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Coping with the Concept of Knowledge

Abstract *It seems obvious that management activity, especially in the traditional understanding of the concept, has to rely on a clear concept of its 'target' or the 'object' that is to be planned, organized, led and controlled. Nevertheless, this does not apply to the management of knowledge – or should I say to the management of knowing; or rather to the management of the generative dance between those two concepts? Knowledge, knowing and their interplay, have been dealt with quite differently throughout history and in different cultures. Does it make sense to dive into the 'philosophical morass' behind attempts to clarify a concept of knowledge that so easily escapes our definitional grip? Or should we live with a fuzzy notion in knowledge management? The latter is supported by the article. However it juxtaposes 'enlightened' fuzziness, inspiring creative search to dogmatic certainty and exclusion, which increase the danger to sink intellectual and financial capital into dead ends. **Key Words:** balanced gliding of meaning; (enlightened) ignorance; knowing; knowledge; language games*

Introduction

Although knowledge management has been on the agenda for several years, some basic questions remain open and ambiguous and will probably continue to do so. This does not seem to restrict progress at the level of middle-range theories and 'down-to-earth' solutions to partial problems. However, such solutions inevitably rely on preliminary answers to those basic questions, which often remain implicit and unexamined. Therefore, it seems advisable to revisit basic questions from time to time even though they create unease and are easily put aside while proceeding with model building, empirical design or projects in the practical field.

I consider the following questions are worth revisiting:

1. There seem to be as many concepts of 'knowledge'¹ as there are articles and practical projects. Definitions are often not followed through (cf. Schneider, 2001) and practitioners refuse to become involved with 'philosophical or epistemological' considerations, which they consider futile and unnecessary

- for their task of managing knowledge (Hofer-Alfeis and van der Spek, 2002). Could they be right? Do we need clear concepts despite the fact that so many unrelated ideas have been offered throughout history and across cultures? What is the added value in digging deeper?
2. Having read a minor portion of the growing number of articles dealing with 'knowledge' and its management, I began to wonder if and how the pressure to publish (or perish) contributes to either a deeper insight or greater confusion. Could it be that a field such as knowledge management, which is interdisciplinary in nature, suffers from so much fragmentation, differing notions and unrelated practical evidence in a multitude of niches, that there is no chance of integration? Could it be that below the thin layer of superficial references to models, whose salience may actually be due solely to those references, there is 'a cacophony' of approaches which would crumble if we took the time and effort to carefully study and compare them? One could argue that a broad agenda constitutes an inspirational frame for a young discipline. I challenge this position, arguing that each period of gathering unrelated concepts and empirical findings should be followed or accompanied by a period of meta-concepts and meta-analyses of empirical results. In order to develop meta-concepts and to execute meta-analyses, basic notions and variables need to be clearly defined. This is not the case for either knowledge or management. Unfortunately, current publishing and reviewing strategies seem to prefer single concepts and single studies to meta-articles. This leads us directly to the third question.
 3. There seems to be a growing chasm between the academic community exploring knowledge (management) at a high level of abstraction and the practical field where decision makers must dedicate attention and budgets to concrete choices long before theory has provided clear concepts and sound evidence. While theory is concerned with explanation—that is, causality—practice needs functionality and is concerned with finality. At first sight, these concepts may seem to be two sides of the same coin. But finality can be achieved by applying black-box approaches, whereas causality requires opening the box. According to Luhman's social systems theory (1996), technicians need not ask the 'why' question as long as they receive satisfying results by asking the 'how' question.

What is the function of academic research in this context? Should researchers serve the need for pragmatic solutions to incomplete questions, despite the observation that they may have been raised with a higher explorative potential? Theoretically, this means closing discourse at certain intersections although the matter in question has not been fully explained or clarified. If there was no closure there would be a great deal of contemplation, but no action. If we close too early, we run the risk of being biased towards implicit preferences or a perceived status quo, whereas reflection could have broadened our perspectives on both the problems and the range of possible solutions (Foucault, 1992). I put forward the proposition that knowledge management research would benefit from ongoing reflection on the concepts of knowledge and knowing.

From a single-loop learning perspective, this may seem too broad an agenda for one article. Synopses have to ground their arguments by pulling

diverse strings of reasoning, which will irritate readers from a single, focused background. As one cannot elaborate on all reasoning traditions, one needs to make use of the concept of 'macro-argumentative patterns'. Such patterns conclude on various reasoning traditions while shortcutting whole lines of argument and simply making use of signals or pointers. Signals and pointers stand for the full lines of argument, however, they can only be understood by readers who share a similar eclectic pattern. Eclectic patterns differ between research contexts and rarely transcend paradigmatic borderlines. This is a problem for research in general, of course, but it is less evident in narrowly focused articles and studies. I propose to deal with the questions of knowledge and knowing, precisely because their very core refers to similar problems: shared context, conventional pointers and definitional power.

4. Finally, I observe some tension, if not contradiction, at the level of human interaction. While the commercial context of businesses under competitive pressure seems to drive an instrumental exploitation of knowledge, academia points to the hypothesis that—due to the 'nature of humans and knowledge'² such exploitation might forgo the very effects that instruments target (Tsoukas, 2000). Again, reflection on the concepts of knowledge and knowing may contribute more to this tension than a typology of different patterns of knowledge and knowing, which tries to alleviate the tension through separation. By the same token, it may lead to heated debate between different camps, which favour either the explicit and scientific side of knowledge or its implicit and narrative roots, and therefore not solve the tension at all. Both concepts need to be kept in mind simultaneously, at the edge so to speak, where knowledge is referred to as a discursive search. I elaborate on this idea in this article.

All four questions are interlinked and grounded in the first: What is knowledge? How is knowledge generated, and where does it originate? What is the function of knowledge in different contexts? This article proposes that a single-loop research tradition, which aims at a simple addition of divergent concepts, has more negative than positive effects on theoretical insight, and on its transfer to the practical field. In the process, I raise major interlinked questions and thus run the risk of pulling and knotting too many strings which are unfamiliar to readers. In the words of Martin Luther: Here I am and cannot help it.

Why Do We Care: The Significance of Knowledge and Knowing Within a Strategic Context

It is probably wise to abstain from the common mantra of references to resource-dependency theory and resource-based views of competitive advantage (Amit and Shoemaker, 1993; Barney, 1991; Grant, 1991; Peteraf, 1993). However, it seems essential that it is kept in mind that a major objective of knowledge management's theoretical, as well as practical arm is to contribute to the development of superior strategy. In the strategic literature, knowledge is treated mostly as a resource or as the fourth factor of production.

It seems obvious when condensing a large body of literature that mere access to resources considered static and independent hardly constitutes a durable competitive advantage.

Therefore, the resource-based view has been extended to look at capabilities, defined as routines (Leonard-Barton, 1992; Nelson and Winter, 1982) or sets of interacting routines (Grant, 1991) or as organizational capabilities. All of those concepts fulfil the criterion of uniqueness: because they are dynamic, collective and embedded they can hardly be imitated, replaced or transferred; they are most probably durable; and they will not erode with use. So far so good—at this level of abstraction. But how are they built and (how) do they create market value? At this interface, the literature on knowledge management fills in where strategic articles stop, rather than dealing with a micro-view on capabilities. Capabilities are presumed to form in path-dependent processes of learning from (un)successful problem solving, they somehow seem related to a configuration of people, context variables and situational triggers and they seem to integrate explicit knowledge and implicit knowing.

How they form, what distinguishes suitable configurations from less suitable ones, how knowledge and knowing interact—those questions are usually excluded from a macro-analysis of competitive advantage. Implicitly, such analysis contains the assumption that micro-questions are only a matter of implementation and do not affect the strategic function of capabilities to create sustainable competitive advantage in principle. This assumption may and should be questioned.

Despite the important critique by Leonard-Barton (1992) knowledge, learning and capabilities continue to carry a positive connotation. Just like culture or intellectual and social capital, they are implicitly assumed to create value and to support corporate objectives as well as individual careers.

Routines, however, can turn into rigidities; experience-based capabilities can prevent organizational change. Social capital can be the infrastructure for boycotts, contra-productive opposition and turf wars. And individual portfolios of outdated abilities can lead directly to unemployment. Therefore, a micro-view of the patterns of capabilities and their interaction with situational factors seems indispensable if we are to proceed on the track of a resource-based view of 'knowledge'.

A micro-view will have to rely on a clear concept of knowledge (or as I suggest later, it will have to rely on a clear concept of a lack of clarity and its implications) as long as knowledge is considered to be a resourceful building block of routines and capabilities. Therefore, one cannot avoid ontological and epistemological questions even if economic contexts are not primarily concerned with philosophy. Where aspects of a micro-view are proposed in the literature, the field of reference is usually a single corporation or a joint venture between single corporations that share a history of common practice. Such common practice is described as generating institution-bound embedded, embodied and emerging capabilities. These, in turn, are unique to specific configurations of cooperation and competition within the framework of a hierarchy or hybrid form between a hierarchy and a market. Ergo, time and a common history of close cooperation are considered essential for the generation of the types of knowledge-based

capabilities that are expected to result in competitive advantage. However, time is condensed by competition for speed, and common history seems to evaporate in fast reconfigurations along the business chain. There is a new emphasis on fluctuating networks, temporal and virtual forms of organization in reaction to a new competitive environment characterized by globalization, digitalization and acceleration. In other words, the conditions under which capabilities evolve are changing. There is pressure to accelerate historical paths, to explicate³ what used to be implicit (and thereby protected) and to transfer to newcomers within short periods what used to be transferred by socialization (Nonaka and Konno, 1998; Nonaka and Takeuchi, 1995). Even if the virtual or borderless organization is more a concept than an empirical fact, there seems to be a push towards higher levels of explicitness, nurtured by shorter periods of organizational duration and management tenure and by higher employee turnover. This is mirrored in endeavours such as process engineering and not least knowledge management itself.

If such tendencies prove sustainable and valid, then we need to reconsider the dynamic, complex and collective capability-based view with a strong reliance on organizational boundaries and time. If concepts of knowledge management are to keep pace with the competitive environment of firms, we need a more profound understanding of the processes of learning and unlearning, as well as of capability building and its reverse. Reflection on knowledge and knowing might help us to detect types of virtual and borderless organizations that do not correspond to the natures of human beings and their ways of gaining knowledge. At the very least, this can be derived from an understanding of knowledge as personal, context-bound and a process. A view of knowledge as impersonal, context-free and static is closer to an agency perspective of firms, treating them as a bundle of contracts that can easily be unbundled and reconfigured under different ownership and with different actors. It should have become clear by now that any argument pointing to competitive advantage from a resource-based perspective depends heavily on a basic understanding of the knowledge on which it is grounded. I leave the argument of borderless and short-term as well as fluctuating organizations to further explore and tackle the problem of building competitive advantage through knowledge management within our traditional research objects, namely single firms and corporations. This requires a micro-view on concepts such as 'knowledge', learning and forgetting, which is attempted later.

Can Knowledge Be Defined?

Of course it can, as definitions are only conventions that, for better or worse, serve certain purposes. The goal here is to understand the 'nature' of knowledge so that management activities directed towards its generation, use and diffusion are effective, efficient and humane. This immerses us in very basic questions with regard to phenomena of a whole, which we describe as 'the world' or as 'reality'.

Difficulties and Contradictions

First, we are confronted with the Janus-like character of all real phenomena as a stock, product or result, on the one hand, and as a process, flow or method to bring about results, on the other hand. For the Greeks as well as for Humboldt in his analysis of language, this was reflected in the duality of 'energeia' and 'ergon'. Although judging energeia, or becoming, to be a more plausible explanation, I point to the observation that methodology more or less forces us to take snapshots of phenomena which are in the state of becoming. Even longitudinal studies cannot be more than a comparison of different static snapshots, although they help us to better understand the dynamic character of the phenomena under scrutiny. Therefore, the question of whether any phenomenon, in general, or knowledge, in particular, is a process of becoming or a stable structure is usually fruitless. Meaningful questions ask about the consequences of either perspective. This applies to other 'either-or' controversies in the field. Be it the 'controversy' between a market- or a resource-based view of strategic advantage, between explicitness or implicitness with regard to knowledge, or between system theory or action-based theory, the question is never whether one of those views is superior to the other, but what each of them allows us to see while also creating blind spots.

Turning back to the concept of 'knowledge', the question is whether we can overcome a state of confusion, seeing as how it is so far from being the 'state of the art'.

There has been no commonly accepted definition of knowledge during the history of thought and practitioners claim there need not be any (Hofer-Alfeis and van der Spek, 2002). This coincides with Boulding's observation that any discourse on the nature of knowledge is doomed to fail, 'The pursuit of this question . . . leads us into a philosophical morass, from which the only escape is to climb out, . . . go home . . . have a good dinner and forget all about philosophy' (Boulding, 1966: 12).

Does this mean we can leave the question open or live on with broad definitions that include everything? Consider the following: knowledge is defined by van Krogh and Roos as 'all abilities and skills, applied by individuals to fulfil purposes, which allow them to act and [. . .] to ascribe meaning . . .; knowledge contains . . . normative and emotional elements and it depends on context and time' (van Krogh and Köhne, 1998: 236; translation by the author).

In this broad definition, knowledge seems to be the equivalent of the 'conditio humana' itself, because acting and interpreting are principles of human life. Schreyögg and Geiger (2003) have criticized the definition as 'fuzzy' and suggested a rather restricted use of the concept which I discuss later.

I share their critique of all-inclusive definitions that are too broad to direct research and practical action. Another problem arises in cases where a clear distinction among data, information and knowledge drawn in introductory sections becomes blurred in the sections that follow (Davenport and Prusak, 1998; Edvinsson and Malone, 1997; North, 1998).

Are there consequences of unclear and fuzzy concepts? Definitely. It is my observation that, due to fuzziness, academic discourse accumulates in bits and pieces, and that contradictions, redundancies and complementarities are hardly

recognized or elaborated upon. Articles do not build on existing concepts; references follow a rather superficial pattern of name- and notion-dropping that bears the function of signalling. As long as the market is not mature, there is too much at stake: claims to set standards are made. Therefore, practitioners have to deal with a multitude of offers which probably confuses more than it enlightens. As Desprès and Chanvel (2001) observed:

Knowledge Management is one now of the most ramified topics in the business arena. Much of this amplitude can be attributed to the number of fields that lay claim to the idea, or some part of it, including computer and information science, business strategy, macro economics and interpersonal dynamics to mention only a few. Proponents generally claim that this symphony of schemes is appropriate given the important, transversal and imminently practicable nature of Knowledge Management. Its critics, on the other hand, are hearing either a re-mix of older refrains, schizoid melodies or an outright cacophony. All parties agree that we are nonetheless witnessing an explosion of interest in the term Knowledge Management and all that it may or may not imply.

This cacophony differs from Kuhn's model of paradigm shifts (1962) in which a shift occurs if one well-defined paradigm is considered to contain less explanatory power than an alternative well-defined paradigm. In knowledge management a lot of unrelated cherry picking with regard to diverse frames of reference can be observed. Frames of reference or paradigms enable researchers to define their research objects, research questions and research methods. Different frames are considered to be incommensurable. In 'immature' and young fields of interest, there should be no need for additional frames of reference as long as those presented in pioneer studies have not been explored sufficiently. Nevertheless, this can be observed in knowledge management. When articles search desperately for a philosopher who has not yet been exploited for publication, they add an impressive reference, but rarely explanatory value, to the field. When empirical studies are based on eclectic concepts building only superficially on prior studies, their results remain isolated single findings. Of course, the author exaggerates to make a point. She has not systematically researched a defined set of publications but bases her argument on a panel of other experts who share her impression (OKCL, Innsbruck, 2004).

The first question raised in the Introduction was based on the observation that there is no clear definition of knowledge in the knowledge management literature but rather a multitude of unclear, all-inclusive definitions that draw on other unclear and all-inclusive concepts such as learning, experience and capabilities. I have briefly argued that the ambiguity and lack of clarity of a basic concept in the early stages of a discipline is detrimental rather than useful in the gaining of insight. However, the history of thought has provided us with different explanations of the phenomenon in question, but with no definite procedure for preferring one over the other.

With regard to this problem, I put forward the following proposition: a lack of agreed frames of reference leads to divergent and incommensurable definitions of research objects, research problems and research methods. This prevents the integration of concepts and studies by meta-analyses which presuppose a common object, a set of specific research questions and an agreed upon methodology.

Because those three characteristics constitute a field or discipline, we need not be surprised that knowledge management has problems developing a distinctive profile in the scientific community and among practitioners.

The problem can be tackled in three ways. First, solve Agrippa's trilemma by the usual suspects, such as dogma, infinite regress or tautology. Dogmatic closing means taking sides with one perspective on knowledge, as can be seen in most IT-related articles, which treat knowledge as data. Infinite regress means to explain a concept using familiar concepts, which need to be explained by other familiar concepts and so on. A second way of dealing with ambiguous and unclear phenomena is undertaken by separation and differentiation; contradictory parts of definitions are allocated to different types of the phenomenon in question. For example, the personal, context-bound and dynamic definition of knowledge is allocated to a category labelled 'implicit', whereas the context-free, impersonal and static side is allocated to a category labelled 'explicit'. Differentiation is supportive as long as results are not presented in an additive manner. In the latter case, the problem is only transferred to the level of relations between different types. A third way to address the problem is to accept it and try to think in terms of contradictory meanings simultaneously. This is what Derrida (1988) calls 'balance gliding' and Foucault (1992) calls 'keeping at the edge', or Buddhists conceive of as 'the one as well as the other' as opposed to 'either-or'. As an attitude, this solution is attractive but can it also direct concrete action? I deal with this question later.

Turning to the second question raised in the Introduction ('Is there a culture within the research community whose quality standards are in danger of becoming counterproductive?'), I walk on dangerous and swampy ground when putting forward the following proposition.

The dominant paradigm as published and practised by leading journals and their reviewers can be considered to reinforce the fragmented pattern, bemoaned above. Empirical work is preferred to conceptual work, although concepts are not thought through sufficiently. Single-focus studies are preferred to meta-studies and multiple perspectives (which are more difficult to follow through in a sound manner). Self-referential 'pointings' to a narrow set of 'salient' studies reflect strategies of 'mental hedging' rather than of thoughtful digestion of those studies. Authors seem to contradict one of the major purposes of knowledge management, namely not to reinvent the wheel. In order to gain visibility, and probably also maintain motivation, they need to do it 'their way', that is to reinvent. Of course, many good reasons can be given for empirical studies, for focused research objectives and for referencing. However, if all three are applied without good reason but with a selection of research objects, of problems and methods driven by publication strategies rather than by curiosity and issues, those core research capabilities may well turn into core rigidities (see Lawrence, 2003 for similar observations in the natural sciences). This reminds me of the way chief information officers decided on computer investment in the 1980s. They went for Big Blue computers as nobody could blame them for having decided in favour of the market leader. Competition of ideas presupposes transparency and comparability. An eclectic multitude of broad concepts of knowledge could be said to prevent transparency and comparability and thus to be one of the roots of a practice of publications which confuses more than it enlightens.

A third issue raised in the Introduction refers to a chasm between the theory and practice of knowledge management. The fuzziness of basic concepts and the lack of a coherent framework to direct the selection of objects, problems and methods contribute to a growing chasm between the scientific and practical communities. Another factor is a desperation to publish and earn impact points in combination with preferences of reviewers—some favouring school of thought-related criteria of relevance rather than issue-related criteria of relevance. An ongoing study's preliminary findings show that practitioners are barely aware of the journals that academic scholars consider to be most prestigious; if they know them, they rarely read them and if they read them, they do so for reasons of intellectual curiosity rather than with any intent to apply (Oesterle, 2006). As management theory derives its legitimacy from being an applied discipline that contributes solutions to practical problems, the chasm must not be ignored. It can be explained in part by incentive structures in each respective system: practitioners are often driven by short time horizons and by a desire for quick wins. Therefore, they focus on *how* rather than *why* questions. They live easily with trial and error, with self-fulfilling prophecies generated by benchmarking and mimetic standardization of behaviours, and generally with imperfect solutions that breed new problems to be solved using the same type of imperfect solutions. Although such patterns may be less efficient and less effective than actions grounded in more thoughtful analysis, practitioners can hardly afford to apply the latter as accounting practices fail to isolate and accentuate opportunity costs. They also fail to account for the long-term effects of decisions. Therefore, actors in the practical field are well advised to rely on the normative force of the factual and not to search for alternatives, as long as there is no pronounced economic failure. Academic theorists, however, can live happily within the self-referential world of their models and approaches without bothering whether the *n*-th layer of elaboration in a school of thought that originally referred to a real-world issue is still related to that issue. Given such divergent incentives, a chasm seems a natural consequence. (How) can it be avoided on the side of theory? If research on knowledge management remains involved at the principle level, how can it deal with the reasonable expectation of being useful in the practical field? If it contributes within frames of unquestioned assumptions, how can it cope with the suspicion of having bought certainty at the price of undue reduction?

Again, the relation between the 'real' and its reflection or construction in human minds is a basic epistemological question and thus involves considering the nature of knowledge and knowing. The third question cannot be answered without solving the problem of an unclear and ambiguous concept of knowledge underlined in the first question. This becomes even more evident when we turn to the fourth question raised in the Introduction. Combining knowledge with the term management implies and elicits images of systematic control and direct intervention. Control and direct intervention fit the machine metaphor of human interaction with the physical world, with other human beings and with a material purpose. Constructing a knowledge-management system according to the metaphor of a machine allows for sophistication but not complexity. Obviously, we cannot build a machine using parts whose characteristics will change after they have been installed. However, a business organization, comprising human actors can be said to consist of such changing parts because of the problem of

double-contingency: each actor can select from a range of behaviours and so can his/her counterparts. As soon as a greater number of actors dispose of a greater number of degrees of freedom, their interaction will be complex. Complex systems cannot be managed by direct intervention and fixed design. Only data and the framework within which actors generate, diffuse and use knowledge can be influenced. This creates unwelcome uncertainty about outcomes. Therefore, theoretical models, as well as practical management, have attempted to reduce complexity. If behaviours are standardized, if expectations can be manipulated, if programmes can be designed that channel human (inter)action and keep it stable, then direct design and intervention may apply. The price, however, is high. In a dynamic environment the future cannot be predicted, planners cannot foresee all the actions needed to survive in the future. Therefore, organizations need flexibility. Flexibility is gained by indirect control through common vision, resource-related constraints and a repertoire of professional routines that can be applied contingently. Knowledge work is complex work. Therefore, attempts to standardize and to program are not advisable. Again, one needs to understand the implications of different approaches to comprehend the concepts of knowledge and knowing in order to determine where knowledge management activities can be designed closer to the machine-metaphor of direct control and intervention, or closer to the organism metaphor of indirect control and self-organization (Schneider, 1996; Willke, 1998).

This section leaves us with the insight that all four questions depend on a clear definition and understanding of the nature of knowledge, the nature of learning and the nature of knowing, because an ambiguous and unclear understanding leads to various problems. But, is there an alternative? Is there a satisfying definition of knowledge that is exclusive enough to lead analysis and action and inclusive or broad enough to cover aspects which are meaningful to the 'management' of knowledge? An attempt to answer this question is made below.

Different Concepts of Knowledge in the History of Thought

As pointed out above, one solution to deal with ambiguous concepts is to separate the phenomenon into more homogeneous parts. Different authors have suggested simple dichotomies of knowledge: the most common—and probably most misunderstood—differentiations are those between explicit and implicit knowledge, and between individual and collective knowledge (Nonaka and Takeuchi, 1995 and the abundant references to this book). Another example is the distinction among post-figurative, configurative and pre-figurative knowledge (Eck, 1997), pointing to the degree of explicitness, structure and formalization, on the one hand, and the degree of validation, on the other hand. Lyotard (1984) presents definitions (not distinctions) of narrative and scientific knowledge. Luhmann (1996) describes the binary code of true/false as the distinction driving the scientific subsystem of society, whereas the technical sciences operate with another category of validity, namely functional/dysfunctional. Bureaucratic systems distinguish between authorized and unauthorized knowledge, a binary code that is also reflected in quality and performance management systems developed by business organizations.

From a strategic point of view, the distinction between relevant and irrelevant knowledge seems to be crucial but does not really enlighten because relevance is a fugitive category in a 'turbulent'⁴ environment. Rooney and Schneider (1999, 2005) have tried to clarify the implicit side of knowledge by introducing and combining the poles of articulated—unarticulated, declarative—procedural and rational—intuitive, thus making the point that 100 percent explicitness and implicitness are unthinkable.

From a second-order observation or epistemological point of view, we can distinguish a western (natural) science approach from a systemic sociological approach and a postmodern philosophical approach.

A natural science view has 'emancipated itself' from all supranatural relations to a God or to an idea immanent to all material things. Knowledge is conceived as building up by explicit propositions, reasons and tests, to accumulate over time and be independent of individual minds and specific contexts. In this view, knowledge is not thinking, but the result of thought processes that precede individual thinking. It is a stock, pre-given, and meant to be used to change (not to understand) the world.⁵ This view partly overlaps with Cook's and Brown's epistemology of possession (1999). It drives the majority of practical knowledge management projects, which rely on a linear understanding of management and on IT-based tools to process, transfer and document knowledge. In this view, knowledge is defined, appropriable, transferable and can be stored on electronic devices. It can be passed between individuals as well as between e-media and individuals without changing its character. Combined with a linear understanding of management and the intention to multiply existing knowledge, this view has been labelled a 'tayloristic approach to knowledge management' by Schneider (2001). It models human brains as processors plus hard disks and relies on e-collaboration and e-learning as ways to download a large amount of content to many brains. It deals with only the explicit side of knowledge and tends to prefer formalized and scientific knowledge over less formalized and narrative knowledge. This view serves psychological needs to avoid uncertainty as reflected in clear objectives, in an obsession with measurements and a culture of necessity to 'prove' bottom-line effects of knowledge management activities. Nevertheless, because business is a context in which scientific, technical, bureaucratic and economic binary codes need to be applied and integrated, there is no clear hierarchy of relevance. Knowledge managers—even within this reductive view—are still exposed to ambiguous decisions due to the partly incommensurable nature of the subsystems and codes that intersect in a business enterprise. If they close the discourse on the nature of knowledge by applying a natural science view and its corresponding understanding of humans as rational beings who maximize benefit, they will be confronted with effects resulting from other views on knowledge and materializing in the forms of resistance, sub-critical use and misunderstanding.

A systemic-sociological view conceives of knowledge as emerging in a collective process which is borne by individual entities but not related to specific persons. Knowledge needs to be constantly (re)activated and is not simply at somebody's disposal as in the natural-science-based approach. The (re-)activation is not arbitrary or spontaneous, but depends on sediments of former

observations and communications (Luhmann, 1994). Knowledge is valid as long as it serves a system in its survival. Knowledge management, therefore, needs to permanently test whether the processes of reactivation, which include alterations and omissions—that is learning and forgetting—are still functional and allow the system to survive. This testing can only be executed from the position of second-order observations: is the pattern of learning, unlearning and ignoring activated in an organization still in sync with its environment? Where are the blind spots in the distinctions drawn at the level of first-order observation? Of course, such a high level of abstraction and generalization does not help a practitioner with decisions of the kind (s)he is confronted with in everyday action. Should we introduce e-learning programs? How much money should be spent and what content should we put on our intra- and extranets? How can we preserve the knowledge of retiring experts? High-level abstraction, however, can help to redefine such questions as: What type of team knowledge do we need to fulfil a certain task? Can e-learning (in a pure or blended format) support the generation of this knowledge? Do we need procedures to erase content from all types of storage media? How can such procedures be designed? How can we preserve those parts of the knowledge of retiring experts that will probably be functional in the future, in a way that supports the reactivation of this knowledge when it is needed? These questions are more complex than those we would ask with a natural science or factor-oriented view in mind. Therefore, they are often less popular with practitioners under pressure to produce fast results. Knowledge in a systemic-sociological view is collective, mainly explicit (at least silently verbalized by second-order observers), elusive and sticky at the same time. Validation criteria seem nebulous if applied ex-ante as decision makers must apply them. What is functional to survival usually only proves itself ex post. Ex ante we have to rely on experience and theories which supply predictions based on causal models that are necessarily restricted and contingent. This is pushed to its extreme in postmodernism.

While the other approaches, at least implicitly, uphold the assumption of a certain correspondence between knowledge and the objects to which it relates, postmodernist thinkers do not recourse any longer (Derrida, 1972; Foucault, 1997). Meaning is 'implemented' into texts by their authors. Readers build on this meaning and interpret it at the same time. By deconstructing the author's intention, readers can reveal alternative meanings which are hidden in the text as a kind of shadow meaning of what has been said explicitly (see also Luhmann, 1994). Knowledge in this view emerges from a process of 'calculated gliding' (Derrida, 1979), it is permanently (re)generated by thinkers who must be able to keep the balance at the edge of each distinction which is drawn in a text. As in the ancient Greek tradition, knowledge is not viewed as a thing in itself, which can be considered as input to thinking, but as related back to the process of thinking directly. In contrast to the other two views, it gains freedom from purpose as it reflects not only on knowledge, but also on the conditions of how it is created. For knowledge management, postmodern approaches lead to a focus on the generation of knowledge and cherish doubt, as Weick and Sutcliffe (2001) suggest in their book on high-resilience organizations. Postmodernist approaches

are most aware of blind spots in their discourse on knowledge. Yet, at the same time, they are rather evasive with regard to content or procedural models. Any decision, be it on relevance, definitions or diffusion by various techniques, is always dependent on those who take part with their idiosyncratic knowledge bases and intentions. The decision is necessarily subjective, contingent and includes ignorance. For example, the notion of diffusion hides that there is definitional power involved, which turns socially harmless diffusion into less harmless imposing. The notion of transfer conceals that in the process of translating thoughts into language, passing them on and integrating them into the thinking patterns of listeners, numerous alterations can and normally do happen. Postmodernist approaches are sensitive to questions of authenticity as well: what has been said by authors must also apply to their own contexts. Therefore, any distinctions drawn in this article are necessarily subjective and dependent on the knowledge base, interests and preferences of the author. Of course, professional conduct supports her in counteracting this tendency just as in other epistemological approaches. However, owing to a postmodern perspective, I am aware of contingencies and neither confuse my text with reality nor claim dominance for the text in the name of truth or consensual validity as reflected in citation indices.

What can we conclude from this short peripatetic journey into different definitions and typologies?

Although I appreciate the merits of a natural science background of any intervention into the material world as well as into well-defined, stable social relations, I hold that in the complex social world of business organizations, a post-modernist approach is more promising as it includes a natural science view as one specific case in a range of possible views. Applying a postmodernist view to the discourse on knowledge management, the following can be concluded.

1. (Academic) texts are de- and reconstructions based on different levels of observation, which actually render them incommensurable. This raises the question of how quality can be controlled if there is no overarching reference to measure it. How can one decide on the value contribution of any text other than through a discourse that applies Derrida's balanced gliding instead of closing by dogma, tautology or infinite recourse? This bears implications for reviewing practices as well as for the chasm between theory and the practical field. However, discourse is not very common in either the academic or the business community. In the academic community, we rather solve incommensurability by separation—different disciplines, sub-disciplines and journals host different paradigmatic views, and cross-fertilization is rare. Sequential monologues (often labelled as interdisciplinary dialogues) accumulate perspectives by addition but do not confront, condense, elaborate or integrate them.
2. Any speech act builds on texts by adding new meaning and leaving out meaning intended by other users. For example, Nonaka and Takeuchi (1995) have drawn on Polanyi (1967), but their idea of implicitness is different from his notion of tacitness. This has led many readers of Nonaka and Takeuchi (1995) to interpret the dimensions explicit/implicit as dichotomies that can be

- transferred to each other. Others have pointed to the observation that explicit knowledge *about* something is different from knowing *how* to act with regard to this thing (Cook and Brown, 1999; Schreyögg and Geiger, 2003).
3. Most of the distinctions drawn are not followed through to their consequences for that knowledge management which is to take place under the conditions of both competitive pressure and the requirement to add value for shareholders. IT has hardly been deconstructed with regard to its immanent preference for explicit, formalized and standardized 'knowledge'. IT therefore, exerts pressure to define and prescribe procedures, to multiply standards and turn narrations, intuitions and implicit heuristics as applied in problem solving into explicit, formatted descriptions. Thus, consultants and project managers are briefed to articulate their heuristics and lessons learned so that they can be condensed into written texts and formula. But text and formula do not automatically enter into a generative dance with an applier.
 4. Apart from the socialization–externalization–combination–internalization spiral (SECI) most of the typologies include a 'western' or enlightenment bias toward the explicit side of knowledge which in addition, is interpreted in a natural science view.
 5. The problem of validity is rarely addressed. Schreyögg and Geiger (2003) suggest a solution that tries to combine a natural science and a postmodern view. They propose reserving the notion of knowledge to propositions (that is explicit text in the format of enlightened structure which presumes time, causality and space as actual facts)⁶ for which reasons are offered and tests have been applied. So far, their proposal follows a purely natural science view. They then try to escape this narrow understanding by arguing that the structure and legitimization of reasons and test procedures depend on the language game (Wittgenstein, 1963) or the binary logic of the subsystem (Luhmann, 1994) to which the triad of proposition–reason–test refers. This proposal is clear, but what does it mean for knowledge management? This question is looked at in the next section.

To Define or Not to Define—That is the Issue

To define, as originating from Latin, means to draw borderlines in order to sort phenomena into those that make up part of a set created by a definition (inclusion) and those that do not belong to it (exclusion). We are taught early on that a suitable definition is one that draws the borderlines narrowly and clearly so that no doubt about in- and exclusion can arise and a sharp analytical focus becomes possible.

The French philosopher Voltaire is reported to have stated: 'If you want to talk with me, define your concepts.' We recognize the influence of enlightenment and a natural science view in this requirement. It follows the Greek logic of either–or, in which a third position is excluded and allows concepts to be formalized so that they can be tested against reality. Reality, in this concept, is taken for granted as existing independently of our epistemological grip on it. Two authors have attempted to offer a solution to the fuzziness of the concepts

of knowledge and knowing. I scrutinize their concepts below (Schreyögg and Geiger, 2003). Starting from the heritage of western thought, Schreyögg and Geiger (2003: 14) suggested reserving the term knowledge uniquely to:

- propositions, that is explicit statements;
- for which arguments have been presented; and
- which have been submitted to tests.

In order to account for postmodernist insights, the authors do not insist on the tests being scientific in a critical, rational or positivist meaning. Any procedure that results from the logic of a certain societal sub-system or language game seems appropriate to them. However, they cannot escape the fact that propositions, as well as arguments, need to be stated in language. Therefore, I suggest introducing the following thoughts into the discourse on their solution:

1. The authors restrict their focus of attention to the explicit side of knowledge and miss out on the interplay of knowledge and knowing. Thus, they maintain a western bias for the articulated, declarative and rational as opposed to the unarticulated, procedural and intuitive (Rooney and Schneider, 1999, 2005). If knowledge management is guided by such a narrow concept, efforts will concentrate on only the tip of the iceberg. As briefly pointed out above, the creation of competitive advantage depends on the interplay between knowledge and knowing and needs to include the tacit, procedural and intuitive side. Therefore, the authors' suggestion does not solve the problem of minor relevance to the practical field.
2. Epistemologically, authors restrict their argument to suggesting any procedure of test and do not specify how tests should be executed in different contexts. As business managers have to decide in a transcontext manner, they need a procedure to 'test' the validity of incommensurable outcomes of specific discourses. Therefore, the problem is only transferred to the meta-level. Habermas's idea of idealized discourse (1981) uses the metaphor of the forceless force of the better argument. But according to Rooney and Schneider's postmodernist concept of different reasons and tests in different contexts, there can be no valid yardstick for what is 'better'. Therefore, their solution does not solve the problems of a multitude of approaches and of eclecticism.
3. Most importantly, from a pragmatic point of view, Rooney and Schneider's proposal seems unacceptable when every assertion is to be crafted as a declaration and has to be reasoned as well as exposed to tests, and where the tests are conceived of as discourses. This would slow down if not paralyse business activity and create an environment of bureaucracy and hesitation that seems rather in opposition to entrepreneurial spirit.

Is it possible, instead, to design a management of knowledge which is based on keeping the concept at the edge of different meanings?

It seems that typologies only transfer the crucial ontological, phenomenological and epistemological questions about what knowledge is and how we can know

about it, to the level of categories, which in turn need to be defined but are often only illustrated in a casuistic manner (Nonaka and Takeuchi, 1995). Attempts to sharpen the definition by restricting knowledge to interpersonally shared and tested propositions only defer the problem to the level of meta-discourse. Should we not therefore follow Boulding's advice (1966) and let go of philosophical questions? Will it make a difference at the level of concrete knowledge management projects whether we follow a natural science approach, a social system approach or a postmodern approach? I propose that it will. Therefore, I suggest distinguishing between two kinds of ignorance about knowledge blind ignorance and enlightened ignorance.

The first position would replace reflection with axioms or premises and close an otherwise uncomfortably open set of interrelations by following a one-sided view gained by imputation. This fixation allows for proceeding with concrete action. For example, following a natural science view we can design by deduction what knowledge is needed at which positions in an organization, and supply this knowledge 'just-in-time' to the holders of those positions in the most efficient way. There seems to be visible progress, money spent on related projects is legitimized by tangible results in the form of hardware or software, the value added is supposed to be an automatic consequence of the accessibility of data structures which are equated with knowledge.

If, however, one declares in a dogmatic manner that knowledge is idiosyncratic, elusive, context bound and can only be enacted by humans in active confrontation with their peers, one will focus uniquely on conditions that allow for such interpersonal enactment and thereby neglect the interaction with a person's physical environment. Obviously, practice rarely follows those concepts religiously, but melts different perspectives while following traditions, benchmarks or procedures of trial and error. The problem is that it does so unconsciously. What the German language calls the normative power of the factual is, by definition, not the best of all conceivable solutions. Organizational actors might buy methods and tools from consultants and software vendors that contradict their declared knowledge management vision without even noticing the tension. If they encounter problems such as a lack of acceptance of those methods and tools, this is often not related back to principle questions. Instead, it is interpreted as a consequence of bad leadership and/or personal deficiency on the part of users.

However, if one engages in philosophical discourse on principle questions without being able to conclude in a immaculately logical manner, one might increase the gap between talk and action and never proceed to any knowledge management activity.

Can people outside academia keep a concept open when they have to close it each time they decide to implement something that is supposed to fulfil the purposes of knowledge management? Are academic scholars open to double-loop learning? (See Argyris' pessimistic account on this at the OKCL conference in Athens, 2002; published 2004.)

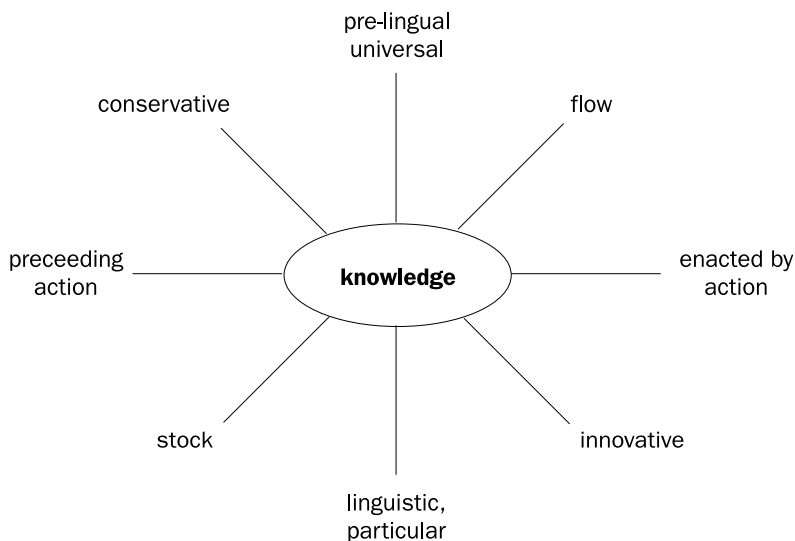
According to Spencer-Brown (1997), borderlines are established by drawing distinctions. Such distinctions highlight the included and darken the excluded while masking out the activity of drawing the distinction. This insight inspired

Derrida (1988) in his concept of ‘balanced gliding’ and Foucault (1992) in his understanding of critique as a way to balance contradictory views so that both are kept within the horizon of discourse and neither is oppressed. Taking a deconstructive view focuses attention on how knowledge and knowing are constructed by distinction in different discourses and how they are separated from ignorance and inability. This implies that academics and practitioners need to dedicate time and energy to an exploration of the concept of knowledge, not to close it by a ‘final’ definition but to keep its tensions present in further thinking and actions. As the concept is so deeply linked to our definition of the world (realism versus idealism or constructivism) and to our understanding of how we know about this world (positivism versus relativism) there can be no ‘final’ definition other than by arbitrary standards of inclusion and exclusion. Individual thinkers and participants of discourses who apply balanced gliding or the law of form or Foucault’s idea of practical critique will have to live on with fuzziness and ambiguity. What makes such fuzziness useful as an ‘underlying’ factor of knowledge management activity is its sensitivity for complex relations, for contingencies and for the interplay of various dimensions in the process of knowledge-based value creation. This implies the principle that less may be more—something that is hard to accept in activity driven western cultures.

So far, this article’s contribution to discourse has centred on the meta-level of second-order observation. It has talked about different approaches to defining knowledge, but not about the definitions themselves, other than by illustration. Therefore, it is necessary to sum up different poles or extremes where definitions of knowledge have been anchored. The space of balanced gliding, of practical critique or of (productive!) deconstruction is thus defined by the poles of understanding constructed in Figure 1.

The proposed solution to the tensions illustrated in Figure 1 is the following. In the academic, as well as the business, community, one should understand knowledge

Figure 1 Different extremes to define knowledge



as a discursive search. At times, concrete solutions will tend towards one pole and at other times towards the other, as pointed out earlier. At times, they will be chosen very quickly, if there is pressure due to windows of opportunity. However, even when closing open questions by action, actors do not close mentally. They remain alert and try to maintain their options by deciding on solutions that are reversible and open to learning from feedback. In the practical field this may mean, for example, not sinking money into mega-IT-based solutions and not seducing resistant users with expensive incentives. In the academic community, this may mean stopping fruitless controversies between so-called 'hard' and 'soft' concepts with the aim of deciding on one at the expense of the other. Instead, questions could cover issues such as: What can we gain from views 1 to n ? Which must be considered if we try to design interfaces for solutions which rely on different views? It is this awareness of multiple perspectives in their own right, which I term enlightened fuzziness. Only after having thought about many alternatives can a sound decision be taken for one of them and later easily reversed. In contrast to this, are those selections directed by tradition, coincidence or dogmatic insistence on a one-sided view. This article has attempted to argue that such unexamined fuzziness is detrimental to the vision of knowledge management. It has suggested the metaphor of 'enlightened ignorance' instead, which is a purposeful oxymoron: considering the contradictory nature of different meta-understandings of knowledge, knowledge management needs confronting paradox.

Conclusion

I started from the assumption that knowledge management aims at the better generation and better use of a resource that is expected to create a competitive advantage. What can be called 'better' has thus to be gained from a strategic purpose. This implies that knowledge in a business context is not an aim in itself, and that the accumulation of knowledge will not suffice to make a company more successful. A closer look at the nature of sustained competitive advantage from a research-based view requires it to rely on configurations of resources that create visible value to customers while being difficult to imitate or substitute. This applies more to capabilities than to their raw material, i.e. knowledge. Capabilities can be interpreted as the interplay of knowledge and knowing in a specific context.

Although everyday language uses those concepts with a positive connotation, they should be treated as neutral in academic analysis. To understand whether they constitute capabilities or rigidities, many authors have called for better definitions of those concepts (Desprès and Chanvel, 2001; Schreyögg and Geiger, 2003). The strategic literature applies concepts that are too abstract and too inclusive to direct managerial action and/or allow for empirical testing. This is also reflected in the practical field, where a multitude of very diverse projects—IT related, HR related, customer related—are realized under the umbrella 'knowledge management'.

Therefore, this article explores whether a sharper definition of the concept of knowledge is possible. It evaluates the proposal by Schreyögg and Geiger to restrict the concept to explicit propositions which have proven themselves in discourses. Furthermore, it looks into various attempts to circumvent the problem of nebulous concepts by drawing distinctions that result in typologies.

Both attempts to clarify the concept of knowledge as a grounding for knowledge management are insufficient because they only transfer the problem to other levels. The 'solution' of discourse places emphasis on validity and transposes this problem to a meta-level, where arguments from different discourses are confronted and may be incommensurable. The 'solution' of typologies defers the problem to the definition of the dimensions constructed by distinctions and very often remains unclear with regard to how they interact.

One has to recognize that the problem is philosophical in nature. It depends on how we conceive of reality, insight, language and action. Although academic authors and practitioners often refuse to get involved with philosophical questions because they cannot produce definite answers, thereby contributing to an impression of futility, they are well advised to confront the challenge. Otherwise 'solutions' realised on the level of concrete actions, such as yellow pages, knowledge maps, communities, e-documents, to name just a few, will 'backfire' and people addressed by those measures will react to contradictions between declared knowledge management visions and knowledge management methods and tools.

It is suggested that Spencer Brown's law of form and Derrida's balanced gliding be applied to the concept of knowledge in organizations, so that the people involved will cooperatively construct the object of their knowledge management activity while performing it in a reflexive manner. To put it in another way, after discourse, they may still be confused, but at a higher level—one that will allow for knowledge management activities that are better suited to the multifaceted character of the phenomenon in question.

Notes

1. When talking about a phenomenon that is to be defined or reflected upon, we cannot presume what needs to be explained by using a determined notion. I therefore use the term 'knowledge' as a wildcard for the different approaches that are known (and yet unknown) until further exploration.
2. As I show later, our knowledge about the 'nature', characteristics or fundamental patterns of what we as observers call 'humans' or 'knowledge' has undergone many changes over the history of thought. So what I precisely refer to is a quantity of (not yet disproved) hypotheses that partly contradict and partly complement each other.
3. Again, using the term 'to explicate or to externalize' implies a dilemma. As I put forward later, I consider knowledge and knowing to be two sides of a coin that serves the purposes of survival and development. Here I point to the tendency in management to professionalize—that is, to turn from experience to a meta-structure imposed on it.
4. I define turbulence as a dynamic pattern of change, characterized by high frequency and by irregularity as well as by major impact of changes in those phenomena which are being observed.

5. Even Popper holds that it is our intentions imposed on reality which drive our effort to know (cf. Popper, 1991: 16) which earlier had been accentuated by Karl Marx.
6. For Immanuel Kant our knowledge of space, time and causality is an 'a priori' with which our creator has endowed us. Among other approaches especially modern neurology urges us to question our concepts of reason and reationality.

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