporate social-identity frame, ownership, and governance. It can therefore be suggested that MNCs are organizational structures or networks that, while promoting novel knowledge creation/transformation through their diverse social-identity frames, still have the potential to ensure that the best knowledge will be transferred throughout the organization and exploited globally.

## Discussion and Conclusion

In this paper, we have used salient ideas from contemporary strategic management theory in order to examine MNCs and their capacity for generating ownership-specific advanta-

ges/a sustainable competitive advantage through knowledge creation. Our point of departure was the strict requirements in strategic management theory for any opportunities for developing a sustainable competitive advantage (Barney 1986a, 1991) and the possibility of discovering strategic opportunities in spite of these requirements (Denrell et al. 2003; Miller 2003). Building on the recent interest in the micro-foundations that underpin resources and capabilities (Felin and Foss 2005; Gavetti 2005; Teece 2007; Regnér 2003) and strategy-as-practice research (Johnson et al. 2003; Regnér, 2008; Whittington 2006), we have attempted to demonstrate how social complexity (Barney 1986b, 1991)—which, according to our theory translates as processes involving multiple social-identity frames—may provide inimitable knowledge creation and a competitive advantage. While this process includes managerial reflexivity and intentionality within individual social-identity frames, it is, in accordance with evolutionary views of strategy (Dosi et al. 2000), partly serendipitous.

While an emphasis on knowledge transfer in the international business literature illustrates how the MNC can disseminate and exchange knowledge across units and countries to reap the benefits of scale and scope, we also emphasized the advantages of MNCs with regard to knowledge creation. New knowledge can emerge in many ways and in many parts of an MNC. If we focus on the kind of knowledge which underpins a sustainable competitive advantage, it is our conviction that it is created not at any particular node of the MNC network, but through *the interaction of multiple social-identity frames* that characterize the MNC. This puts an emphasis not only on the significance of interactions and synergies between diverse MNC resources (cf. Penrose 1959), but the different cognitive and normative evaluations involved. We therefore see the MNC as a collection of partially isolated subgroups with distinct social-identity frames that create opportunities for recognition, interpretation, creation, communication, and adaptation in the face of environmental changes. It is the diversity produced by multiple social-identity frames and the potential internal temporary tension between them that enables the creation of unique and idiosyncratic knowledge of the kind that may potentially produce a sustainable competitive advantage. The co-existence of a common corporate social-identity frame and a number of capable foreign subsidiaries, harboring their respective distinctive views of the world, can create a healthy and productive tension that will instigate the potential integrative creation of new knowledge. We see the systemic properties of this *simultaneously heterogeneous and cohesive social community* as decisive with regard to knowledge creation. We therefore suggest that MNCs are particularly well-suited to knowledge creation, in comparison to local firms, due to their systemic advantage of reaching for and absorbing extreme amounts of exploration. This requires people belonging to the same overall social community, but to different social-identity frames, to negotiate the tremendous complexity involved in the discovery of the strategic opportunities that will provide a sustainable competitive advantage.

We have, based on our conviction, tried to make several contributions to the theory of MNCs. First and foremost, we suggest that while a common corporate MNC social-identity frame promotes knowledge transfer (Kogut and Zander 1992, 1996; Zander and Kogut 1995) the diversity of different semi-integrated subgroups' social-identity frames (Regnér 2003) within that common frame and the temporary tensions between them advances knowledge creation. Thus, we specify and extend previous suggestions that

MNCs have an advantage with regard to knowledge exploration due to their global reach (Buckley and Casson 1976; Vernon 1979; Doz et al. 2001). We have argued that it is not only global presence but the division into semi-integrated sub-groups or -sections (March 1991; Fang et al. 2009; Wright 1978) including diverse visions, cognitive interpretations and normative evaluations of internal and external knowledge and resources in various social-identity frames (Regnér and Zander 2008) that promotes the required extreme exploration (cf. Denrell et al. 2003) and provides exploration advantages compared to local firms. Second, we extended this explanation of the advantages held by MNCs and suggested that, due to the diverse range of social-identity frames in MNCs, there is an increased likelihood that MNCs (compared to local firms) will already be in possession of several components of the knowledge which is necessary to create novel knowledge and to discover valuable strategic opportunities (Miller 2003). Third, our explication of MNC multiplicity as a complex web of social-identity frames and the social interactions between them suggests that they may be an important source of not only knowledge creation, but also inimitability due to the social complexity at hand (Barney 1991). This is yet another reason why multinationality is an advantage. Finally, we posit that it is when the combination of the knowledge of sub-units and subgroups causes intra-MNC temporary tension and conflict that the potential for knowledge creation that generates a sustainable competitive advantage is at its highest. Tension indicates that the novel combination is rare, contested and is less likely to have been tried before by competitors. Moreover, the fact that the process of negotiating future capabilities is tension-ridden implies that the respective sides need to improve their solutions, sharpen their argumentation and develop their knowledge. The mere existence of challenges and temporary tension between different social-identity frames' visions of the corporate future may therefore improve the capabilities of MNCs.

Some recent empirical studies seem to be pointing in the direction of our argument (Regnér 2003), some without explicitly stating so. Almeida and Phene (2004) studied the influence of external knowledge on innovation in subsidiaries of MNCs. Using patent citation data pertaining to innovations by foreign subsidiaries of US semiconductor firms, the authors found that the technological richness of the MNC (which is roughly translatable to the level of variety in social-identity frames) has a positive impact on innovation. In another interesting paper, Andersson et al. (2005), using data on MNC subsidiaries in Finland and China, showed that MNC headquarters can influence the embeddedness of local subsidiary networks through the use of control mechanisms, which in turn enhance knowledge creation in subsidiaries. In our world view, the tension created by attempts by conservative headquarters to control subsidiaries which 'go local' may well enhance knowledge creation in MNCs.

An important aspect of realizing the potential benefits of knowledge creation is a functioning political process of 'selecting' future capabilities in a discussion between people from a range of semi-integrated social-identity frames. A body of previous research has emphasized information processing in the MNC context. For example, some research has considered information-processing demands as central factors in the design of efficient MNCs (Wolf 1997). Other recent studies (e.g., Birkinshaw et al. 2001; Wolf and Egelhoff 2002) have offered organizational solutions to improve information processing in MNCs. In these studies, information-processing demands are often connected to the general cog-

nitive abilities of managers to make strategic decisions when influenced by different environmental conditions or organizational contexts (Wood and Bandura 1989). However, previous research has not focused on *where* in MNCs increased information-processing demands emerge (Tihanyi and Thomas 2005). Based on our argument, we suspect that it is in the context of social-identity frames meeting to discuss (and fight over) future strategic knowledge development that information processing and interpreting demands become salient.

Our perspective has the potential to make a contribution to strategy research in international business. In addition to work on entry modes and alliance strategies, international strategy has received less attention overall of late (Werner 2002; Ricart et al. 2004; Ghemawat 2008) and has not moved far beyond early work on local responsiveness vs. global integration (Prahalad and Doz 1987; Bartlett and Ghoshal 1989). While Ghemawat (2007) has responded to this challenge and presented an innovative framework, our suggestion here is that we need to change our perspective on a more fundamental level. First, and building to a degree on the work of Ghemawat (2007), we need to see organizational, geographical, and technological distances as opportunities for knowledge creation and transformation and not primarily as liabilities (cf. Edman 2009). In essence, the dispersion of various, mostly locally-staffed MNC units across a semi-globalized world not only provides opportunities for extreme exploration, but also diverse social-identity frames and perspectives which encompass different perceptions, norms, values, etc. This implies that both internal and external knowledge will be seen differently from different vantage points in the MNC. Second, another area that requires a fresh perspective is the eternal quest to balance the competing demands for local adaptation and global standardization (Prahalad and Doz 1987; Bartlett and Ghoshal 1989; Westney 1994). In our view, it is exactly this temporary tension between (coalitions of) social-identity frames that fuels the sometimes heated discussions between subsidiaries and parent units, ultimately leading to the creation of new knowledge in the MNC. A third area that requires a more fundamental shift in perspective is the widespread assumption that managers are intentional analysts with foresight. Instead, we need to realize that they are more like hypothesis testers in 'real time', which implies that they form strategies not only deductively, but also inductively (Regnér 2003). This is associated with a necessary move from a macro analysis of knowledge, resources, and strategy to a micro-level focus including the actual formation of strategy (Johnson et al. 2003; Felin and Foss 2005; Gavetti 2005; Regnér 2008; Whittington 2006), including an investigation of the antecedents of knowledge, capabilities, and strategy positions.

In essence, we view MNCs as vehicles for complex knowledge creation and integration that includes intricate cognitive interpretations and normative evaluations of extant internal knowledge and its (re-)combination with other internal and external knowledge according to a vision. For less complex problems, comparatively non-directional market exchanges work perfectly well. The MNC's internalization of diverse social-identity frames that absorb external knowledge from local contexts allows for subtle and intricate interactions within and between diverse frames that are simply not possible between agents in a market, and therefore facilitates the development of idiosyncratic and firm-specific knowledge. Hence, internalization-, location- and ownership-specific advantages coalesce in our framework. Nevertheless, our primary goal has not been to present an

integrated theory of FDI and MNCs, but rather to demonstrate how knowledge creation is significantly and intimately related to several fundamental factors which are used to explain the existence of FDI and MNCs.

We believe that theories which emphasize the importance of transaction costs and the advantages of internalization, as well as resources and capabilities, require complementary explanations of how knowledge is created and recombined in the first instance. It is sufficient to determine that while the transaction cost framework may be powerful in terms of explaining parts of economic organization, it may be less appropriate for the explanation of knowledge creation and how new resources and capabilities emerge and develop. In particular, if perceptions, norms, values, etc. and the role they play in identifying, aligning, combining and coordinating activities and assets are important, there are no markets (or only limited markets) around for these matters (it is therefore not only a question of market failure, but market non-existence). With regard to resource- and capabilities views, it is sufficient to conclude that after having established the fundamental characteristics of knowledge, we increasingly need to examine the details of the underlying managerial and organizational processes leading to its creation and the socially embedded micro-level actors, activities, perceptions and norms that capabilities develop from.

With its extreme diversity, size and reach across multiple countries, cultures and environments, large MNCs can in conclusion, be thought of as fertile empirical ground for research on knowledge creation, as in MNCs, knowledge is created, combined and selected by a vast range of internal and external actors and forces. As a result of the extreme complexity of large MNCs, they give rise to a set of questions concerning the sources of variation and their interplay within a wider social community, collectively negotiated processes of selection characterized by politics and temporary tension, as well as multiple socially situated mechanisms of retention. In short, the MNC is an extremely fertile arena for both theoretically- and empirically-driven research on knowledge creation and the creation of a sustainable competitive advantage. The point is not, however, that there is a particular theory of knowledge creation which is suited to MNCs, but rather that MNCs provide an interesting area for research, as they include extreme levels of diversity and complexity with regard to their internal social-identity frames and their interactions with diverse local networks. It is our contention that results from MNC studies can be used as a basis for examining fundamental questions, not only in the field of international business and management, but in organizational and strategic management theory in general.

Some may argue, however, that also large, complex national organizations that reach over wide national distances and encompass institutional and cultural differences may include diverse social-identity frames and temporary tension. While this is certainly true, we remain convinced that these differences increase dramatically as soon as we cross national borders and cultures (cf. Zander and Romani 2004; Ghemawat 2007) with significant consequences for knowledge creation. Of course, temporary tension between social-identity frames can also be found in national firms, but our argument is that the differences between the most diverse frames and the social complexity resulting from their interaction in the MNC are considerably larger, and therefore can potentially lead to more extreme exploration and sustainable competitive advantages. Compared to local firms, we would thus in the long run expect the MNC to be at an advantage based on its extreme knowledge variation and possibilities of knowledge combination and integration.

With regard to implications for managers and their actions, an obvious recommendation based on our reasoning is to continuously monitor and assess the number and diversity of intra-MNC social-identity frames in order to keep knowledge production afloat. Extreme centralization and closing down of semi-integrated units during periods of ‘streamlining an organization’ may at times be seen as a good idea, but may have dire consequences in terms of future knowledge creation and long-term survival. A second point is that managers should not be afraid of the sometimes disruptive temporary tensions between social-identity frames. Although they can be seen as creating inefficiencies, they are instead a sign of a healthy corporate climate and can be seen as signs of the creation of complex knowledge leading to future competitive advantages. However, one precondition is that the common corporate social-identity frame is intact, which may sometimes not be the case during, for instance, times of rapid expansion. A third point would be that the often-voiced worries that corporate headquarters is inhabited by less dynamic, aged managers who have been promoted as a result of homo-social reproduction should not be taken too seriously. Unless the top management starts to act in an excessively repressive and intolerant way, headquarters, in the wider context of the MNC, represents a conservative social-identity frame (heavily influenced by past and present dominant frames) which may prove very useful as a moderating force. It will force more peripheral entrepreneurial actors in other social-identity frames to prove themselves and their ideas, to the ultimate benefit of the firm as a collective that, in order to survive, continuously needs to embrace unproven novelty without risking its entire existence.

## Endnotes

- 1 See, for instance, Teece 1977; Mansfield 1980; Davidson and McFetridge 1985; Kogut and Zander 1993; Zander and Kogut 1995; Bresman et al. 1999; Gupta and Govindarajan 2000; Szulanski 2000; Subramaniam and Venkatraman 2001; Martin and Salomon 2003; Minbaeva et al. 2003; Song et al. 2003; Björkman et al. 2004; Buckley and Casson 2007; Minbaeva 2007.
- 2 See, for instance, Ronstadt 1978; Håkanson and Zander 1986, 1988; Pearce 1989; Zander 1997, 1999; Nobel and Birkinshaw 1998; Gassman and von Zedtwitz 1999; Gerybadze and Reger 1999; Granstrand 1999; Kuemmerle 1999; Asakawa 2001; von Zedtwitz 2004.

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