Nonaka's Subjectivist Conception of Knowledge in Corporate Knowledge Management

Juup Essers & Jos Schreinemakers

Rotterdam School of Management, Erasmus University of Rotterdam, the Netherlands

Mr. Juup Essers has an M.A. in philosophy and M.Sc. in business administration. He is presently working on his Ph.D. as an assistant professor in the Dept. of Methodology and Ethics of the Rotterdam School of Management, Erasmus University. His research focuses on incommensurability and its effects on organizing knowledge within organizations.

Dr. Jos Schreinemakers has an M.Sc. and Ph.D. in business administration. He is presently an associate professor at the Rotterdam School of Management and is the director of the ERASM Center for Knowledge Management. He is a founder of the European Center for Knowledge Management and the initiator of the Corporate Group, a Dutch conglomerate of organizations that collaborate on pre-competitive research in knowledge management. He has published extensively on knowledge-based systems and knowledge management.

Essers, J. and Schreinemakers, J. (1997). **Nonaka's subjectivist conception of knowledge in corporate knowledge management.** *Knowledge Organization* 24(1). p.24-32. 11 refs.

ABSTRACT: In recent years management and business studies have witnessed the emergence of a new field of activity, named corporate knowledge management (CKM). The primary goal of this management discipline is to enhance and improve the use of knowledge as a corporate resource in organizations. Theoretical and practical initiatives in this area of management, however, have met with some difficulty regarding the conception of knowledge that should guide these efforts. This paper critically examines the contribution of Nonaka (1994) to this conceptual problem. While we support Nonaka's reasons for choosing a subjectivist epistemology in this managerial context, we argue that he is seriously misguided with regard to the philosophical and managerial ramifications of his choice. Consequently, we doubt whether Nonaka's views can serve as a successful paradigm for corporate knowledge management.

1. Introduction: The Emergence of Corporate Knowledge Management

Ever since the rise of the modern market economy it has been generally recognized that knowledge and information play a vital part in the coordination of market exchanges between buyers and sellers. In fact, it has been a virtual axiom of classical economic theory constitutive of the very rationality and moral superiority of the system, that market equilibrium can only be reached if and when all parties involved share full knowledge of available products, prices and market developments. To some extent at least, it has been the axiom-like status of this evidently contrary-to-fact 'full knowledge'-postulate that has prevented the recognition and emergence of corporate knowledge management (CKM) as a management discipline in its own right, reflecting the central importance of knowledge as an independent production factor next to (physical) labor, capital and natural resources.

On the other hand, the long standing history of industrial research, patent law, trade-secret acts and the like proves how much managers in the practical and day-to-day conduct of business have been aware of the strategic advantages to be gained from having a distinctive knowledge lead over one's competitors. But until recently this awareness never spurred the same full-scale and systematic inquiry into the principles of acquiring, maintaining and deploying the intellectual assets of a company, as has been undertaken in the fields of financial, production and labor management. In fact, taking a broad view of corporate knowledge ranging from high-grade technological expertise through a variety of organization and management theories and principles on to the situationally determined and local experiences embodied in specific company practices, recent estimates would have it that of the available knowledge in an organization often no more than one-fifth is effectively used

(Stewart, 1994), making knowledge ostensibly the worst managed corporate resource ever.

Add to this that in our day and age, mainly as a result of the information revolution, the explosive growth of the service sector and increased innovation-based competitiveness in a globalizing economy, knowledge accounts for at least three-quarters of value-added in the transformation of raw materials into a marketable product, and it seems obvious that something should be done about the mismanagement of this vital resource. Hence comes Drucker's claim that management as a profession essentially boils down to nothing less than the responsibility of effectively applying and reaping the benefits of knowledge. All but turning the concept of knowledge management into a tautology, Drucker even announces a new step in the evolution of post-industrial society which he calls the 'managerial revolution' and of which the central achievement will be *the application of knowledge to knowledge* (Drucker, 1993).

Given this awareness and the somewhat seductive rhetoric accompanying it, it is however far from clear as yet how this newly recognized and evidently important corporate resource should be managed. Obviously, if you want to manage something you should at least have an idea on the nature of what it is you are managing. Initial conceptions of CKM in this respect have tended to adopt a rather encyclopedic conception of knowledge, in which knowledge is somehow immediately recognizable as such and can be gathered, disseminated, coordinated, deployed and even discarded in a consciously controlled and systematic fashion. Thus knowledge-induced value-added in intra- and interorganizational value-chains and value-networks presumably could be optimized efficiently:

- by the development of information networks to facilitate communication and knowledge sharing,
- by education and training to create a 'learning organization' that is both technologically and organizationally innovative, and
- by formalizing expert knowledge into automated knowledge systems to reduce dependence on individuals that might for whatever reason leave an organization and thus pose a direct or indirect threat to its competitiveness.

But many of these efforts are not living up to their expectations. It seems that knowledge is far more elusive and intangible than the encyclopedic conception of it allows. Not only do companies find it hard to keep track of the knowledge they have at their disposal, there is also the problem of the determination of its quality and practical value. In both contexts top-down control of the knowledge resources of an organization seems a utopian ideal. Thus, management can hardly be expected to control with any measure of precision which knowledge and beliefs will be operative in the organization at any moment in time. What individuals choose to believe as well as what they tend to forget, disregard or reject, moreover, to a large extent depends on historical and practical circumstances and on the consistency of these beliefs with the knowledge already adopted or internalized in individual or organizational practice. Much the same holds, finally, for assessing the usefulness or practical value of particular knowledge claims.

Ikujiro Nonaka, who is currently regarded as one of the prime scholars of CKM, has challenged the encyclopedic conception of knowledge in this discipline, arguing that it takes knowledge too much as something that is objectively given and that can only be acquired passively by an organization from outside, the organization itself only being an information and knowledge *processing* but not *producing* system. To cope with the problem of continuous innovation, however, organizations need to take a far more active attitude towards knowledge creation and development which, according to Nonaka, entails a conception of knowledge that is basically subjective in nature. Furthermore such a subjective conception of knowledge allows for a better understanding of its intangibility, as it relates the recognition and validation of knowledge to an often tacit commitment to individual value systems and wider socio-cultural practices. This active, subjectivist account of knowledge Nonaka has elaborated in his *'dynamic theory of organizational knowledge creation'* (Nonaka, 1994).

Nonaka's epistemological views, however, are not without problems of their own. After having examined his theory more closely, we will argue that Nonaka in one respect takes his subjectivism too far, while in another respect he refuses to take the consequences it implies. As a result, it is doubtful whether Nonaka's conception of knowledge will serve as an adequate paradigm for CKM. Before reviewing Nonaka's theory, however, we will first discuss the important distinction between subjective and objective knowledge underlying it.

2. Knowledge: Subjective versus Objective

One of the most important problems a new research area faces, is to devise a clear-cut definition or demarcation of its field of activity that allows the identification and articulation of relevant problems that can consequently be worked at effectively. In the context of scientific research generally it was Kuhn (1970, p.4-5) who noted in this respect that:

> effective research scarcely begins before a scientific community thinks it has acquired firm an-

swers to questions like the following: What are the fundamental entities of which the universe is composed? How do these interact with each other and with the senses? What questions may legitimately be asked about such entities and what techniques employed in seeking solutions?

Successful sets of answers to questions like these constitute what, since Kuhn, is generally being referred to as a paradigm. Thus a paradigm provides a community of practitioners with a shared perspective on its field of expertise, which promotes an efficient professional practice by lubricating the communicative and institutional frameworks and arrangements underlying it. Of course, in this sense the concept can also be applied to professional communities outside the field of pure science, be they communities of accountants, lawyers, librarians, managers or whatever. Here too, effective professional practice depends on the adoption of a taxonomy in which basic problems and professional insights are expressed and in line with which preferred working methods, operating procedures and standards of achievement are established.

For CKM, evidently, the *'fundamental entity'* on which some of these basic answers need to be acquired is knowledge, of which the nature and quality have traditionally been the subject matter of epistemology and the philosophy of science. It would seem obvious, therefore, to turn to these fields of philosophical inquiry for guidance. But in seeking to clarify the problematic of CKM by consulting these branches of philosophy, it is important to realize from the start that both fields are to some extent at cross-purposes. Where modern philosophy, for instance, has been primarily concerned with the analysis of pure science from an intellectual or cultural perspective, and more particularly even with an adequate explanation of the success of the natural sciences, CKM is primarily directed towards the pragmatic objective of finding principles that may ensure the successful application and utilization of knowledge, an objective that has not been at the forefront of modern philosophical attention.

A second difference between the approaches of philosophy and CKM to knowledge that is especially important here is that the responsibility of CKM cannot be restricted to knowledge that is of an incontestably scientific nature but must extend as well to all alleged knowledge a company accepts consciously or unconsciously as a capacity for corporate action. Here we have seen Nonaka emphasize the active and subjective nature of knowledge – a choice that is prompted by the special problematic of CKM as opposed to philosophy and that would require therefore an alternative paradigmatic conception of knowledge. CKM has to work with the actual beliefs and commitments of organization members, whether or not they are true or scientifically respectable.

This difference in orientation is well expressed in Karl Popper's much debated distinction between subjective and objective knowledge, which he has elaborated in his three-world ontology (Popper, 1972). In order to clarify the fundamental aim and objectives of epistemology Popper distinguishes three different worlds or universes. The first world is the world of physical objects and events. This is the world we are familiar with through our senses. Then, there is the second world of mental states or states of consciousness. This is the world of the concrete thoughts and beliefs that predispose people to act in a certain way under particular circumstances. Finally, Popper distinguishes a third world, a world that is not built up out of actual thoughts, but out of their *objective content* irrespective of any person actually having or having had such a thought. World 3 thus contains theoretical systems, problems, hypotheses and critical arguments to support some theoretical claim. According to Popper the difference between world 2 and world 3 is of the utmost importance to epistemology. It is his claim that epistemology should not be directed at the explanation of how people (scientists or professionals in particular) come to adopt certain theories or gain certain convictions (which is a world 2 issue), but on questions relating to the objective structures and evolutionary development of theoretical problems and systems. According to Popper it is far more illuminating to study the *product* of professional practice than the *production methods* used in this practice, just as for a biologist the study of, for instance, a spider's web can tell us much more about the spider's behavior than the other way around. Popper in this manner, as he has also done in the exposition of his falsificationist theory of science, stresses the importance of the justification context of scientific inquiry as opposed to the context of discovery.

In CKM, on the other hand, the primary objective lies in managing the way people handle knowledge in concrete practical situations and for Nonaka especially in ways of organizing the knowledge *production* process in a company. Obviously, from this perspective the focus is much more on the context of discovery and presumably the 'context of application' of knowledge in practical circumstances. In terms of Popper's three-world ontology therefore, CKM does not primarily focus on knowledge as the objective, propositional content of thought irrespectively of persons actually holding those thoughts (world 3) but on knowledge as a subjective mental state of persons having certain beliefs, which predispose them to act in certain ways (world 2). From a practical knowl-

edge-*management* point of view this move seems understandable enough. However, as Tsuchiya (1995, p.3) has pointed out, the knowledge creation process in an organization needs to be channeled by a number of checks and balances to ensure that it does not become too vulnerable to producing 'faddish responses' to the needs and challenges with which it is confronted. It seems, therefore, that 'world 3'-elements like knowledge-justification criteria and critical arguments inevitably ought to play an important part in CKM as well. How Nonaka tries to come to grips with these elements, will be examined in the next sections.

3. Nonaka's 'Dynamic Theory of Organizational Knowledge Creation'

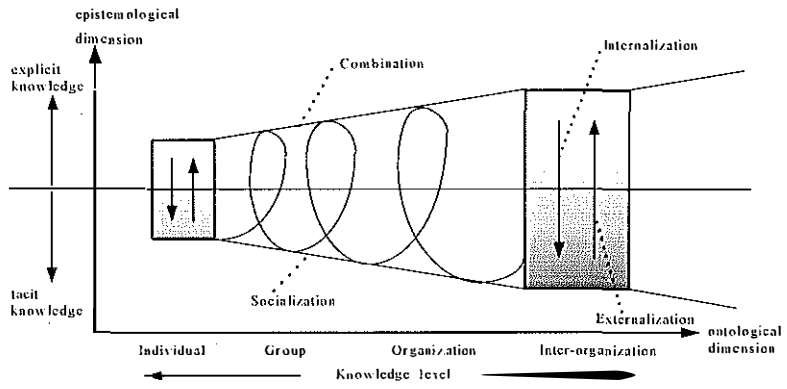
In his 'dynamic theory of organizational knowledge creation' Nonaka adopts a subjectivist approach to corporate knowledge to cope with the problem of technological and organizational innovation, with which business organizations around the world are increasingly confronted. Nonaka takes innovation in both of these areas as a prime example of corporate knowledge creation on which companies have become more and more dependent for their survival in the global competitive environment. In this environment the last couple of decades have shown how the economic life-cycle and the required time-to-market of new products have rapidly shortened to the point where R&D- and innovation departments can hardly keep up with the pace of change. This is one of the main reasons why organizational knowledge creation requires active management efforts to ensure increased efficiencies of the innovation cycle.

To describe the process of innovation Nonaka introduces a spiral model of organizational knowledge creation that is anchored on a theoretical distinction of two basic dimensions of knowledge management. Firstly, Nonaka defines an epistemological dimension of CKM, in which he adopts the distinction of the Hungarian philosopher Polanyi between explicit and tacit knowledge as the two basic forms in which knowledge can be operative in an organization. Next to this an 'ontological' dimension is proposed, in which Nonaka subsequently tries to capture the communicative interaction requirements between individuals and groups of people, which are needed to develop new knowledge and generate new ideas. To actively promote and manage the knowledge creation process in organizations both dimensions have to be taken into account. In general, Nonaka takes specific organizational practices and dominant perspectives on its environment to be determined largely by the tacit convictions and commitments of organization members (epistemological dimension). New ideas and concepts that emerge within an organization to a significant extent will be rooted in these tacit commitments. The development and articulation of these ideas, however, require constant dialogue and communicative interaction between individuals and groups within and around the organization (ontological dimension). Successful innovation requires active management of this interaction.

More specifically, Nonaka's model presumes that innovative knowledge creation can be described as a cyclical process in which knowledge creation is a process involving four conversion/transmission modes: from explicit to explicit (combination), from explicit to tacit (internalization), from tacit to tacit (socialization), and from tacit to explicit (externalization). Thus knowledge combination, which in itself can lead to the development of new products, work procedures or organizational structures by bringing knowledge from different parts of an organization together, takes place at the explicit level. Combination is based on the exchange of articulated (usually documented) knowledge that can be reconfigured to produce new insight. On the other hand, socializing people into a new organizational culture generally takes place at the tacit level. Moreover, organizational and strategic innovation as a rule require the resocialization of employees into new work routines, operating procedures and organizational structures. What makes these kinds of innovation and change so difficult is that socialization is typically based on the sharing of experiences that are often only tacitly acknowledged as part of organizational practice. Usually they are only transmitted and communicated subconsciously or informally, which makes them notoriously hard to manage.

Internalization and externalization are inverse modes of interaction between tacit and explicit knowledge. Thus internalization according to Nonaka bears a strong resemblance to traditional notions of individual or collective learning that have been elaborated in management development and organizational learning theories. Internalization is needed for knowledge to take hold in the working practices of organization members. Nonaka claims that in management literature in particular the process of externalization as a means to organizational knowledge creation has not received enough attention, while it is critical to the organizational innovation process and the ability of a company to proactively interact with its environment. These four modes of knowledge creation and transmission and their spiral interaction can be visualized as follows:

Figure 1 Spiral of Organizational Knowledge Creation



(source: Nonaka 1994, 20)

Nonaka's central message in expounding this theoretical framework is that for organizations to be innovative they need to actively tap and mobilize the tacit knowledge resources of their members by externalizing them. This process of externalization, according to Nonaka, requires the commitment of individuals to share their experiences and confront their interpretive frameworks (mental models or paradigms) with one another in multi-functional 'self-organizing teams'. Within these teams new ideas arising out of this con-frontation of mental models can be conceptualized into a model by use of metaphor and analogy. These ideas can then be acted out and developed in a process of 'crystallization', through which new products or organization concepts are refined and tested on their material realizability and applicability by various departments in the company. Crystallization thus constitutes an important aspect of the ontological dimension in the management of organizational knowledge creation.

The concept of crystallization is especially interesting as well, however, because it comprises the function of 'knowledge justification'. This function Nonaka (1994, p.26) conceives of as "the process of final convergence and screening, which determines the extent to which [new] knowledge ... is truly worthwhile for the organization and society." Most significantly, Nonaka claims that the quality standards used to test knowledge in organizations "generally include cost, efficiency, profit margin and the like" as well as more aesthetic and "romantic" criteria related to a company's vision of the future and its own development (p.24). Nonaka considers the determination of these standards "a highly strategic task of company leaders", ultimately enabling "a truly 'humanistic' knowledge society beyond the limitations of mere 'economic rationality'..." (p.34).

Skipping over the rather overstrung ideological promise of CKM that Nonaka offers us in these considerations, it is here that we start to wonder about the practical significance and theoretical value of Nonaka's model. Two questions specifically come to mind. Firstly, while the commitment and willingness of organization members to share their experiences and confront their mental models with one another may be a necessary condition for generating new ideas, it hardly seems a sufficient condition. What will happen in these 'self-organizing teams' if and when some members are committed more to some of their own (tacit) convictions than to finding consensus on new product or organization concepts? This possibility of conflict seems hardly far-fetched and actually occurs quite regularly when people from different professional or cultural backgrounds are required to solve complex (organizational) problems. Secondly, in the context of knowledge justification it is surprising that no mention at all is made by Nonaka of any of the usual criteria adopted in science to establish the truth or validity of knowledge claims (like consistency, scope, explanatory power, empirical testability, etc.). Has he simply taken these for granted or are we to believe that these criteria do not matter as much to *corporate* knowledge creation as they do in scientific knowledge production? How then do these scientific criteria relate to the ones Nonaka has mentioned? Can they be overruled by criteria like profitability or return on investment? Given the day-to-day conduct of business this does not seem an overly skeptical question.

In the next two sections, therefore, we will focus on these problems more closely. As we will argue, they are linked to two central issues that are directly related to Nonaka's subjectivist conception of knowledge, to wit the problems of incommensurability and

of cognitive relativism. The attraction of subjectivism for CKM, as mentioned above, undoubtedly resides in its recognition of the active and concrete involvement of persons in the constitution of their convictions, with which managers will have to deal in their organizations. Philosophically this is emphasized in the conventionalist view of knowledge, when it states that it is both practically impossible and logically incoherent to want to shift the responsibility for the truth of our knowledge entirely to the object of inquiry (cf. Kunneman, 1986), as our impressions and experience of the outside world are necessarily prefigured by the conceptual schemes we use to articulate them. This entails, however, the relativity of knowledge to particular practices or forms of life (Wittgenstein, 1953) and the concomitant possibility of the incommensurability of interpretative frameworks or paradigms (Kuhn, 1970). Knowledge justification and the standards involved in it are affected as well by this relativity, but as we shall argue, this is no excuse for arbitrariness.

4. Knowledge Management and the Problem of Incommensurability

Contrary to popular belief Kuhn's major contribution to the philosophy of science was not the introduction of his notion of a paradigm or conceptual scheme, which was already recognized as an important element of scientific structures and of knowledge development by philosophers like Carnap and Quine in the beginning of the fifties. What made Kuhn's elaboration of the concept so important and revolutionary, was his claim that different paradigms by their very nature are incommensurable. Kuhn introduced the concept of incommensurability into the philosophy of science to denote the special relationship between rivaling paradigms. Literally the concept refers to a lack of common standards of measurement. In this sense the concept was originally used in classical Greek mathematics to designate the mutual immeasurability of the lengths of the side and the diagonal of a square, there being no unit of measure in which both lengths can be fully expressed. Ever since Kuhn transferred the concept to the context of the philosophy of science, it has been one of the hottest and most debated issues in the field. In its application to paradigms or interpretative frameworks, according to Kuhn, the notion involves three related dimensions.

Firstly, there is a *perceptual* dimension. As Kuhn has noted regularly and with strong emphasis, adherents of rivaling paradigms or interpretative frameworks act as if they are living in different worlds. When looking from the same point in space to the same objects they seem to be seeing different things. And scientists who in their professional careers at some time have experienced a major break-through in their field of expertise, for all practical purposes seem to practice their trade in a different world after such a 'scientific revolution' has occurred. Their outlook on reality has changed so dramatically that they cannot but conclude that the world is not longer as it once was (Kuhn, 1970, p.149f.). Secondly, from a *linguistic* perspective, adherents of different paradigms when debating their differences of opinion, do not seem to be able to communicate fully what their differences are. While often using the same words, it seems as if they are speaking different languages and are consequently talking through one another (Kuhn 1974, 231f.). This aspect, and especially the logical presuppositions of translation between conceptual schemes have received much attention in philosophical debate. Thirdly, there is an *axiological* dimension. Here the concept of incommensurability in its most literal meaning indicates that the scientific values (criteria or standards of assessment) involved in paradigmatic constellations may differ significantly in their application and priority (cf. Kuhn, 1977). Between rivaling paradigms, that is, there is a lack of common standards or a lack of consensus on the exact application or priority of such standards to judge the relative cognitive and practical merits of these paradigms.

In this axiological context Kuhn specifically mentions the inadequacy of a criterion like 'empirical testability' to decide which of two rivaling paradigms is to be preferred (Kuhn, 1974, 260f.). According to Kuhn there 'are' no neutral or objective 'facts' or paradigm-independent observations on which such a decision could be founded and that could be determined without the adoption of a language that in its semantic structure by definition carries specific theoretical commitments. More generally, while there may be wide agreement in science on the relevance and legitimacy of scientific standards like testability, precision, scope, elegance and the like, there are bound to be differences between paradigms in the way these standards are applied in concrete cases or are set in a ranking order of importance. Therefore Kuhn (1974, p.262) insists that in this sense scientific assessment standards inevitably function as values and that each paradigm tends to define its own self-serving set of such standards. Thus, as Kuhn (1970, p.94) observes: "When paradigms enter, as they must, into a debate about paradigm choice, their role is necessarily circular. Each group uses its own paradigm to argue in that paradigm's defense."

This self-serving paradigmatic bias which is inherent to the problem of incommensurability is not caused by ill will or irrational stubbornness on the part of those defending their convictions. As Kuhn has noted, sticking to one's deeply held convictions

when the majority of a professional community has been 'converted to a new creed' does not *ipso facto* make you unprofessional. While adopting a new paradigm or interpretative framework may have distinct advantages, inevitably there will be disadvantages as well. There will be good reasons to adopt a new conceptual scheme, but there will also be good reasons to stick to what you know. The problem of incommensurability therefore does not so much imply a *lack* of good reasons, but an *over-abundance* of them. In this sense incommensurability is not the product of irrationality, but of rationality itself.

Given Nonaka's subjectivist approach to knowledge in which he regularly refers to Kuhnian considerations and concepts, it is surprising that he completely ignores the issue of incommensurability between paradigms or mental models. This is especially regrettable for two reasons. Firstly, as Kuhn (1970) has pointed out, viewed diachronically, fundamental break-throughs in science by their very nature involve incommensurable conceptual frameworks. In fields like R&D-management, human resource management, management learning and theories of organizational change, moreover, this is generally recognized. Concepts like double-loop learning, the play-game distinction, first- and second-order change and the distinction between innovation versus improvement are all derivative of and pay tribute to Kuhn's conception of revolutionary shifts from one incommensurable paradigm to another. Secondly and more importantly, viewed synchronically, Nonaka completely overlooks the possibility of communication breakdowns and conflict between the members of an organization due to the clash of incommensurable paradigms or frames of reference. As such incommensurability is not just an interesting philosophical problem, but constitutes a serious practical problem for organizations and for CKM in particular.

Thus, for instance, incommensurability can manifest itself forcefully when individuals from different professional backgrounds within an organization prove to have diverging views on opportunities for innovation, on the solution of organizational problems or even on the nature of organizations as such. As an example we only mention the traditional areas of conflict in business organizations between production and sales departments or between finance and logistics. Likewise, the previous decades have shown deep disagreements within organization theory itself on the nature of organizations and of organizational development and change. The point we want to make here is that there are no *prima facie* reasons to suppose that such disagreements would remain within the boundaries of academic debate never to surface in the practice of organizational reality. Finally, in our ever expanding global economy, multinational organizations in particular are confronted on a daily basis with potentially schismatic cultural differences that need to be responded to.

Each and every one of these problems can be seen as real manifestations of incommensurable paradigmatic backgrounds, and it is disappointing, to say the least, that Nonaka does not consider them in his theoretical framework for knowledge management. Given these problems it seems obvious that organizations cannot, as Nonaka tends to think, be conceived of from a unitary cultural perspective. Problems and conflicts in the mediation of interpretative frameworks are bound to occur in the practice of knowledge management and organizational knowledge creation and Nonaka does not give us any clue on how these problems should be addressed.

5. Relativism and Knowledge Justification in Organizations

Our second point of criticism regarding Nonaka's model focuses on the problem of knowledge justification and cognitive relativism. Again we take issue with two aspects of this problem that we encounter in Nonaka's exposition.

Firstly, by introducing the justification standards mentioned earlier, Nonaka seems to adopt an extreme form of cognitive relativism on the validation of knowledge claims in CKM. And as we indicated already, Nonaka does not even bother to mention the criteria that are normally used to test the truth of a scientific statement. Now it is possible and even very likely, of course, that Nonaka took these standards of scientific respectability for granted and that he just wanted to emphasize some additional criteria that are of manifest importance as well to organizations that depend on profit and cost efficiencies for their survival. But still, Nonaka (1994) is not very clear on the subject, especially when he notes that:

> In developing [new] products and identifying [new] markets, Japanese firms encourage the use of judgment and knowledge formed through interaction with customers - and by bodily experience rather than by "objective," scientific conceptualization (p.22).

If we are to understand this statement as an endorsement of a radical form of cognitive relativism that dismisses all criteria of scientific respectability, then it should be noted that this has never been the aim of subjectivist or conventionalist epistemologies. Surely, allegations of relativism in this sense have regularly been uttered against these epistemological positions. But there is a marked difference between the adoption of relativism on the one hand and the admission of the relativity of the acceptability of

knowledge claims in science to a specific culturally determined and time-bound tradition (a paradigm or conceptual framework) on the other. The last position at least would surely deny that we could believe what we like, based on the promise of, for instance, a bright (financial) future. Thus Kuhn has always emphatically dismissed the claims of hard-headed positivists that his paradigm theory entailed an irrational and self-referential incoherent kind of relativism. Kuhn never intended to deny that there can be very good reasons to prefer one paradigm or theory over another. As we said earlier, there are good reasons in abundance. The only thing Kuhn claimed was that none of these could definitely *dictate* a choice and, more specifically, that there is no recourse or privileged access for any person to an objective array of facts to resolve interparadigmatic disagreement. Kuhn's intentions in this respect are perhaps best expressed in a theory of truth that has been developed by the German philosopher Jürgen Habermas, in which the truth of a statement or theory is equated with the rational acceptability of adopting it as such (Habermas, 1972). If this means that more can be true than can be definitely and unequivocally determined at a certain moment, then this should rationally leave us with the option of agreeing to disagree until further arguments become available. However, this only implies the relativity of knowledge, not relativism or arbitrariness.

But assuming for the moment that Nonaka does not opt for an extreme relativism and that he does recognize the validity of scientific standards for knowledge justification, then the problem of the possibility of conflict and disagreement on the application or priority of these standards still remains. In essence, this boils down to the question we were left with in the previous section, of how interparadigmatic disagreement should be handled in practical circumstances. Thus, it is not inconceivable, for instance, that in an organization a choice between rivaling innovation policies might be forced, where there is something to be said for either one based on a different priority or application of the assessment standards available. This situation, of course, is similar to the problem of the choice between incommensurable theories, of which Kuhn has claimed that such choices are ultimately based on value judgments. In the context of organizational and industrial innovation, however, this opens up important ethical-political ramifications for CKM. For, given that the choice between incommensurable interpretative frameworks is *rationally* and *objectively* undecidable and that people are often strongly committed emotionally to their tacit convictions, the question becomes how far one is prepared to go in order to 'win' the battle for paradigmatic prominence. This practical issue has been elaborated by the American philosopher Richard Bernstein in an analysis of the special relevance of Kuhn's incommensurability thesis for the social sciences and humanities. Bernstein (1991) stresses among others that although there are always possibilities for mediation between rivaling paradigms:

> We can never escape the real possibility that we may fail to understand 'alien' [interpretative frameworks] and the ways in which they are incommensurable with [our own]. But the response to the threat of this practical failure – which can sometimes be tragic – should be an ethical one, i.e. to assume the responsibility to listen carefully, to use our linguistic, emotional, and cognitive imagination to grasp what is being expressed ... (and especially to) ... resist the dual temptations of either facily assimilating what others are saying to our own categories and language without doing justice to what is genuinely different and may be incommensurable or simply dismissing what the 'other' is saying as incoherent nonsense (p.65f.).

Therefore, Bernstein concludes, learning to live with rivaling interpretative frameworks is always *'a precarious and fragile affair'*, something he calls a difficult but at the same time crucial *Aufgabe* for the ever globalizing civilization of our time.

Nonaka, on the other hand, apparently 'solves' these issues by authoritarian means, when he speaks of the *'highly strategic task of company leadership'*, or by implicit self-censorship on the part of organization members through their 'commitment' and loyalty to the company. Given the nature of the pressures of economic and business practice this is to some extent understandable. On the other hand, however, we fear that from the point of view of stimulating real innovation and organizational learning Nonaka's approach may prove rather stifling, as some potentially important new product and organization concepts could be suppressed by not being in accordance with the vision of a CEO or with the mission, goals and strategies a company at some point in time has adopted. Here Nonaka seems to run into some tacit assumptions of his own, which may be warranted within the context of Japanese business culture but which are at the same time not in and by themselves conducive to fundamental innovation. This point may well serve here to illustrate how difficult it can be to open up and confront the deep commitments out of which rivaling interpretative frameworks are composed. Tolerating, accepting and even stimulating difference and 'otherness' has historically proven a difficult task for many cultures and civilizations. In business culture specifically it even runs counter to

the often strongly held values of uniformity and integration. At the same time, however, to achieve real innovation it seems a necessary prerequisite for organizations to allow the potentially usurious seeds of difference to grow in their own gardens and even to consciously cultivate them.

6. Conclusion

As business organizations around the world have become more and more dependent on their intellectual assets for their continued survival, it seems that corporate knowledge management is a vitally important new discipline in management research and practice. The success of the discipline, however, will depend strongly on its ability to develop a realistic and robust set of fundamental principles regarding its subject matter.

In this paper we have examined Nonaka's efforts to develop such a paradigm for CKM. In general we consider Nonaka's choice for a subjectivist or conventionalist conception of knowledge as an important step in the right direction, as business organizations inevitably will have to work with the *actual* commitments and beliefs that organizations members wittingly or unwittingly adopt as a capacity for corporate action, whether these convictions are 'objectively' true or not. In order to manage both industrial and organizational innovation Nonaka in this respect expects a lot from the mobilization and externalization of the deeply held tacit commitments of organization members. However, to achieve this, Nonaka on the one hand takes his subjectivism too far, while on the other he does not go far enough. On the first point, Nonaka threatens to run into a dangerous form of relativism and arbitrariness in the context of knowledge justification, when the assessment standards he proclaims for knowledge creation are limited to purely economic or financial performance criteria. On the latter point, as we have shown, Nonaka completely ignores the insight that rivaling mental models or interpretative schemes often are mutually incommensurable, as a consequence of which a choice between them is rationally and objectively undecidable, not because there are not enough standards to decide, but because there are too many. The solution Nonaka seems to propose for this problem, namely to take the mission, goals and strategies of the organization as an *a priori* guideline for managerial choice, might easily be counterproductive from the point of view of stimulating innovation and organizational flexibility. If this is indeed the case, we believe Nonaka in this respect is not helping the cause of corporate knowledge management and his proposal for a general paradigm for CKM is questionable.

References

Bernstein, R. (1991). Incommensurability and otherness revisited. In R. Bernstein (Ed.), *The New Constellation: The Ethical-Political Horizons of Modernity/Post-Modernity.* Cambridge: Polity Press.

Drucker, P. (1993). *Post-Capitalist Society.* Oxford: Butterworth-Heinemann.

Habermas, J. (1972). Wahrheitstheorien. In J. Habermas (Ed.), *Vorstudien und Ergänzungen zur Theorie des kommunikativen Handelns.* Frankfurt a.M.: Suhrkamp Verlag. 127-183.

Kuhn, T.S. (1970). *The Structure of Scientific Revolutions.* Chicago: Chicago University Press.

Kuhn, T.S. (1977). Objectivity, value judgment, and theory choice. In T. S. Kuhn (Ed.), *The Essential Tension.* Chicago: Chicago University Press. 320-339.

Kuhn, T.S. (1974). Reflections on my critics. In I. Lakatos & A. Musgrave (Eds.), *Criticism and the Growth of Knowledge.* London: Cambridge University Press. 231-278.

Kunneman, H. (1986). *De Waarheidstrechter: Een Communicatietheoretisch Perspectief op Wetenschap en Samenleving.* [The Funnel of Truth: A Communication Theoretical Perspective on Science and Society]. Amsterdam: Boom.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science,* 5(1), 14-37.

Popper, K. (1972). *Objective Knowledge.* Oxford: Oxford University Press.

Stuart, T. (1994, October 3). Your company's most valuable assets: Intellectual capital. *Fortune.*

Wittgenstein, L.(1953). *Philosophical Investigations.* Oxford: Basil Blackwell.

J. P. J. M. Essers, Erasmus University Rotterdam, P.O. Box 1738, 3000 DR Rotterdam, Netherlands.