THE GREY AREAS OF KNOWLEDGE MANAGEMENT AND THE LONG SHADOW OF THE TACIT-EXPLICIT DICHOTOMY

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William Acar
Graduate School of Management
Kent State University [*]

Alan T. Burns
School of CTI
DePaul University

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A B S T R A C T

In its current state of early development, the field of knowledge management (KM) is increasingly characterized by a small number of recurrent dichotomies. Chief among these is the distinction between *tacit* and *explicit* knowledge that Nonaka and others seem to have borrowed from Polanyi's educational theory. The reverence this dichotomy is now accorded is considerable, and nearly every work written on KM seems compelled to pay it dues to it, or at least cite it. Stepping back to pose a useful if irreverent question, this working paper argues that the much cited tacit-explicit dichotomy may be overused; going further, we even raise the possibility that this dichotomy may be casting a "long shadow" on the field and is thus hampering its development.

[*] **William Acar,** Graduate School of Management, Kent State University, Kent, OH 44242 (330) 672-1156, fax: (330) 672-2448, *wacar@bsa3.kent.edu.*

1. INTRODUCTION

> "The evolutionary nature of human activity systems means that we cannot hope to find an *a priori* positivist theory of the firm as a knowledge-based quasi-object. Indeed, the pursuit of such a positivist theory requires the analyst to exclude by assumption the very dynamism that Schumpeter and Penrose sought." [Spender, 1996: 58]

The theory of the firm has been undergoing a major revolution. Traditional management theorists [e.g., Penrose, 1959; Hart, 1995] view the firm as resulting from the interplay of several natural resources. In sharp contrast, the decade of the 1990s has brought a plethora of works promoting the intangible, specifically knowledge-related, substructure without which no value-adding business activity could exist [e.g., Casson, 1997; Conner & Prahalad, 1996; Halal, 1998; Kogut & Zander, 1996; Lane & Lubatkin, 1998; Spender, 1996]. Moreover, as we enter the new millennium, the dominant thrust in the field runs counter to the previously accepted view that a purely incremental strategy of marshalling resources could efficiently react to environmental trends and signals. Conner and Prahalad [1996: 488] flatly state that:

> "Thus, contrary to some views, firm organization is more likely to be preferred on knowledge-based flexibility grounds, the more dynamic and uncertain is the competitive environment."

Similarly, Grant [1996a & b] takes the knowledge resource and its management as the basis on which to justify and manage the contemporary firm. Starbuck [1989] sees knowledge management as the best counter to managing from crisis to crisis. Some authors propose that the attention to knowledge management is the direct consequence of the on-going globalization of business [Boudreau, Loch, Robey & Straud, 1998]. Sanchez and Mahoney [1996] and Galunic and Rodan [1998] view information structures and knowledge management (**KM**) as a way to manage the modularity in product design and the recombinations of resources necessary to gain long-term flexibility. It is a *pro*active not a *re*active mode that will assist one's potential for Schumpeterian innovation. Drucker [1988] predicts the advent of the information-based organization. In all likelihood, attention to knowledge management promises to remain with us well into the next century.

When a particular topic reaches the forefront in many diverse fields at once, it is time to step back and reassess. KM is now at the forefront of several branches of management study, including but not limited to strategic management, managerial cognition, human resource management, information science and the study of organizational learning (**OL**). However, it is not clear at all that the same term *KM* means the same thing in these various sub-fields of the study of management. Not only do the research thrusts differ from field to field, their basic denotations and connotations vary. This working paper proposes to step back and revisit the fundamental aim of KM in order to gain some insight into the developmental thrusts that may reveal themselves most promising.

2. BACKGROUND: THE THREE OFT-CITED DIMENSIONS OF K.M.

One has but to thumb through any introduction to the history of our species to note that sociologists and historians are greatly preoccupied with capturing and documenting the evolution of knowledge. But the quest of the more recent interest emanating from business schools stems from an eminently practical concern: how to husband the booming IT technology and press it into the service of the modern far-flung corporation [e.g., Brown & Magill, 1998] by learning to design strategic information systems (**SIS**) [Segars, Grover & Teng, 1998]. The contemporary thrust is pragmatically driven; as such, it tends to be optimistic in orientation and vague in content.

The field is a pluralistic and confusing one, however, the same few characterizations are often used. Coincidentally, all three of these are dichotomous. Whether this is a mere coincidence or in the nature of nascent fields will become clearer in the course of the ensuing discussion. Let us take up in turn KM's three major apparent dichotomies.

2.1 The Aggregation Dimension

The classical MIS literature [e.g., Davis, 1974; Optner, 1965] distinguishes data from information. The Latin plural word *data* means "the givens" of a problem or a situation; it is used in modern languages to denote the facts and figures of a situation. *Information*, on the other hand, means more than a heap of numbers or a compilation of facts and figures. Ackoff [1962] does not provide directly for degrees in knowledge, only indirectly by implication with the degree to which a model may be tested for validity. However, a decade later, Ackoff and Emery [1972: 46] differentiate between signs or data and the information or meaning extracted from signs. The classical MIS literature similarly defines *information* as the interpretation of data sets for particular recipients.

Ackoff and Emery further distinguish knowledge from understanding. They point out that "knowledge" could mean the awareness of a fact or a state of affairs, or else the possession of a practical skill. They reserve the word "understanding" to denote the perception of causal connections. Collectively, these authors have indirectly laid down the groundwork for distinguishing degrees or levels in information or knowledge.

The next level up in the progression from data to knowledge is learning itself. Following Argyris and Schön's [1978] distinction between single- and double-loop learning, Fiol and Lyles [1985] define lower-level learning as consisting of rudimentary associations of behavior within a given set of rules. They posit that organizations can gradually move to a higher level of learning whereby they learn to adjust their rules and norms, not just specific activities or behaviors. This view of the two levels of learning raises the issue of whether to design static or dynamic strategic information systems. In the former case, near perfection is sought at the outset of the SIS design; in the latter, the SIS is set up to become self-improving over time [Lane & Lubatkin, 1998; Segars *et al*., 1998]. This dichotomy is further complicated by its interplay with the following two.

2.2 Declarative vs. Procedural Knowledge

Although common, this distinction is sometimes misunderstood and taken to refer to the epistemological debate between the various forms of "realism" or "positivism" with the various types of relativism (including pragmatism, phenomenology and post-modernism). However, this is **not** the true intent of the Simon's [1962] distinction between substantive reasoning as opposed to procedural logic. As captured in current works [Conner & Prahalad, 1996; Kogut & Zander, 1996], the idea is rather to distinguish substantive knowledge about the content of information, often called *declarative knowledge* by contemporary authors, from *procedural knowledge*. This latter sort is the knowledge about the structures, methods or procedures that contain or generate the substance or content of information.

This is becoming a basic and established distinction in the field. A word of caution, however. Many authors attempt to explain it by presenting it as a straightforward contrast between know-what and know-how, which seems to represent primitive notions of basic reasoning [Kogut & Zander, 1996]. However, Grant [1996b] disagrees with this interpretation as he identifies "knowing how" with **tacit** knowledge, thus crisscrossing concepts viewed as separate by most other authors. Given this divergence, it may be best to steer away from simplistic terms like "know what" and "know how", but hark back to the scientific and rational roots of knowledge.

Let us recall that Ackoff's [1962] treatise on the scientific methodology as applied to business instances follows the historical developments brought into business schools by applied mathematicians and logicians. As we study the rudiments of modelling and optimization for business practice, we are reminded of the basic distinction in elementary mathematics (or formal logic) between abstract variables or structures, and their possible contents or realized values. This distinction is now well established; each of us can conjure up examples and memories; and it avoids the difficulty of drawing *sharp* distinctions between such notions as "know how" and "know why", thus avoiding yet another conundrum.

The existence of several ways to give meaning to the declarative/procedural dichotomy attests to its utility. We should also presume that this dimension of KM is with us to stay. What would its practical implication be? Does this mean that we could envisage having, in each corporation, **two** separate strategic information systems (**SIS**), one for declarative information and another for the procedures?

Such a scheme is *prima facie* infeasible. The apparent unfeasibility of such a scheme suggests that the design subdivisions of an SIS do not have to be established according to each of the descriptor dimensions of the KM field. Consequently, the conceptually neat dichotomy between declarative and procedural information may be somewhat muddied and exaggerated in practice. In the reality of the design and operation of management systems, the procedural and substantive information kinds are best employed in an interactive manner. Consequently, this particular distinction between the substantive and methodological sides of knowledge is relatively manageable. Let us now turn to our final dichotomy, the one that presents major practical challenges and now hoards much of the conceptual space of KM.

2.3 Explicit vs. Tacit Knowledge

The most commonly used distinction found in the information science (**IS**) as well as the strategic literature is between knowledge that has been made explicit, and the knowledge that remains tacit. This distinction is now so ubiquitous that it has become an accepted postulate in the field. We seem to owe it to the initial influence of the educational philosopher and epistemologist Polanyi [1966] and, more recently, to the influence of Japanese authors such as Nonaka and Takeuchi [1995]; but many others have also adopted the idea.

Nonaka [1991] provides a straightforward managerial reason that correlates with the rising concern about human capital [e.g., Hitt, Bierman, Shimizu & Kochhar, 2001]. As corporations grow ever larger and top executives further and further removed from specific kinds of knowledge, they (and their human resource management staffers) become increasingly concerned with such mundane and basic problems as the retention of highly expert or competent employees. As recently argued from an agency theory perspective by Jacobides and Croson [2001], more monitoring does not always improve useful information flows. Lacking the ability to retain these sources of unique and inimitable competitive advantage over the long run, the savvy executives who fail to secure the employees *themselves* will endeavor to at least extract from them and retain some of their *knowledge*. It is this second aspect that is of direct concern in the SIS literature.

One of the reasons of the widespread diffusion of the distinction between tacit and explicit knowledge in the SIS literature is its importance to the segment of the literature dealing with technology transfer. For example, in their analysis of organizational vs. market mechanisms for knowledge substitutions, Conner and Prahalad [1996] are led to account for the degree of difficulty of transferring tacit knowledge. Similarly acknowledging the crucial distinction between the two main forms of knowledge, Lane and Lubatkin [1998] go further and study the structural configurations that lend themselves to increasing the recipient organization's absorptive capacity. This is a dimension of KM whose shadow looms large and that calls for reassessment.

3. ASSESSING THE TACIT-EXPLICIT DICHOTOMY

3.1 The Import of the Tacit-Explicit Dichotomy

A number of recent works make use of the tacit-explicit distinction. For instance, Osterloh and Frey [2000] present a 2x2 typology of combining motivational and knowledge requirement by cross-classifying tacit or explicit modes of knowledge transfer with intrinsic or extrinsic motivational levels. Cook and Brown [1999] distinguish passive "knowledge" from active "knowing". Hansen, Nohria and Tierney [1999] promote the diffusion of knowledge within companies as a managerial device to reflect its competitive strategy. Subramaniam and Venkatraman [2001] find that teams, whose members communicate frequently with overseas managers in order to acquire tacit differences among countries, have greater transnational product development capabilities.

It is intriguing, though, that a closer look often reveals that dichotomizing knowledge into opposite tacit and explicit categories is less enlightening than initially presumed. For example, the point regarding cultural differences raised by Subramaniam and Venkatraman [2001] is only tacit among business strategists unfamiliar with the international scene; however, researchers and managers familiar with corporate geography have already done much to bring such differences to light. Also, while the dominant thrust of the Harvard Business Review paper by Hansen *et al.* [1999] is to promote making all knowledge explicit, nonetheless it concludes with the more modest and unsurprising recommendation not to isolate KM in functional areas such as the HR or IT departments.

3.2 Some Puzzling Questions

In addition to the Osterloh and Frey [2000] article, a recent book by von Krogh, Ichijo and Nonaka [2000] focus on the conversion from tacit to explicit knowledge, and state that it requires intrinsically motivated group members committing to the group. The second work is actually a full-length book containing a multiplicity of case studies and examples. Von Krogh *et al.* repeatedly make the point that knowledge transfer is primarily a matter of ***ba***, or the creation of a favorable *context* through supportive attitudes and caring relationships. This seems surprising at first since an established tenet of motivation theory is that motivation has to be supported by ability in order to result in high performance.

Also, hasn't it become a postulate of communication theory that messages are usually *en*coded before being transmitted, and therefore that they need *de*coding in order to be understood by the receiver? How would the receiver fall under the good-feeling spell of the sender when it is mostly in **virtual** organizations that the need for "surfacing the tacit" is most acute [De Sanctis & Monge, 1999]? As pointed out by the emerging literature on dynamic capabilities [e.g., Winter, 2000] the decoding ability of receivers depends on their capabilities for being "stretched", not just whether they feel pleased to be immersed in a nurturing group climate. A partial explanation to this apparent contradiction of Nonaka's focus on reducing tacitness can be found in von Krogh *et al.* [2000: 198]:

> The company believes that "young staff members can be enlightened through interactions with customers when they have opportunities to participate in the activities in ***ba***" (Maekawa, 1995). Their bosses never give them specific instructions for interacting with customers. Rather, staff members are supposed to learn about a customer's enabling context for themselves through repeated visits there; to foster their own views of the world; and to mature enough to interact with customers professionally, creatively, and with care.

The authors go on to say that engineers at Maekawa's corporations are also strongly encouraged to develop an "ability to talk with customers". In this simple context of the transfer of basic knowledge about customer habits and needs, no special decoding ability may be required. However, such simple cases of application seem too prosaic to justify all the fuss made about making the tacit more explicit. The need for such transformation of tacit knowledge appears more needed in high-tech contexts – and this is the usual connotation conveyed by it. The text by von Krogh *et al.* [2000] contains many other additional examples; however, most of them are high-level and attempt to describe highly networked operations within large corporations. The authors' accounts are always enthusiastically positive, but they rely mostly on examples that are synoptic and lacking in technical detail. The problem with

approaching KM from an organizational development (**OD**) perspective is that it is like summoning the heavy artillery when snipers would suffice; in this case nasty high-tech knowledge transfer problems should be targeted, not basic administrative or marketing ones.

3.3 A Garbage Can Model?

Simon's [1945, 1962] view of rationality, even his concept of *bounded* rationality, has come under criticism. Nonaka and Takeuchi [1995] find the following shortcomings in his work. First, Simon overemphasized the logical side of human reasoning and decision-making processes. Second, he was mostly concerned with overt information and largely ignored implicit knowledge. Third, he viewed organizations as being reactive to their environment and downplayed their ability for proaction. Finally, he conceptualized information processing as only becoming effective with the simplification of real problems.

True enough: optimization theory is based on the simplified modelling of complex problems [Ackoff, 1962]. However, the "solution" that has come from some quarters, namely the adoption of the *Garbage Can Model* of Cohen *et al.* [1972] seems to be a remedy worse that the disease. While OD practitioners may need to focus on communication difficulties and shy away from distracting abstractions, the rest of us organization or strategy theorists need to have clear and cogent visualizations with which to wrestle. However, to the purists of modelling (whether of the implicit, mental or the explicit, quantitative variety) comparing decision processes to a garbage can hardly qualifies as a "model" of these processes. Clearly such a vague analogy cannot serve the purpose of normative modelling. And, while it may be acceptable for the purpose of descriptive modelling, it is just a handy but vague and oversold metaphor. KM authors recommend moving away from such loose characterizations – even when meant tongue-in-cheek, referring to garbage cans does not exude a pleasant fragrance.

3.4 The Real Challenge in Operations Management: Dealing With Mass Production and Routinization

A seemingly more subtle approach is provided by those authors that confront head-on the issue of routinization of work so as to allow the realization of the economies of scale that should be reaped when merging businesses consolidate their operations. Porter [1985] detailed study of competitive advantage brought to the fore the notion that it may not be a monolithic concept, but could be decomposed into its components. His model of the decomposition of a manufacturing firm's value-adding contribution into a *chain of activities* (which he calls the **value chain**), that can be analysed one at a time or in various combinations, serves the purpose of looking at operational efficiencies from a hard, detailed engineering perspective.

On the face of it, Porter's theoretical contribution facilitates the study of manufacturing firms to a larger degree than that of service institutions. Grant [1996a] argues that the manufacturing firm provides a clearer platform than a service organization for devising a theory of the firm. His argument could be reinforced by the fact that Porter's value chain description of a firm into a set of input, transformation and output activities seems inappropriate to the service sector. However, Stabell and Fjeldstad [1998] show how Porter's

value chain model could be adapted to the consulting and service domain. Grant [1998] may have overstated this limitation of the field. However, it may be safer to follow his example and continuing to focus on the **manufacturing** firm in this early stage of the development of a theory of KM for SIS design.

In its quest for realism, the work of Cyert and March [1963] documented for management theorists the contribution of the industrial engineering function and its gradual development of *standard operating procedures* (**SOPs**) in well-managed organizations. Unfortunately for conceptual clarity, the focusing needs of the human relations movement lent it to emphasize *ad hoc* cross-functional interactions and teamwork at the expense of procedural routines. Most current textbooks on the theory or principles of management hardly make any mention of SOPs. Whether this is due to a misinterpretation of the documentaries on the role of teamwork in "lean production systems" is a matter of conjecture.

Still, this silence about one of the most effective management tools may be about to be broken. A convincing technical analysis of the role that KM can play in manufacturing is offered by Sanchez and Mahoney [1996]. They show how KM can contribute to adaptive coordination through modularity, thus also contributing to greater effectiveness as well as flexibility. The more recent work of Adler and fellow researchers [Adler, 1999; Adler, Goldoftas & Levine, 1999] reconceptualizes the relation between flexibility and efficiency. While traditional management theory sees them as both desirable, but conflicting goals, Adler *et al.* show how a judicious use of routines allows effective restructuring of work tasks. As argued by Cyert & March [1963] and Mackenzie [1978], task structuring and routinization are requisite conditions for building into the overall system enough slack to allow it to weather the plethora of minor "emergencies" that routinely crop up. In addition to recalling this basic if less visible precept, Adler *et al.* go further by showing that one should also think of setting up ***meta*routines** for the purpose of monitoring and changing operating routines.

The work of Adler *et al.* marks a departure from Nonaka's emphasis on the manipulation of tacit knowledge at the individual level. Instead, it is a search for integrating managerial and engineering notions through an analytical use of KM. Their case study of the NUMMI joint venture between Toyota and GM exemplifies the detailed analytical mode that KM could undertake and the real benefits that would accrue in practice. Dave Lilly, the very successful CEO of the web-based corporation SiteRock, attributes his considerable success to SOPs combined with analytical and proactive planning [Elgin, 2001].

4. ORGANIZATIONAL LEARNING IN THE FACE OF THE TACIT-EXPLICIT DICHOTOMY

4.1 The forgotten Time Dimension

Let us step back and conjure up some explanation. A number of authors attribute the sudden emergence of KM as a "hot topic" in the 1980s to the visibility of Japanese authors such as Nonaka, Takeuchi and others. However, the causality in this case is ambiguous; it could well be that they themselves "jumped on the bandwagon" of a subject whose time had

come. The 1980s were a period in which various Asian competitors had *visibly* become threats to the established Western industrial establishments. It became important to find out the causes of their success – and counter it. Hence the sudden Western interest in teamwork, quality circles and continuous improvement. In addition, both the Asian and Western consultants happen to operate in the wake of the stir created by Polanyi's educational theory, particularly his distinction between tacit and explicit knowledge. As a result, this distinction has become a tenet of KM. It resurfaces constantly.

As mentioned at the outset of this paper, the highest form of knowledge may be organizational learning (**OL**). As a matter of fact, concurring with Adler but pushing the envelope even further, Feldman [2000] proposes that SOPs could themselves become a source and a vehicle for OL and continuous improvement. And improvement implies change over time; but the time dimension *per se* has received scant attention in the KM literature. Fixated as it is on rendering the tacit explicit, it focuses diligently on the way the way simultaneous interpersonal communications may be aided by the right ***ba*** and attitudes. However, it seems to show little interest in learning over time as opposed to just transferring or even pirating knowledge by hook or crook in a static organization. To the *caveats* stemming from the above discussion, Fiol and Lyles [1985: 804] add that:

> "Much of the individual learning theory that deals with repetition of speech and motor skills does not characterize organizational learning, at least at the strategic level, in situations that are mainly unique and nonrepetitive."

This may not be surprising in view of the lack of attention generally paid to the time dimension in the contemporary management literature. The common thrust of incrementalists tends toward expending more effort building flexible and fast-response organizations than managing the time dimension with an SIS [e.g., Hitt, Keats & DeMarie, 1998; Volberda, 1996]. Even from this standpoint, neither the organization nor its learning should be conceived as static – or else we end up with a modern version of Zeno's Paradox. If knowledge really was of a binary nature with only two possible states, tacit and explicit, with *no* shades of partial knowledge in-between, by what mechanism would it be possible to ever transfer **any part** of one's totally tacit knowledge to anyone else? The tacit-explicit dichotomy flies in the face of every student and every teacher's experience of the learning process as a series of *graduated* steps whereby mostly tacit knowledge is *gradually* made more explicit to some learners…. Interestingly enough, Nonaka and disciples describe instances of this very process, all the while promoting primarily a dichotomous rather than a continuous view of knowledge transfer, whereby the two extreme poles (the totally tacit and totally explicit) may possess but a fleeting and mostly symbolic existence!

4.2 To Be or Not to Be … Polanyi?

Moreover, there is a fundamental paradox in that institutions most geared at the management of **existing** knowledge may be poorly equipped for the discovery or development of **new** knowledge. Intriguingly, Nonaka talks about opening up the black box of the (presumably current) tacit knowledge yet he uses such titles as "The Knowledge-*Creating* Company". Some of the extant research (among which this very conference) aims to explore this paradox.

The above considerations lead us to contemplate the seemingly unthinkable: is it just possible that our slavish adulation of Polanyi and our attempts at force-fitting our template of knowledge transfer into his contrasted views creating more difficulties than resolving? In his work, Szulanski [2001] differentiates the core meaning that one intends to transfer from the templates used for the purpose. Instead of focusing on the management of *organizational* knowledge, executives and their consultants seem to only aim at mundane case-specific issues of employee retention. Worse still, under the pressure of practically motivated consultants, a large segment of the business literature is devoted to issues of milking the creative employees of their tacit knowledge and siphoning it to colleagues less capable of "hardball" bargaining with top management….

This rather trivial short-term managerial interpretation of Polanyi's thought is casting a long shadow on the development of KM as a discipline. Never mind that the basic question is not being addressed. Never mind that most educational theories have been developed to explain *child* development. Never mind that the tacit-explicit dichotomy leaves out all the shades of grey in between. It may be difficult for inarticulate craftsmen or managers to express their tacit knowledge. If tacit knowledge were truly incommunicable, then science goes out the window. Those who develop theories instead of over-preoccupying themselves with the pedagogy of transfer already know that subtle concepts cannot be transferred whole. Consequently, they learn to build conceptual systems whereby the development of a terminology advances in parallel with the technology of its application [e.g., Ackoff, 1962].

Also never mind that information scientists are exploring firms' technical, managerial and strategic information subsystems. They are researching how to meld man-machine capabilities of capturing, storing and channeling knowledge to improve performance. We propose that researching how to link these subsystems may allow KM theorists to avoid the inhibiting shadow of the uninspiring tacit-explicit typology. Small-group discussions at the London conference on OL and KM should provide some food for thought on how to break KM free from the legacy of a constraining paradigm.

4.3 Corporate Knowledge vs. Public Science

Paradoxically, the most basic question trailing into the next century is one that no one seems to be asking. Even though our unusual species has spent millennia developing knowledge as a communal and societal enterprise, embodied in recent centuries in the establishment of universities and research laboratories, few authors explore the connection of KM to traditional classical knowledge and science. Yet, is it not **the** major question? Why should business firms have to run a separate KM stream that parallels the development of knowledge and science as the major competitive endeavor of advanced societies? Since technology can be learnt, why would firms want to undertake it when they could delegate this onerous task to the collective effort of their nation?

We should recognize that society's quest for knowledge predates management theory, and is as old as civilization or culture. In his book with R. Lewin, *Origins Reconsidered* (subtitled "In search of what makes us human"), the famed anthropologist Richard Leakey [1992] describes our evolution from the early hunters-gatherers in terms of the gradual development of communal and societal knowledge. The same phenomenon can be observed

in offerings of a more populist stripe. For instance, Flexner's [1995] compilation entitled *The Optimist's Guide to History* reads just like a log of the various discoveries and inventions through the ages.

Contemporary business research points to the importance of social intellectual capital for serving as an infrastructure to specific product-oriented knowledge [Nahapiet & Ghoshal, 1998]. As the giant multinational corporations (**MNCs**) now dwarf most governments, they often become the torch-bearers and repositories of technical as well as business knowledge. No longer entrusted with the sole *application* of knowledge, MNCs are now expected to contribute to the *discovery or creation* of it [Marcus & Geffen, 1998]. This brief journeying back toward the roots of corporate knowledge leads us to ask ourselves whether today's SIS design should differentiate between commonly available knowledge and the specialized knowledge firm needs for its future.

5. SOME FUNDAMENTAL QUESTIONS IGNORED BY THE TACIT-EXPLICIT DICHOTOMY

5.1 Static or Dynamic SI Systems?

Clearly, authors favoring the flexible organization and promoting KM as a means to enhance flexibility [e.g., Conner & Prahalad, 1998; Galunic & Rodan, 1998; Lane & Lubatkin, 1998; Lado & Zhang, 1998; Ross, 1994; Sanchez & Mahoney, 1996; Volberda, 1996] are now in the majority. Several authors point out the dynamic and constantly evolving nature of knowledge [e.g., Malhotra, 1997]. Simple analogies with the human brain and nervous system [Beer, 1972; Higgins & Dennis, 1999] no longer suffice. The conclusion generally derived therefrom is that dynamic SI systems are far preferable to static SISs.

First and foremost, a business or even nonprofit organization has to survive today's challenges to even be in the running for tomorrow's. And yet, the lack of adaptation may spell its death knell sooner than later, because a reputation for stodginess may raise its cost of capital or impede its cash-raising ability – this view is implicit in the knowledge-based theory of the firm as articulated by Grant [1996a & b]. The issue is *not* simple; as stated the dilemma is real unless one reformulates the question.

The dichotomy between purely static and purely dynamic SI systems is somewhat of a false dichotomy. None of the two pure types, the static **or** the dynamic, could exist in practice in anything resembling an unadulterated state. First off, in order to be initiated, a currently static system must have been "dynamic" during the transition period in which it was being built, otherwise it would not have come into being. Conversely, a dynamic system aiming at being used in practice has crystallized periodically into more stationary states, or else it would always be destabilizing to its host institution. An analogy with the impact of inflation on an economy indicates that, here too, too much of a good thing is counterproductive. Real SI systems tend to hover in between the extreme cases of permanence of design and chaotic change.

5.2 Some Additional Dilemmas?

The Polanyi-Nonaka tacit/explicit dichotomy has found its way in nearly every approach to KM, regardless of the disciplinary perspective. It is casting a long shadow on the field that could become stifling. However, a field's paradigm becomes "etched in stone" and difficult to undo [Kuhn, 1962], especially when it is interconnected with other disciplines. A few related considerations for discussion come to mind:

- The general assumption is that organizational systems should continue acquiring, transferring and hoarding knowledge. Would this not result in management misinformation systems as pointed out by Ackoff [1967]? Ramaprasad and Rai [1996] put forth the view that a cycle in which knowledge ***generation*** and ***dissipation*** are balanced is more functional than what is commonly advocated. A particularly painful twist of the knife results from the accompanying realization that the imagery of knowledge "transfer" may be inappropriate, and even misleading [Attewell, 1992: 6].

- In this regard, shouldn't more research be devoted to theorizing the relative roles of the various mechanisms of OL? Among others, Huber [1991] and Crossan, Lane and White [1999] have made some inroads in this direction; more research in this area would be justified. One of the avenues might be whether the distinction of Cook and Brown [1999] between the static view implied by the term "knowledge" and the active stance denoted by "knowing" is indeed useful – or will it end up being as overdone as the tacit-explicit contrast has been?

- Everyone talks about knowledge as a basic notion, a *primitive* or fundamental concept that bears no telling. Well, the way that the "knowledge" in managerial KM differs from the usual academic disciplines and the scientific fields of research is not made clear. Most authors seem to relish vagueness in this regard; consequently, more reading does not translate into greater reader knowledge!… Particularly welcome in this regard are the attempts of those authors [e.g., Kusunoki, Nonaka & Nagata, 1998] who fight the lonely battle of trying to provide a conceptual representation of organizational knowledge.

- Finally, as posed a full generation ago by Armstrong and Eden [1979], should the primary focus of empirical research on KM be more on team communications; or rather on knowledge representation and transfer devices such as the use of some of the extant varieties of *cognitive* or *causal mapping* devised and promoted by Kelly, Bannister & Fransella, Maruyama, Eden and coauthors, Huff, Klein, Acar and others?

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