Organization

http://org.sagepub.com

The Significance of Distinctiveness: A Proposal for Rethinking Organizational Knowledge

Georg Schreyögg and Daniel Geiger

The online version of this article can be found at:
http://org.sagepub.com/cgi/content/abstract/14/1/77

Published by:

$SAGE Publications

http://www.sagepublications.com

Additional services and information for *Organization* can be found at:

Email Alerts: http://org.sagepub.com/cgi/alerts

Subscriptions: http://org.sagepub.com/subscriptions

Reprints: http://www.sagepub.com/journalsReprints.nav

Permissions: http://www.sagepub.com/journalsPermissions.nav

Citations (this article cites 31 articles hosted on the
SAGE Journals Online and HighWire Press platforms):
http://org.sagepub.com/cgi/content/refs/14/1/77

The Significance of Distinctiveness: A Proposal for Rethinking Organizational Knowledge

articles

Georg Schreyögg

Institute of Management, Free University of Berlin, Germany

Daniel Geiger

Advanced Institute of Management Research (AIM) and
Management School, University of Liverpool, UK

Abstract. *In this article we attempt to provide some reorientation for the use of the concept of knowledge within management studies. The point of departure is the striking discrepancy between the great importance nowadays attributed to knowledge (knowledge economy, knowledge resources, knowledge societies, knowledge-intensive firms, etc.) on the one hand and the vague and blurring conceptualizations of knowledge on the other hand. Informed by philosophy of science a revised concept of knowledge is suggested that basically draws on communication and reflection. The core idea is that knowledge should be treated as a distinctive term which allows for a differentiation between knowledge and non-knowledge. The suggested concept therefore makes discursive examination a central part of the notion of knowledge. In the final part we attempt to demonstrate the possible benefits of such re-orientation by analysing both its theoretical and practical implications.* *Key words.* *epistemology; knowledge-work; knowledge-societies; organizational knowledge; philosophy of science*
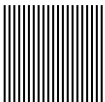
During the last decade, knowledge has come to the fore in management and organization studies. Much of this interest has been driven by the insight that knowledge is becoming ever more central in creating value

for organizations and, more generally, for the entire post-industrial world. Knowledge is considered to be becoming the most significant resource in the economy of the 21st century (David and Foray, 2002; Krogh and Roos, 1996). Correspondingly, corporations are assumed to be building their competitive advantage more and more on superior knowledge and their practices (Barney, 1991). Knowledge work and knowledge-intensive firms figure prominently in this context (Alvesson, 2004; Robertson et al., 2003; Spender, 1996b; Starbuck, 1992). The notion of knowledge-intensive firms refers to organizations, such as accounting firms, high-tech corporations or consultancies, whose essential asset is supposed to be knowledge, or as Alvesson (2001: 863) puts it: 'companies where most work can be said to be of an intellectual nature and where well-educated, qualified employees form the major part of the workforce'. The central resources of these firms are specialized expertise and sophisticated patterns of problem-solving. In a similar vein, authors even propose re-conceptualizing organizations as *knowledge systems* (Krogh and Roos, 1996; Tsoukas and Mylonopoulos, 2003) and suggest that all organizational activities be analysed in terms of knowledge-based activities: knowledge creation, transformation, distribution, utilization, etc.

On a broader level industrial societies are assumed to be transforming themselves into *knowledge societies* (David and Foray, 2002; Stehr, 1994) where knowledge and knowledge work play the salient role. These societies are supposed to be organized around knowledge and its knowledge assets (Bell, 1973; Boisot, 1998). Related concepts focus on the growing importance of social capital and intellectual property (Tsai and Ghoshal, 1998). The notion of knowledge society refers, however, not only to the high importance of knowledge, but also to the dramatic increase in the amount of knowledge available and its vastly improved accessibility (Rifkin, 2000).

No wonder, then, that as a result of this recognition of the importance of knowledge, many practitioners and theorists have become committed to finding out ways to manage knowledge, i.e. improving the ways to handle the knowledge resource and leverage the knowledge asset (Boisot, 1998; Newell et al., 2002). Even a new discipline, knowledge management, has emerged.

All these trends and suggestions refer explicitly to knowledge, but what do they actually mean by knowledge? What is the concept of knowledge guiding these approaches and developments? Although there seems to be broad agreement on the great significance of knowledge there is not much elaboration on the notion of knowledge itself in this new debate and related organizational studies.

The rapidly growing perception of the importance of knowledge for organizations and corporations has not yet yielded sufficient clarity as to what the concept means (for a similar diagnosis see Alvesson and Kärreman, 2001; Tsoukas and Vladimirou, 2001). To the contrary it appears that the increasing use of the term in IT and management studies has rendered its meaning more and more blurred. The far-reaching conclusions on the

78

salient importance of knowledge do not work, however, without a clear understanding of what knowledge means. It therefore seems to be a worthwhile endeavour to revisit the notion of knowledge.

Common Notions of Knowledge in Knowledge Management

In the bulk of knowledge management literature knowledge is used as an umbrella notion that is supposed to cover a broad range of features: skillful behaviour, emotions, norms, routines, narratives, values, cognitions, etc. In short, it covers more or less all features that may enable and enhance effective action. The often quoted definition of knowledge provided by Davenport and Prusak (1998: 5) is a good example for this broad understanding of knowledge: 'Knowledge is a flux mix of framed experiences, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers'. Seen this way knowledge covers all explicit and implicit kinds of features actors make use of. Often, such a broad definition of knowledge is advocated in order not to miss any of the potential action enablers (Spinner, 1994: 24).

Recently, this broad understanding of knowledge has been essentially complemented by an understanding of knowledge as 'knowing-in-practice' (Gherardi, 2001; 2006) echoing the 'practice turn', e.g. the growing interest in practices in organizations (Barley and Kunda, 2001; Blackler, 1995; Nicolini et al., 2003). This 'epistemology of practice' (Cook and Brown, 1999) starts with the conviction that opposed to the classical paradigm of rational behaviour knowledge is nothing abstract out there, rather it cannot be separated from practice (Wenger, 2000). Knowledge therefore is seen as being basically situated (Tsoukas and Mylonopoulos, 2003). By implication studying knowledge means studying practices (Nicolini et al., 2003; Yanow, 2000). Knowledge is no longer conceived as something that could be possessed. It rather has the character of process (Orlikowski, 2002: 251).

The underlying logic of this knowing perspective does not differentiate between action and the specific knowing of an actor. Or as Schön (1983: 49) puts it:

> When we go about the spontaneous, intuitive performance of the action of everyday life, we show ourselves to be knowledgeable in a special way. Often we cannot say what it is that we know … Our knowing is ordinarily tacit, implicit in our pattern of action and in our feel for the stuff with which we are dealing. It seems right to say that our knowing is *in* our action.

Maturana and Varela (1998: 29) carry this thinking one step further by stating that 'all doing is knowing, and all knowing is doing'. Knowledge is no longer a separate entity, it exists only within the process of acting; knowing and action become a conceptual entity. Whether the actor's knowledge is explicit (understood) or implicit (not understood) makes no

79

difference; knowing however is assumed to be primarily tacit in nature (Orlikowski, 2002: 251).

Whilst varying in rigour and intellectual roots all these broad conceptions of knowledge share some basic assumptions: quite obviously, they all start with action and the mastering of challenges through knowledgeable action. This focus on action and successful problem-solving—as opposed to the possession of knowledge—is not an arbitrarily chosen point of departure. The guiding idea stems from studies in everyday life, its challenges and their routinized mastering. Salient here is the conception of life-world, or to use the original German term: *Lebenswelt* (Husserl, 1948; Schütz and Luckmann, 1989). Within this stream of thought, our actions are based on our construction and understanding of the world. Berger and Luckmann (1967) have specified the term knowledge in this context as the *representation of our world*. In a process of externalization, objectification and reification a shared understanding of our world is constructed which at the same time builds the knowledge of a respective community. Knowledge is the everyday foundation of our construction of the world and our knowledge represents the construction of reality. Seen this way knowledge is not something special, something to be cultivated in special scientific institutions such as universities and academies; rather, knowledge is simply the basis of our life, it is the collective cultural repository of a community (Collins, 1993). Since every community needs such a repository for reproducing its existence knowledge amounts to a *ubiquitous* feature in this stream of thought. All actions or praxis taking place within a community use the knowledge of the community as their point of reference, the collectively held knowledge base is ever present; it simply is the foundation of reproduction.

This stream of thought doubtless has greatly improved our understanding of how we construct our world and how knowledgeable (socialized) actors get things done. It provides powerful explanations when studying the underlying logic of everyday action and socialization processes.

These research questions, however, do not really match with the issues addressed in the field of knowledge and knowledge management. As depicted in the introduction, the knowledge themes which figure most prominently in the current debate are knowledge society, knowledge work and the growing importance of knowledge-intensive firms. All these themes build on distinctive dimensions such as *exclusivity*, *specificity* and/or *excellence.* And furthermore they all refer explicitly or implicitly to distinctions such as knowledge societies *versus* (former) industrial societies and knowledge-intensive firms *versus* labour- or capital-intensive firms. All these contrasting and distinguishing features evoke the question of whether we can study them adequately on the basis of this phenomenological everyday action theory of knowledge. It is the basic argument of this article that we should treat different things differently, i.e. we doubt that the everyday perspective of knowledge really provides a suitable framework for studying these knowledge issues. This conception misses all those features which

80

build on distinctiveness: the phenomenological understanding of knowledge portrays all societies as knowledge based since knowledge represents any reality construction. It is impossible to understand on this basis the specifics of a knowledge society. And the same holds true for knowledge-intensive firms: all organizational life is based on reality constructions and on knowledgeable action. As a consequence all organizations would be knowledge-intensive and would be so to the same extent. The specifics of the (modern) knowledge intensive firm cannot come to the fore.

Consequently, if we take the current debate on knowledge-societies, knowledge-intensive firms, knowledge management and knowledge as competitive advantage seriously (see the critical remarks by Alvesson, 1993), we have to build a template that allows for differentiating systematically between knowledge societies and non-knowledge societies, between knowledge-intensive firms and firms that are less knowledgeable etc. If knowledge is supposed to build a distinguishing element with a high value for both organizations and societies, it has to be conceived in terms of distinctiveness.

A closer look at Berger and Luckmann's work (1967: 2) reveals that it was not their intention to provide an encompassing conception of knowledge. They focus on a specific sociology of knowledge and do not claim universal application of their notion of knowledge. In contrast, they explicitly concede that there might well be other, more elaborated understandings of knowledge, which are not however in the focus of their study. They even go as far as saying that it would have been better to put the term knowledge in their study into quotation marks to indicate this difference. Thus they were quite aware of the fact that their understanding of knowledge is of limited use when studying more systematic, philosophical conceptions of knowledge.

If we are interested in explaining knowledge societies, knowledge-intensive firms and knowledge driven competitive advantages we therefore need a different framework which focuses on distinctive and exclusive qualities of knowledge; one that allows for drawing distinctions between high quality and low quality knowledge and informs us of what knowledge is and what it is not. For gaining such alternative understanding it seems advisable to consult those disciplines which are used to conceiving knowledge in more distinctive ways.

Knowledge and the Philosophy of Science

The search for the understanding and conceptualizing of knowledge has a long history and has been one of the central subjects of the philosophy of science. Surprisingly enough, this long-standing tradition of reflection on the nature of knowledge has not much been taken into consideration in the debate on knowledge management to date (Grandori and Kogut, 2002: 225).
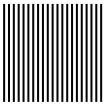
81

Philosophy of science first of all has always aimed at differentiating knowledge from other concepts such as simple opinion or meaning. At the core is the basic distinction between true or false knowledge and a theory of truth that can legitimate that differentiation (Habermas, 1986). It is well known that the philosophy of science has not succeeded in reaching consensus on all of these fundamental questions. It is not possible to recapitulate here this far reaching and long standing debate with all its different streams. We rather suggest relying on a most advanced and—at least in our discipline—broadly accepted stream, namely philosophy of communication which provides a suitable template to reflect on knowledge and its prerequisites. This philosophical stream has its very basis in the 'linguistic turn' (Bergmann, 1958; Wittgenstein, 1922) which holds, roughly speaking, that our understanding of the world is basically bound to the language we use (Wittgenstein, 1922). Opposed to the positivist idea of objective truth, the linguistic turn claims that any attempt to gain experience of the world is imprinted by the language we use to understand the world. We therefore cannot escape the construction of our language (hermeneutic circle). There is no 'innocent' or direct experience of the world which is independent of an observer or as Gadamer (1976: 19) put it: 'Human experience is essentially linguistic'. Any observation is therefore bound to the constructions of observers (von Foerster, 1982). Seen this way one important element of the philosophy of language is its constructivist position: the world cannot be discovered as it is out there, rather any understanding of the world is bound to the constructed observation through language. A basic and core principle of the philosophy of science presented here is therefore that any form of knowledge is bound to *linguistic construction*.

This fundamental insight, however, does not imply—as is it is often assumed—that all knowledge is fundamentally subjective and based on individual constructions. Whilst rejecting the positivist idea of objectivity in terms of correspondence with the world out there, the major stream within the philosophy of language introduces another idea of objective knowledge, i.e. objectivity in terms of inter-subjectivity brought about by *joint* linguistic constructions of a community (Habermas, 1995b: 132). The 'epistemic authority' (Habermas, 2003: 244) which is able to claim for objectivity is the communicative practice of a community. The very reason for being able to transcend subjectivity basically draws—again roughly speaking—on the fact that language is no solipsistic endeavour it rather is inter-subjective/social by its very nature (Habermas, 1984). Consequently, in this thinking objectivity or truth can be achieved through inter-subjective communication only, or being more precise, through seeking consensus in discourses (Habermas, 2003; Kamlah and Lorenzen, 1984; Toulmin, 1958). Therefore *inter-subjectivity* amounts to the second core principle of the stream of philosophy of science on which we draw here.

To summarize, language based constructions and inter-subjectivity are seen as the core principles for building a distinctive (and not ubiquitous) notion of knowledge. In the next section we aim to show that they provide a

82

platform for developing an understanding of knowledge that can give more meaning to the notions of knowledge societies and knowledge-intensive firms. To pursue this purpose it proved to be most promising to draw on the oeuvres of Habermas and Toulmin, thereby outlining a discursive understanding of knowledge.

Towards a Discursive Understanding of Knowledge

As stated in the previous section, knowledge is constructed in social communication processes. Therefore further elaborations have to build on this communicative basis. We are looking for a more distinctive understanding of knowledge than the recent knowledge literature offers. Of special interest therefore are approaches which specify requirements for knowledge or to put it differently: specifications which allow for differentiation between knowledge and non-knowledge.

Life-world versus Discourse

For advancing a distinguishing understanding of knowledge it should first be stressed that communication involves more than words, grammar and syntax it always also contains '*validity claims*' (Turner, 1988: 99). Or as Toulmin (1958: 11) put it: '*Every speech act explicitly or implicitly raises a validity claim*'. These validity claims can be treated in basically two different ways: one possibility is that they are simply believed or disbelieved by the community in which the communication has taken place; the acceptance or rejection of validity claims goes without saying, i.e. they are not explicitly raised. The validity claims remain implicit; they do not amount to a problematic theme in a discourse. In case of acceptance the community simply takes the propositions for granted, integrating them smoothly into their thinking and acting.

This unproblematic handling of implicit validity claims embedded in daily routines builds the sphere of the communicative practice used in everyday life—the aforementioned 'life-world' (Habermas, 2003: 19). As actors jointly handle effectively their speech acts, the life-world is perceived as being their 'objective' reality (Berger and Luckmann, 1967). It forms the '…culturally transmitted and linguistically organized stock of interpretive patterns' (Habermas, 1984: xxvi).

In contrast to Schütz (1989) and Berger and Luckmann (1967), the philosophy of language does not stop at describing and explaining the functioning of life-world, it rather introduces a second level (see for a comprehensive overview Habermas, 1984). It is conceived as a meta-level at which the modus of *reflection* comes to the fore. Carrying the issue of validity claims further this second level builds the sphere where claims are explicitly raised and their *validity amounts to a basic question within a discourse.* This idea does not make the case of transferring all validity claims to this discursive level, it is conceived as a special treatment for conflicting

83

or extraordinary claims. Or, as Habermas (1984: 18) put it, for conflicting claims which '…can no longer be repaired with everyday routines and yet are not to be settled by the direct or strategic use of force'. In all those cases, including all sorts of scientific claims which are designated as problematic claims per se, the validity of a claim requires clarification, needs a reflection on whether the underlying propositions can be accepted or not. That means that we enter the sphere of argumentation with its own prerequisites and rules. In this view argumentation means '…that type of speech in which participants thematize contested validity claims and attempt to vindicate or criticize them through arguments' (Habermas, 1984: 18; see also Toulmin 1958).

On our way to reconsider organizational knowledge and to find a template for distinctive criteria the previous discussion allows distilling two further distinctive characteristics of knowledge: the first is that there is a close connection between knowledge and validity claims. And the second is that to draw distinctions in the realm of knowledge can only mean discussing claims explicitly in the form of argumentation. The rules of argumentation need further elaboration.

From a philosophy of science point of view not all explicit communicative interaction equals argumentation, there are specific requirements such interaction has to fulfill. *First* of all, whilst being relieved of the pressure of immediate action, participants of an argumentative discourse have to be able to understand the subject which is on the agenda of the discourse, meaning that they have to have some understanding of what the issue under investigation is. *Secondly*, in order to substantiate an argumentation participants have to provide (good) reasons for or against a specific claim. Reasons can be of varying nature: empirical, logical, aesthetical, but it is '…only with reasons, whether the claim defended by the proponents rightfully stands or not' (Habermas, 1984: 25). Argumentation is a dialogue designed to examine reasons provided to defend a claim. *Thirdly*, the notion of argumentation also implies that participants have to accept the normative power of reasons, i.e. they have to accept reasons if they turn out in the discursive process as the better ones and they have to drop claims in case the reasons provided for them did not hold. This position has therefore also been called consensus theory of truth (Habermas, 1995b) which brought about the differentiation between a factual (arbitrary) and a true consensus reached on the basis of argumentation and good reasons.

There are lots of philosophical theories of argumentation and reasoning. Among them Toulmin (1958) and Toulmin et al. (1979) and his reconstruction of the logic of argumentation processes stands out. According to Toulmin (1958: 90), the general logic of an argumentative process is as follows: if someone puts forward a claim (C), this claim refers to some data (D) given which allows putting forward the claim. A validity claim is raised in case the conclusion which allows moving from D to C is called into question. In this case the proponent has to give reasons that support his/her claim, i.e. he/she has to explain what allowed him/her to conclude from D to C.
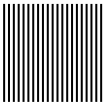
84

The conclusion has to be supported by warrants (W), which have to be of a different logical type from data, otherwise it would just be a repetition of what has been said already. Warrants are logical deductions which allow concluding C from D enforced by what Toulmin (1958: 11) calls Backing (B). Only in this case, a conclusion (C) can be drawn that counts as an *argument*. This prototypical structure of Toulmin's theory of correct argumentation is presented in Figure 1.

Figure 1. Toulmin's Scheme of correct argumentation (Habermas, 1995a: 163)
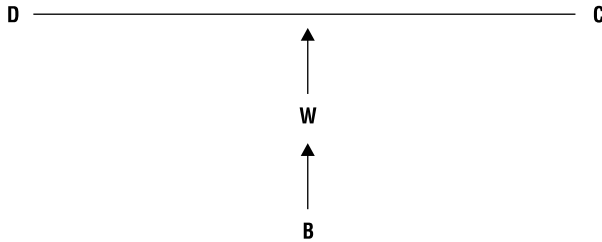
Discourses are necessary for clarification; in case validity claims are called into question an argumentation process (discourse) has to be started in order to seek the *best and most convincing argument*. Argumentation processes are finished by consensus which relies idealistically only on the force of the 'better argument'. It is a paradoxical force because it is conceived as being forceless: 'the forceless force of the better argument' (Habermas, 1995a: 161, translation by the authors).

Knowledge as Discourse

The differentiation advanced above between the naïve life-world on the one hand, where validity claims are not reflected and the sphere of argumentation/discourses on the other hand, in which the validity of claims is thematized and argumentation processes take place, provides a suitable template for developing a distinctive understanding of knowledge. In the tradition of philosophy of science knowledge is bound to reflection as opposed to naïve opinion, spontaneous action or meaning. Accepting this line of reasoning implies that the life-world is not the sphere of knowledge because its operations are based on implicit unreflected beliefs, meanings, tradition, etc. If we equate the implicit beliefs of life world action with *knowledge*—as is suggested in the bulk of the more recent literature on organizational knowledge—then we lose the very basis for discussing the features in the knowledge debate such as knowledge-intensive firms or knowledge-societies which all build on distinctions. We therefore advocate the case of restricting the notion of knowledge to all those propositions that have been made subject to an argumentative process in the sense outlined above. Good reasons and argumentation processes are at the centre of this understanding: 'Arguments are the means by which inter-subjective recognition of a

85

proponent's hypothetically raised validity claim can be brought about and opinion thereby transformed into knowledge' (Habermas, 1984: 25). By implication, in this view the notion of knowledge can only be attributed in case the validity claims of a proposition have been called into question and have turned out as valid in an argumentative process. Within this stream of thought knowledge can only be generated within inter-subjective discourses, where validity claims are evaluated in the light of reasons. In order to avoid misunderstandings it should, however, be stressed that knowledge discourses are not completely detached from life-world; rather all knowledge has its roots in the sphere of the life-world. The claims have been liberated from the life-world processes and brought to the sphere of reflection. So the spheres are still connected, the differentiating feature is whether validity claims are reflected or not.

In sum, our argument advances a clear distinction between the everyday opinions, skills and habits used within the life-world and knowledge which is conceived as the outcome of inter-subjective reasoning processes taking place within discourses.

Sometimes the notion of knowledge elaborated here has been equated with a positivist understanding of knowledge. This is a serious misunderstanding. The position advocated above does not rely in any way on objectivity in terms of corresponding with a real world out there (Tarski, 1946). It rather relies on a constructionist position which holds that truth is bound to the linguistic constructions we use to understand the world and to build our arguments. The criteria to evaluate the reasons originate from the respective discursive community and are therefore the outcome of an *inter-subjective social construction* (Habermas, 2003; Kamlah and Lorenzen, 1984; Mittelstrass, 2001; Toulmin, 1958). And to avoid a further misunderstanding it should also be stressed that this philosophy of knowledge does not subscribe to ideas such as final truth or irreversible proof. As the truth of knowledge is construed in terms of discursive consensus, by implication the reached consensus is always fragile. One can never claim for final validity as the outcome of a discourse is principally prone to fail; it is always possible (and as is well-known: it happens more often than not) that knowledge that has previously been accepted as being valid will prove false later on when new reasons have been brought into a subsequent discourse. In the latter case, one would call it *false knowledge*, i.e. knowledge that was previously to be considered true (Luhmann, 1998). From a knowledge management point of view false knowledge should not be forgotten or 'unlearned' (Argote, 1999). It has still a function in the collective memory because it can provide valuable orientation for future discourses (Luhmann, 1998: 170).

Summarizing the conclusions drawn so far the principles that follow emerge as key characteristics of knowledge (in the sense defined above):

The most fundamental universal requirement is that knowledge builds on some kind of statement or assertion. This basically implies that knowledge is communicative in nature; it cannot exist outside of language.

86

Knowledge is linguistically constructed in a community of communication. There is no knowledge without communication.

However, the communicative dimension, while necessary, is not sufficient for qualifying an assertion as knowledge. Acceptable claims have to be differentiated from non-acceptable ones. Such differentiation can only be reached if the core requirements of any discursive practice are fulfilled. Claims cannot be evaluated (discussed, reflected, accepted, rejected, etc.) unless they are substantiated by reasons. As any assertion puts forward a validity claim, explicitly or implicitly, the proponent must provide reasons that support his/her claim (Toulmin, 1958: 11). In short, knowledge demands reasons. There is no knowledge without reasons.

Reasons, however, can be good or bad, i.e. acceptable or not acceptable. Knowledge therefore needs not only reasons, but *good, i.e. acceptable* reasons. Reasons turn out as good when they have successfully passed a discursive evaluation or justification procedure. By implication, there is no knowledge without good or more precisely consented reasons.

It is important to note that the criteria used to differentiate acceptable from unacceptable reasons (and therefore also knowledge from non-knowledge) are themselves discourse dependent, or as Toulmin (1958) has put it: *field-dependent*. There are no universal standards for evaluating knowledge; rather, each field or discourse develops its own accepted standards. Often there are even competing standards across discourses in evaluating reasons and different ways of building reasons: theoretical deduction, practical exploration, experimentation, etc. (Habermas, 2003; Janich, 1996). And as is well known from organization studies, more often than not the different streams call the criteria from other ones into question.

This brief discussion elucidates at the same time that knowledge cannot be considered an exclusive product of one particular field, namely science, as has been advocated by philosophy for a long time. Rather, scientific knowledge represents just one type of knowledge that fulfills the criteria outlined above. Other fields are likely to generate other types of criteria and therefore other types of knowledge, such as legal, aesthetic or business knowledge. Knowledge therefore differs according to the evaluation criteria used within a certain discourse/field: 'The validity of our knowledge claims depends on the appropriateness of our argumentation by which we support them and our standards for evaluating them are field-dependent' (Toulmin, 1958: 209). As a result, different knowledge communities based on different types of field-dependent knowledge criteria are likely to co-exist. These different knowledge types can enhance each other, contradict each other or simply co-exist. The question of how to handle conflicts arising from overlapping or competing knowledge types is a hotly debated one. It refers to another long-standing debate on the (in)commensurability of contexts (Toulmin, 1958; Scherer, 1998; Scherer and Steinmann, 1999; see also the special issue of *Organization* 5/2 1998). A recapitulation of this debate is, however, due to space limitations beyond the scope of this article and not absolutely necessary for carrying forward our argument.

In a next step we will explore the theoretical and practical implications of this reformulated conception of knowledge in organizations.

Organizational Knowledge and Beyond

The following section is designed to explore the consequences of the suggested notion of knowledge for the knowledge debate in management studies. We aim to demonstrate how the important issues briefly depicted in the initial part of this article such as knowledge-societies, knowledge-intensive firms and knowledge work can profit from this reorientation. Our proposition is that by being based on a more distinctive notion of knowledge these concepts can be understood in a more meaningful way enabling us to account for the specificities of knowledge. First of all, however, we try to review the boundaries of the knowledge debate in the light of this revised understanding of knowledge. Of particular interest here is its relationship to the most salient and, at least for a long time, most popular conception in the field of organizational knowledge, namely tacit knowledge.

The distinction between explicit and tacit knowledge undoubtedly plays a major role in the current debate on organizational knowledge (Gourlay, 2003; Nelson and Winter, 1982; Nonaka and Takeuchi, 1995; Spender, 1996a; Subramaniam and Venkatram, 2001). In this stream of thought explicit knowledge is understood as codified knowledge, i.e. that kind of knowledge that is verbalized, well understood, transferable and storable in archives. It is not bound to a specific person and his/her skillfulness. Polanyi (1966) therefore calls it 'disembodied knowledge'. Explicit knowledge refers to facts and rules that can be documented and can be reproduced by applying specific construction rules. Ryle (1949) calls explicit knowledge 'knowing what'.

In contrast, tacit knowledge relates to all those aspects of individual proficiency which are non-verbal in nature and cannot be explicated. It starts with the observation that individuals can master complex tasks without being able to explain how they got them accomplished. They act on the basis of reliably disposable knowledge without a clear understanding of its functioning. Tacit knowledge is thus assumed to enable action in a tacit way. An individual acts on the basis of something that he or she 'knows' but cannot describe in detail, let alone explain. Ryle (1949) therefore calls it 'knowing how'. Tacit knowledge is considered a special competence of a person which cannot be separated from the knowing individual and this is why it is often called 'Personal Knowledge' (Polanyi, 1958). Tacit knowledge represents a complex capability, including bodily competence, in brief the knowledge is 'embodied' (Polanyi, 1966). As a logical consequence, tacit knowledge cannot be described in abstract, it can only be actualized by acting and is bound to the context of action (Cook and Brown, 1999: 387; Neuweg, 1999).

Tacit components are without doubt extremely important features in understanding effective action, but is it really elucidating to conceive of this

88

capability as knowledge? And what exactly does the notion of knowledge mean in this context? The understanding of knowledge as introduced above calls here for drawing clear distinctions.

If we compare, it becomes obvious that both confirmed propositions and tacit components refer to the basis of effective action, but they do so on totally different dimensions. The first one represents a cognitive dimension; the second refers to an activity. The tacit knowledge is far beyond any traditional understanding of knowledge and the criteria specified above in particular. In a way it is the opposite dimension; it does not exist in verbal form and even more than that, it cannot be verbalized by its very nature. Consequently, it cannot become subject of a reflection process, its validity claims cannot be supported by good reasons and be tested by any discursive evaluation procedure. It can be observed and imitated but not logically analysed. From a logical point of view one can conclude that the concept of tacit knowledge does not even allow for differentiating between true and false tacit knowledge. Tacit knowledge is conceptually bound to successful action; in case of unsuccessful action there is simply no or not yet tacit knowledge available. By implication in this logic of attribution tacit knowledge is therefore always true. There is no such thing as false tacit knowledge. As the term 'knowledge' basically builds on the logical possibility of a differentiation between 'valid' and 'invalid', this aspect stresses that the term knowledge does not apply to this type of skilled action. They are two totally different things which should not be confused.

This conclusion does not intend in any way to call the importance of the tacit dimension into question. The importance often claimed for successful everyday practice in organizations cannot and should not be denied. Rather, our argument is that subsuming it under the notion of knowledge is likely to confuse the concept of knowledge and to render it an all encompassing notion with no clear meaning.

As a result of this discussion, we urge the replacement of the misleading term *tacit knowledge* with the term *skillfulness* or *practical proficiency* (see Ambrosini and Bowman, 2001). After all Polanyi himself wondered whether tacit knowledge would not be better understood by calling it *skillfulness* or '*Können*' (Polanyi, 1966: 7).

It is, however, important to realize that tacit skills and (reflective) knowledge are practically not two totally separated dimensions, they rather interact in the very process of acting. Effective action in developed societies requires both knowledge and tacit skills. A surgeon, for example, needs both (confirmed) knowledge about the human body and advanced operation techniques as well as tacit skills, i.e. the manual dexterity and competence to use surgical instruments in a precise way, without trembling, to carry out the operation successfully. Successful deployment of knowledge cannot be applied successfully without tacit skills (Tsoukas, 2003). In acting the one complements the other, but they are not one and the same. They operate on different logical levels which must not be subsumed under the same notion.
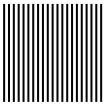
89

Implications and Guidelines for Managing Knowledge

Knowledge Societies

The main proposition at the beginning of this article was that for further discussing current themes of interest in the knowledge debate a more distinctive understanding of knowledge is needed. The aim of the following section is to demonstrate that the redefined notion of knowledge can actually provide a better basis for such discussions. The first theme mentioned was the so-called knowledge society. Contemporary and more advanced societies in general have often been described as increasingly relying on knowledge. Knowledge societies are therefore conceived as a further step in the historical development, a step which overcomes the age of the industrial society (Lowendahl, 1997; Stehr, 1994). As has also been already shown at the beginning the currently preferred action-based notion of knowledge does not really allow catching the specificity of these post-industrial societies. This notion is too broad a concept for providing an adequate understanding of the historical difference marked by the term knowledge society. If all societies are basically based on knowledge—as it is assumed in the phenomenological practice conception—then the term knowledge society would be meaningless and confusing.

In the light of the suggested reformulation of knowledge, the emergence of knowledge societies would mean something specific, namely societies which base their operations increasingly on discursive knowledge by applying discursive validations (see also Gibbons et al., 1994). It would imply that post industrial societies make more and more use of the reflective mode as it has been used in research and science for a long time. Or to put it differently, more and more sections of a society no longer rely merely on the naïve life world with its implicit validations, rather they substitute at least critical parts of it by applying the reflective mode and treating validity claims as problematic (Weingart, 2002: 706). That needs some more explanation.

It is broadly accepted that modern societies can be characterized as functionally differentiated societies which consist of different, functionally specific subsystems each fulfilling a specific task within the society (Luhmann, 1984). Each subsystem or field such as science, the economy or art is seen as operating on its own functional logic using its own distinctions. In the light of the knowledge concept outlined above it is interesting to see that the scientific subsystem is used to reflect on the validity claims in use and treats them as problematic within its discourses. However, as more recent knowledge studies have convincingly shown, it is not only the scientific subsystem which is used to treat validity claims as problematic (Gibbons et al., 1994; Luhmann, 1998; Weingart, 1997). Rather, other fields of the society can rely on and make use of the discursive mode as well (Knorr-Cetina, 2001; Maasen and Weingart, 2001; Weingart, 1997). Carrying this observation further Weingart (2002) has convincingly argued that the notion knowledge-society aims at catching a recent development

90

along this historical line. The different subsystems of a knowledge society are increasingly assumed to treat validity claims as problematic within discursive processes, i.e. a broad spreading of the discursive mode of knowledge generation can be observed across the different subsystems. Knowledge societies would therefore be societies in which many more functional subsystems are used to treat validity claims as problematic than in industrial societies and reflect on them in the light of reasons that come up within their specific discourses.

Whatever the theory of the distinctive feature of a knowledge society is, this brief discussion has attempted to demonstrate that its elaboration is bound to a specific understanding of knowledge which allows drawing a distinction between knowledge societies and non-knowledge societies. We have also tried to show that a broad notion of knowledge cannot provide such basis. The understanding of knowledge suggested above is designed to bring more clarity in this debate and to elaborate on the boundaries of knowledge societies and other historical forms of societies.

Knowledge-intensive Firms

The recent debate on knowledge-intensive firms shows noticeable similarities to the discussion on knowledge societies. Once again the notion refers to a historical development indicating a new emerging type of firm or at least the increasing importance of a specific type of firm. And the notion does not become meaningful unless a distinction is drawn with other non-knowledge-intensive firms. Often this concept has been used in conjunction with the broad action-based notion of knowledge. And we can repeat our concern here that we do not see how this conception can provide a basis for pointing out the specifics of a new type of firm. When elaborating on the features of knowledge-intensive firms we have to have a clear understanding of what non-knowledge-intensive firms are. In other words, we encounter once again the necessity of developing criteria which allow for such distinction.

Carrying further the notion of knowledge suggested above one would say that knowledge-intensive firms are first of all firms which make intensive use and/or generate knowledge in the discursive mode. It is not new that firms make use of knowledge, all industrial firms used to operate knowledge, e.g. in marketing research, operations management or logistics. This knowledge can be used in an unproblematic way, i.e. without taking the validity claims that come with them into question, but rather simply applying it. Proceeding along this line of reasoning it would be difficult to find a distinctive quality of knowledge-intensive firm.

Our suggested notion of knowledge opens another path of thought here: similar to knowledge societies the discursive treatment of validity claims could be interpreted as the critical distinguishing feature. Consequently within this framework a knowledge-intensive firm would have to be characterized as a firm which predominantly reflects on the validity claims in

91

a discursive mode. That could be the case in the whole firm (e.g. in a law firm) or in critical subsystems only, take, for instance, the research and development department of a car manufacturer (see also Jordan and Putz, 2003). By implication, the extent to which a firm is knowledge-intensive can vary in terms of intensity and breadth. Whatever the detail, according to our suggestion the predominant use of knowledge and the discursive generation of knowledge would in our view distinguish a knowledge-intensive firm from a non-knowledge intensive one. Knowledge-intensive firms are supposed to treat knowledge reflexively, as opposed to non-knowledge-intensive firms which are assumed to be operating primarily with non-reflexive modes of communication.

That is not to say that all departments use the same type of knowledge or knowledge from one and the same field. Using and connecting knowledge often requires the coordination of different knowledge qualification processes simultaneously—according to the needs of the specific problem in question. Consequently, organizations may often amount to multi-criteria systems, applying different types of justification procedures and types of discourses at the same time (Tell, 2004). From a practical point of view, organizations therefore have to handle simultaneously different knowledge streams; the relationship between these different discourses varies from time to time, with one stream temporarily dominating over another. Take, for instance, a pharmaceutical corporation that has to use scientific criteria to test the effects and side effects of its products, at the same time dealing with business knowledge on the marketability of these products, legal knowledge on potential damages claims, financial knowledge on the return on investment, aesthetic knowledge on product design and so forth.

To avoid misunderstandings it seems due to point out that this notion of knowledge-intensive firms does not imply an exclusive use of the discursive mode. Knowledge-intensive firms do, of course, also need non-reflexive, narrative forms of knowing and practicing, tacit skills, etc. It is however assumed that they rely in a so far unknown degree on the processing of reflexive, discursive knowledge.

Knowledge Work

If we stay with this line of reasoning the corresponding notion of knowledge work or knowledge worker would also get a reframing. The terms knowledge work as well as knowledge-intensive firms have both been introduced to the knowledge debate to indicate a significant change in working conditions and requirements (Newell et al., 2002). If these are supposed to signify a historical development pointing to a new situation, then once again we need a notion of knowledge that allows for such a distinction. What are knowledge workers supposed to do and what are the distinguishing features of knowledge work that justify the introduction of a new term? The predominant all encompassing notion of knowledge does not get us any further in answering those questions, we would end up in finding that all

92

work is knowledge work. Our suggestion to revise knowledge can shed a sharper light at least from our point of view on the distinguishing features. Knowledge would be conceived as a specific type of work that has to get a handle on discursive knowledge (find out new knowledge, connect older and newer elements of knowledge, e.g. in an accounting firm), call validity claims into question (e.g. when importing knowledge from science or from a consultancy, or when checking whether innovative products conform to governmental requirements), generate knowledge in the discursive mode etc. Once again, we should emphasize that this type of work cannot be thought of as being totally devoted to knowledge handling, there is no successful practice without including other elements such as skills, tacit knowing or intuition, too, but the change signified by the term knowledge work indicates a shift towards the knowledge dimension.

Knowledge as Competitive Advantage

Another feature in the current knowledge debate stresses the strategic significance of knowledge. In particular in the Resource Based View knowledge is assumed to become a critical source for building up competitive advantages in modern market economies (Barney, 1991). Once again, the line of argumentation is similar to the issues discussed above. The general idea is that the conditions of modern competition have significantly changed and brought about the necessity of rethinking the foundations of gaining competitive advantage. And once again the argument focuses on knowledge in terms of a distinctive competitive feature. Consequently therefore knowledge is characterized as a scarce, valuable resource that distinguishes more successful firms from less successful ones (Grant, 1996). Conceiving of knowledge as a ubiquitous element of everyday life obviously cannot match this line of thought; it rather stands in sharp contrast to it.

Only knowledge which is superior, and that means strikingly different from that of competitors can build a source of competitive advantage. In order to become superior knowledge has to be of critical quality. In the light of the suggested notion of knowledge this would mean that the knowledge stands out in terms of good reasons and the underlying validity claims are carefully evaluated and reflected. Such superior features can, following our suggestion, only be identified and guaranteed within a discursive mode of processing. This would at the same time imply that firms which are able to run such a discursive evaluation procedure in a systematic way—and not by chance—are more likely to generate and assure knowledge of a high quality.

In contrast to the other themes discussed above however a caveat is due here. The Resource Based View not only highlights rareness and valence of knowledge but also non-imitability. The latter refers to factors such as social complexity and causal ambiguity. In contrast to the other dimensions our concept of knowledge can obviously not match this one. Discursive reflection is bound to explication and analysis; such a type of knowledge

93

does not automatically imply a protection against imitation. It would appear that the strategic knowledge factors refer to a broader conception which can be better understood by concepts such as capability or competence (e.g Prahalad and Hamel, 1990; Teece et al., 1997). These concepts include knowledge among other ingredients (such as values, motivation, learning, culture) to build superior capability (Leonard-Barton, 1992) and have therefore to be analysed on a different level. Our suggested conception can however provide clarification of the element 'knowledge', what this element actually means and how this element can be generated and sustained as a necessary part of a successful organizational capability.

Knowledge Management

The suggested discursive understanding of knowledge also sheds light on some aspects so far largely neglected in knowledge management. This holds true particularly for the management of knowledge quality and related questions such as:

- How to differentiate between high quality knowledge and low quality knowledge in organizations;
- How to handle the knowledge evaluation procedures;
- How to identify (harmful) false or outdated knowledge, etc.

These few questions already indicate that quality builds a highly important dimension of knowledge management. The suggested conception of discursive knowledge can provide a well-founded platform to develop practical guidelines for such an endeavour. According to this conception organizational knowledge management would have to establish or maintain already used discursive procedures for examining critical and controversial knowledge or more precisely its validity claims. Those procedures could cover previously unreflected and taken for granted knowledge claims as they are inherent in, for instance, organizational narratives (Schreyögg and Geiger, 2005).

Interestingly enough a closer look at knowledge management practices in organizations reveals that a couple of firms make already use of knowledge evaluation procedures. Among those is, for instance, NASA. In this high risk organization specific review committees have been established which are designed to assess carefully critical parts of newly developed rockets or satellites (Jordan and Putz, 2003). The evaluation routines practiced in these review committees come very close to discursive reflection of validity claims as outlined above. Another interesting example is Shell International. This organization has established review committees assigned to evaluate the knowledge produced within their global virtual communities of practice (Schreyögg and Geiger, 2005). These review committees check the validity claims of generated or transferred knowledge in response to 'urgent requests'. The knowledge generated for instance by drilling engineers is made internally accessible via electronic platforms. It proved necessary to have a qualifying look at the knowledge processed within the network before
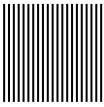
94

it is disseminated company wide. Also Xerox has set up similar review committees in order to decide what from the knowledge communicated informally among their copier repair technicians (Orr, 1990) should be captured and entered in a company wide database (Brown and Duguid, 2000).

Discussion

Our conclusions strongly advocate a new dimension of knowledge management. As it is the case with all proposals our suggestion for reformulating the notion of knowledge also has its limitations. Our suggestion has not yet accounted for institutional and behavioural factors that might limit or even inhibit discursive reflection of knowledge in organizations. For instance, the power structure may exert strong influence to keep all those critical features which do not conform to the interest of the dominant coalition out of the discursive evaluation (Crozier and Friedberg, 1981). Organizational politics, impression management, issue-selling (Dutton and Duncan, 1987) are also salient factors likely to hinder the effectiveness of discursive evaluation procedures. It is also implicitly assumed that a discursive assessment and the clarification of the validity claim is always possible. As a matter of fact under circumstances of high ambiguity and uncertainty it might well happen that no agreement is achievable since the issues under discussion are not yet clear enough. Habermas (1986) also pointed quite early to such limitations of discursive evaluation in practice.

Also, people used to working in strict hierarchical settings may have problems engaging in discursive processes which are organized around examining reasons and not around order and obedience. The discourse establishes a second authority, namely the best reason (and not the hierarchical order) which may cause problems of acceptance or conflicts. In other words, the institutionalization of discursive evaluations cannot occur without the organization's sufficient backing of the new procedures, its willingness and skills to get the discursive orientation working. This relates to the recent discussion on running multidimensional organizational forms [see for example Nonaka's Hypertext organization (1994)].

In addition, personal factors may also play a limiting role in running effective evaluation procedures. Some people lack the rhetorical qualities to defend their reasons in an appropriate way. Others may enjoy charismatic attributions offering them the opportunity to substitute fascination for sound reasoning. And there are many other potentially deforming personal factors such as escalating commitment, halo effects or biased perception.

On the one hand all these factors can undoubtedly distort discursive evaluation procedures and therefore limit the effective handling of knowledge in organizations. On the other all the factors cannot call the principle as such into question. They point to very relevant aspects which have to be taken in consideration when conceiving and practicing knowledge in the way suggested here. But they cannot eliminate the basic necessity and logic of processing knowledge on the basis of validity claims.

95

Note

Earlier versions of this paper were presented at the OKLC Conference 2002, at the EGOS Conference 2002 and at the Academy of Management Conference 2004. We are thankful to the editors of this Special Issue for the encouragement and their advice. We would also like to thank the four anonymous reviewers for their help in refining the arguments presented.

References

Alvesson, M. (1993) 'Organizations as Rhetoric: Knowledge-Intensive Firms and the Struggle with Ambiguity', *Journal of Management Studies* 30: 997–1015.

Alvesson, M. (2001) 'Knowledge Work: Ambiguity, Image and Identity', *Human Relations* 54: 863–86.

Alvesson, M. (2004) *Knowledge Work and Knowledge-Intensive Firms*. Oxford: Oxford University Press.

Alvesson, M. and Kärreman, D. (2001) 'Odd Couple: Making Sense of the Curious Concept of Knowledge Management', *Journal of Management Studies* 38: 995–1018.

Ambrosini, V. and Bowman, C. (2001) 'Tacit Knowledge: Some Suggestions for Operationalization', *Journal of Management Studies* 38: 811–29.

Argote, L. (1999) *Organizational Learning: Creating, Retaining and Transferring Knowledge*. Boston, MA: Kluwer Publications.

Barley, S. R. and Kunda, G. (2001) 'Bringing Work Back In', *Organization Science* 12: 76–95.

Barney, J. B. (1991) 'Firm Resources and Sustained Competitive Advantage', *Journal of Management* 17: 99–120.

Bell, D. (1973) *The Coming of Post-Industrial Society*. New York, NY: Basic Books.

Berger, P. L. and Luckmann, T. (1967) *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. New York, NY: Doubleday Anchor.

Bergmann, G. (1958) *Philosophy of Science*. Madison, WI: University of Wisconsin Press.

Blackler, F. (1995) 'Knowledge, Knowledge Work and Organizations: An Overview and Interpretation', *Organization Studies* 16: 1021–46.

Boisot, M. (1998) *Knowledge Assets: Securing Competitive Advantage in the Information Economy*. Oxford: Oxford University Press.

Brown, J. S. and Duguid, P. (2000) 'Balancing Act: How to Capture Knowledge without Killing It', *Harvard Business Review* 78(3): 73–80.

Collins, H. M. (1993) 'The Structure of Knowledge', *Social Research* 60: 95–120.

Cook, S. N. and Brown, J. S. (1999) 'Bridging Epistemologies: The Generative Dance between Organizational Knowledge and Organizational Knowing', *Organization Science* 10: 382–400.

Crozier, M. and Friedberg, E. (1981) *Actors and Systems: The Politics of Collective Action*. Chigaco, IL: The University of Chicago Press.

David, P. A. and Foray, D. (2002) 'An Introduction to the Economy of the Knowledge Society', *International Social Science Journal* 54(171): 9–23.

Davenport, T. H. and Prusak L. (1998) *Working Knowledge: How Organizations Manage What They Know*. Cambridge, MA: Harvard Business School Press.

Dutton, J. E. and Duncan, R. B. (1987) 'The Creation of Momentum for Change Through the Process of Strategic Issue Diagnosis', *Strategic Management Journal* 8: 279–95.
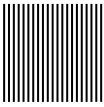
Gadamer, H. G. (1976) *Philosophical Hermeneutics*. Berkeley, CA: University of California Press.

Gherardi, S. (2001) 'From Organizational Learning to Practice-Based Knowing', *Human Relations* 54(1): 131–39.

Gherardi, S. (2006) *Organizational Knowledge. The Texture of Workplace Learning*. Oxford: Blackwell Publishers.

Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P. and Trow, M. (1994) *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*. London: Sage.

Gourlay, S. (2003) 'Knowing as Semiosis: Steps Towards a Reconceptualization of Tacit Knowledge', in H. Tsoukas and N. Mylonopoulos (eds) *Organizations as Knowledge Systems: Knowledge, Learning and Dynamic Capabilities*, pp. 57–78. London: Palgrave Macmillan.

Grandori, A. and Kogut, B. (2002) 'Dialogue on Organization and Knowledge' *Organization Science* 13: 224–31.

Grant, R. M. (1996) 'Toward a Knowledge-Based Theory of the Firm', *Strategic Management Journal* 17 (winter): 109–22.

Habermas, J. (1984) *The Theory of Communicative Action, Vol. 1 Reason and the Rationalization of Society*. Boston MA: Beacon Press.

Habermas, J. (1986) *Knowledge and Human Interest*. London: Polity Press.

Habermas, J. (1995a) *Vorstudien und Ergänzungen zur Theorie des kommunikativen Handelns*. Frankfurt aM: Suhrkamp.

Habermas, J. (1995b) 'Wahrheitstheorien', in J. Habermas (ed.) *Vorstudien und Ergänzungen zur Theorie des kommunikativen Handelns*, pp. 127–83. Frankfurt aM: Suhrkamp.

Habermas, J. (2003) *Truth and Justification*. London: Polity Press.

Husserl, E. (1948) *Erfahrung und Urteil*. Hamburg: Claaseen & Goverts.

Janich, P. (1996) *Was ist Wahrheit? Eine philosophische Einführung*. München: Beck.

Jordan, B. and Putz, P. (2003) 'Thinking Assessment', *Practicing Anthropology* 25(4): 37–41.

Kamlah, W. and Lorenzen, P. (1984) *Logical Propaedeutic: Pre-School of Reasonable Discourse*. Lanham, MD: University Press of America.

Knorr-Cetina, K. D. (2001) 'Objectual Practice', in T. R. Schatzki, K. D. Knorr-Cetina and E. Von Savigny (eds) *The Practice Turn in Contemporary Theory*, pp. 175–88. London: Routledge.

Krogh, G. v. and Roos, J. (1996) *Organizational Epistemology*. Basingstoke: Macmillan.

Leonard-Barton, D. (1992) 'Core Capabilities and Core Rigidity: A Paradox in Managing New Product Development', *Strategic Management Journal* 13: 111–26.

Lowendahl, B. (1997) *Strategic Management of Professional Service Firms*. Copenhagen: Handelshojskolens Forlag.

Luhmann, N. (1984) *The Differentiation of Society*. New York, NY: Columbia University Press.

Luhmann, N. (1998) *Die Wissenschaft der Gesellschaft*. Frankfurt aM: Suhrkamp.

Maasen, S. and Weingart, P. (2001) *Metaphors and the Dynamics of Knowledge*. London: Routledge.

Maturana, H. R. and Varela, F. J. (1998) *The Tree of Knowledge: The Biological Roots of Human Understanding*. Boston, MA: Shambhala Publications.

Mittelstrass, J. (2001) *Wissen und Grenzen. Philosophische Studien*. Frankfurt aM: Suhrkamp.

Nelson, R. R. and Winter, S. G. (1982) *An Evolutionary Theory of Economic Change*. Cambridge: Belknap Press.

Neuweg, H. G. (1999) *Könnerschaft und implizites Wissen. Zur lehr-lerntheoretischen Bedeutung der Erkenntnis- und Wissenstheorie Michael Polanyis*. Münster: Waxmann.

Newell, S., Robertson, M., Scarbrough, H. and Swan, J. (2002) *Managing Knowledge Work*. New York, NY: Palgrave Macmillan.

Nicolini, D., Gherardi, S. and Yanow, D., eds (2003) *Knowing in Organizations: A Practice-Based Approach*. Armonk, NY: Sharpe.

Nonaka, I. (1994) 'A Dynamic Theory of Organizational Knowledge Creation', *Organization Science* 5: 14–37.

Nonaka, I. and Takeuchi, H. (1995) *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation*. New York, NY: Oxford University Press.

Orlikowski, W. J. (2002) 'Knowing in Practice: Enacting a Collective Capability in Distributed Organizing', *Organization Science* 13: 249–73.

Orr, J. E. (1990) 'Sharing Knowledge, Celebrating Identity: Community Memory in a Service Culture', in D. Middleton and D. Edwards (eds) *Collective Remembering*, pp. 169–89. London: Sage.

Polanyi, M. (1958) *Personal Knowledge. Towards a Post-Critical Philosophy*. Chicago, IL: University of Chicago Press.

Polanyi, M. (1966) *The Tacit Dimension*. London: Routledge.

Prahalad, C. K. and Hamel, G. (1990) 'The Core Competence of the Corporation', *Harvard Business Review* 68(3): 79–91.

Rifkin, J. (2000) *The Age of Access*. London: Putnam.

Robertson, M., Scarbrough, H. and Swan, J. (2003) 'Knowledge Creation in Professional Service Firms: Institutional Effects', *Organization Studies* 24: 831–57.

Ryle, G. (1949) *The Concept of Mind*. Oxford: Blackwell Publishers.

Scherer, A. G. (1998) 'Pluralism and Incommensurability in Strategic Management and Organization Theory: A Problem in Search of a Solution', *Organization* 5: 147–68.

Scherer, A. G. and Steinmann, H. (1999) 'Some Remarks on the Problem of Incommensurability in Organization Studies', *Organization Studies* 20: 519–44.

Schön, D. A. (1983) *The Reflective Practitioner*. New York, NY: Basic Books.

Schreyögg, G. and Geiger, D. (2005) 'Developing Organizational Narratives: A New Dimension in Knowledge Management', in B. Renzl, K. Matzler and H. Hinterhuber (eds) *The Future of Knowledge Management*, pp. 82–98. London: Palgrav Macmillan.

Schütz, A. and Luckmann, T. (1989) *The Structures of the Life-World*. Minnesota, MN: Northwestern University Press.

Spender, J. C. (1996a) 'Competitive Advantage from Tacit Knowledge? Unpacking the Concept and its Strategic Implications', in B. Miongeon and A. Edmondson (eds) *Organizational Learning and Competitive Advantage*, pp. 56–73. Thousand Oaks, CA: Sage.

Spender, J. C. (1996b) 'Making Knowledge the Basis of a Dynamic Theory of the Firm', *Strategic Management Journal* 17: 45–62.

Spinner, H. F. (1994) *Die Wissensordnung*. Opladen: Leske + Budrich.
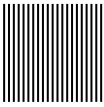
Starbuck, W. (1992) 'Learning by Knowledge-Intensive Firms', *Journal of Management Studies* 29: 713–40.

Stehr, N. (1994) *Knowledge Societies.* London: Sage.

Subramaniam, M. and Venkatram, N. (2001) 'Determinants of Transnational New Product Capability: Testing the Influence of Transferring and Deploying Tacit Overseas Knowledge', *Strategic Management Journal* 22: 359–78.

Tarski, A. (1946) *Introduction to Logic and to the Methodology of Deductive Sciences.* Oxford: Oxford University Press.

Teece, D. J., Pisano, G. and Shuen, A. (1997) 'Dynamic Capabilities and Strategic Management', *Strategic Management Journal* 18: 509–33.

Tell, F. (2004) 'What Do Organizations Know? Dynamics of Justification Contexts in R&D activities', *Organization* 11: 443–71.

Toulmin, S. (1958) *The Uses of Argument.* Cambridge: Cambridge University Press.

Toulmin, S., Rieke, R. and Janik, A. (1979) *An Introduction to Reasoning.* New York, NY: Macmillan.

Tsai, W. and Ghoshal, S. (1998) 'Social Capital and Value Creation: The Role of Intrafirm Networks', *Academy of Management Journal* 41: 464–76.

Tsoukas, H. (2003) 'Do we Really Understand Tacit Knowledge?' in M. Easterby-Smith and M. A. Lyles (eds) *The Blackwell Handbook of Organizational Learning and Knowledge*, pp. 410–27. London: Blackwell.

Tsoukas, H. and Mylonopoulos, N., eds (2003) *Organizations as Knowledge Systems. Knowledge, Learning and Dynamic Capabilities.* London: Palgrave Macmillan.

Tsoukas, H. and Vladimirou, E. (2001) 'What is Organizational Knowledge?' *Journal of Management Studies* 38: 973–93.

Turner, J. H. (1988) *A Theory of Social Interaction.* Chicester: John Wiley and Sons.

von Foerster, H. (1982) *Observing Systems.* Seaside, CA.: Intersystems Publication.

Weingart, P. (1997) 'From "Finalization" to "Mode 2": Old Wine in New Bottles?', *Social Science Information* 36: 591–613.

Weingart, P. (2002) 'The Moment of Truth for Science', *EMBO Reports* 3(8): 703–6.

Wenger, E. C. (2000) 'Communities of Practice and Social Learning Systems', *Organization* 7: 225–47.

Wittgenstein, L. (1922) *Tractatus Logico-Philosophicus.* London: Routledge and Kegan Paul.

Yanow, D. (2000) 'Seeing Organizational Learning: A Cultural View', *Organization* 7: 247–68.

Georg Schreyögg holds the Chair of Organization and Leadership at the Free University of Berlin. His main research interests are in Organizational Change, Corporate Culture and Path Dependency. He is International Fellow of AIM (Advanced Institute of Management Research, UK) and Elected Fellow at DFG (Deutsche Forschungsgemeinschaft). He is currently President of the German Association of University Teachers for Business Administration (VHB). He has been a member of the editorial board of several international journals and is co-editor of *Managementforschung.* He has published seven books, eight edited volumes and over 150 contributions, which have appeared in *Academy of Management*

Review, *Scandinavian Journal of Management Studies, Journal of Business Ethics, International Journal of Management Concepts and Philosophy*, *Organization Studies* and in numerous volumes and other journals. **Address:** Institute of Management, FU Berlin, Garystr. 21, D-14195 Berlin, Germany.
[email: schrey@wiwiss.fu-berlin.de, www.fu-schreyoegg.de]

Daniel Geiger is Research Fellow of the Advanced Institute of Management Research (AIM) and member of GNOSIS at the University of Liverpool Management School (UK). He received his PhD from the Free University of Berlin, Institute of Management, where he also worked as Lecturer. In his PhD thesis he focused on the Epistemological Foundations of Knowledge Management suggesting a new knowledge framework for Knowledge Management. His further research interests include Organizational Narratives and their use in Knowledge Management, Practice Research and Organizational Competences. **Address:** Management School, University of Liverpool, Chatham Building, L69 7ZH, Liverpool, UK.
[email: daniel.geiger@liverpool.ac.uk]