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J.-C. Spender and Andreas Georg Scherer  
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# The Philosophical Foundations of Knowledge Management: Editors' Introduction

J.-C. Spender

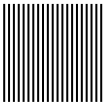
Leeds University, UK and Cranfield University, UK

Andreas Georg Scherer

IOU, University of Zurich, Switzerland

**Abstract.** *Our work on this Special Issue began with a showcase symposium on the philosophical foundations of knowledge management (KM) at the AoM 2004 Meeting and was continued through KM tracks at the EURAM 2005 and EGOS 2005 Conferences. Our hope was to corral the variety of approaches in the KM literature and expose solid underpinnings against which the field's development might be gauged. We were unclear whether these would be axiomatic principles that defined the field or a set of professionally accepted KM practices. The call for papers went out in Fall 2004 and was published in the November 2004 issue of Organization. In our call we asked for advances to the discussion rather than mere reiteration of the already appreciated. Our authors and reviewers made great efforts and we learned much from their submissions, both those included and those turned away, and from the many reviews. However, we found deep disagreements, both among our reviewers about the submissions—and among everyone about the topic area generally. Clearly KM frustrates readers, authors, and reviewers alike; hence the temptation to dismiss it as yet another management fad, as many do. But there is an undeniable enthusiasm for KM among managers and academics, so our first thought was 'To what problem is KM the answer?'. Framing the question well often takes one towards the answer—so if we puzzle out KM's problematics we may find ourselves moving towards the underpinnings we are looking for.*

**Key words.** *knowledge management; multiple epistemologies; practice*



## Into the Knowledge Age: What's Special about KM?

Some think the 'knowledge turn' a matter of macro socio-historical change; citing Drucker, Bell, Arrow, Reich or Winter, they assert we have moved into an Information Age wherein knowledge has become the organization's principal asset. The implication is that KM has taken over from strategy or capitalization or whatever other aspect of management was previously thought most important. There is a shift, we hear, from capital intensity to knowledge intensity. Not much evidence is offered, nor could there be absent a knowledge-based theory of the firm. Nor are the differences between managing money and managing knowledge immediately obvious. But it is odd to think that knowledge has not previously been important. The history seems plain enough to the KM practitioners. Perhaps Prusak tells it best, arguing KM is the inevitable result of rapid progress in information technology (IT), globalization and rising awareness of the commercial value of organizational knowledge (Prusak, 2001). The majority of KM consultants and business people see IT as KM's principal armamentarium—it is all about collecting, manipulating, and delivering the increasing amounts of information IT's falling costs have made available. Globalization's widening geography and 24/7 nature means vast amounts of information must be collected and passed around organizations, for no single mind can grasp the manifold complexities of the modern firm. Likewise, while at RAND, Arrow's interest in 'knowledge' was piqued by the learning-curves observed in airplane construction. While nothing new to engineers, these led him to entertain an economics of learning (Arrow, 1962). So perhaps knowledge-intensive firms (KIFs) are those characterized by significant learning curves (Starbuck, 1992). But is organizational learning so new? Any history of, say, the textile industry or of railway technology suggests the contrary.

Even more popular is the assertion that today's firms are characterized by intellectual rather than physical labour, performed by highly qualified professionalized workers rather than by craftsmen and semi-skilled labourers (Alvesson and Kärreman, 2001; Reich, 1992). Is KM simply an aspect of today's evolving socio-technical systems? This seems OK as far as it goes, especially given the rise of professionalism, the decline of the labour unions and the populations they represented and the expansion of higher education in the developed nations. But even smokestack firms had line managers and staff aides doing mental work. So perhaps KM is no more than a response to the increasing proportion of thinkers versus doers? But doing surely requires thinking. Alternatively, we might look to collaboration as KM's driver, the proposition that modern work requires social inter-action and complex networking between individuals previously labouring in isolation. But workers were always administered and accountable. Other writers tell us firms cannot 'do it alone' anymore and need networks of lead customers and alliances. Pre-WWII the Ford Motor Company was vertically integrated with its own mines and rubber plantations, so is 'networking' just about changes in ownership and control (Fligstein, 2001)? Again a dip



into history suggests no great historical schism in these respects, though there are issues of scale and scope.

Whatever doubts we academics harbour about the much-trumpeted paradigm shift into the Information Age, practitioners generally see KM as driven by competitive pressures and the need to manage the organization's intangible assets more efficiently. Many economists and accountants, drawing on Tobin for instance, note the widening gap between book and market valuations, so pointing to the rising commercial significance of intangibles. This positions KM as the management of these intangible assets, to be contrasted with a supposed 'old management' focus on the tangibles listed on the balance sheet. Again this is unconvincing given tacit understandings were obviously more prevalent before the huge advances in metrication and operational analyses that followed WWII. Recall Veblen's theory of the business enterprise, first published in 1904, which spins around the inability of the firm's owners and customers to understand the intangibles its managers apply and manipulate in their pursuit of rents (Veblen, 1965). Maybe today's rising market valuations reflect no more than the decay of secrecy and the old-style monopoly strategies it supported, along with increased transparency, customer power, and understanding of the true value of the firm. The valuation discrepancy may be more to do with the failure of accounting techniques than with a fundamental shift in the nature of the firm.

Maybe one can probe KM's philosophical underpinnings without bothering to explain its popularity? Glancing at the contributions to this special issue, McKinley takes KM's subject-matter for granted and focuses on methodology and metrication while Foss remarks the popularity of the 'knowledge movement' but is uncritical of the supporting assertions. Tywoniak offers the usual boosting citations and concentrates on how to theorize the knowledge-intensive firm. Gueldenberg and Helting focus on critiquing the underpinnings to Nonaka and Takeuchi's book, surely KM's most influential work (Nonaka and Takeuchi, 1995). Indeed, among our authors only Schreyögg and Geiger's seem to probe reasons for the growth of KM. There is a new requirement, they say, for reflexivity and conscious management of the organization's knowledge, a conclusion that follows directly from their definition of organizational knowledge. Instead of seeing the organization as a body of shared knowledge, albeit intangible, they see a rising heterogeneity and functional differentiation that must be contained through managed discourse. Old style firms, they suggest, were marked by the one-way flow of instruction rather than a two-way discourse between those of divergent views. Historically correct or not, this different notion of the firm implies a way of framing the variety within the KM literature. Put simply, different KM writers have significantly different agendas and these are generally lodged within different notions of the firm, more often implicitly than explicitly. Given the ubiquity of 'knowledge' and the difficulty of defining it, KM has inadvertently created a conceptual space into which many different anxieties are now being projected.



## KM's Anxieties

What concerns and anxieties appear in the KM literature? For most the IT issues dominate, the information needed is not sufficiently available to support the firm's decision-making. Amazing developments have completely changed the possible here. Retail firms automate their restocking process by gathering point-of-sale data while reflecting the subtle ebb and flow of local markets. Airlines or publishers off-load the ordering process onto their consumers, inadvertently wiping out travel agents and local book stores. Financial institutions earn excellent returns from customer relationship management systems whose expert system algorithms analyse their clients' financial behaviour. In both private and public sectors all are now integrated into the IT-backed data repository, supply chain and production systems which have become huge producers and consumers of digital information. In such respects the world has clearly changed—but in terms of economically efficient implementation only, or in a more theoretically significant way? However, for most IT writers the implicit organizational model remains mechanical, impersonal, and data-driven, presuming a coherent and logical goal-oriented view from all those involved. Thus IT focuses on data rather than on its meaning or practical implications, in marked contrast to the Schreyögg and Geiger notion of the firm as an ongoing discourse resolving conflicts of meaning and viewpoint.

Rather than work through the many views of organization to be found in the KM literature we can focus on the anxieties discussed. The IT take is the data have not been adequately collected, mined or applied to the organization's resource-allocation and action-planning processes. No doubt this is the principal concern behind most organizations' KM projects and explains the KM industry's explosive growth. But it is also the least demanding, philosophically, and we have no great need to plumb its underpinnings. Schreyögg and Geiger's concern is different and more philosophically demanding. This is the point. We need to review the various KM anxieties and see which need philosophical underpinning and which do not. Gueldenberg and Helting reveal Nonaka and Takeuchi's philosophical underpinnings as highly problematic. They focus on the processes by which individual creative practice shapes the firm, so linking micro and macro as Foss might wish, though without the precision of economic concepts. But this is philosophically complex. Is anything left standing if Nonaka and Takeuchi's East–West contrast collapses? Certainly this first anxiety about connecting individual inventiveness to the firm's strategic dynamic remains, and this requires a more secure philosophical grounding than organization theory ordinarily provides.

A second principal anxiety behind KM revolves around the ownership of the means of production. As the balance of tangibles and intangibles shifts, so defining the Knowledge Age, KM writers remind us that a KIF's assets 'go home in the evening'. Thus writers like Teece focus on how to take ownership of and extract value from mobile intangible assets (Teece, 2000). On the other hand, many managers speak of the challenge



to 'retain' the knowledge and skills of those retiring or otherwise leaving the firm. Capturing the results is far from easy, so R & D workers are often required to sign away all title to the work they do, whether in the firm's labs or ruminating while mountain-biking. But capturing the knowledge resources is more demanding, indeed what can be captured in the knowledge engineering process and then owned? Some KM writers argue the employees' knowledge is less an extractable asset than an embedded 'knowing' demonstrated as competent performance in the organizational context, an epistemological point that throws the whole expert systems (ES) agenda into question. The critique sharpens if the organization's knowledge is defined as shared, collective, or the attribute of a community of practice.

A third anxiety, and that looming largest in our papers, revolves around the organization as a dynamic socio-economic entity with a developing or evolving corpus of knowledge. The emphasis here is on knowledge-creation rather than on deploying, protecting, or extracting value from the knowledge created. This is Nonaka and Takeuchi's agenda and leads directly to the conceptual apparatus used by those searching for a new knowledge-based theory of the firm. Foss's article re-presents 'methodological individualism', Hayek's plea to ground socio-economic analysis on the observable behaviour of individuals. Foss insists notions like absorptive capacity, dynamic capabilities and organizational routines are attributes of organizations and cannot be readily associated with what we know about individuals as economic actors. Indeed, when used as explanatory devices, the theorizing becomes hopelessly tautological, presuming the prior existence of the organization the theory is trying to explain. If carried through, Foss's critique nullifies much of the new theory of the firm, especially the work of Nelson and Winter (1982) and Kogut and Zander (1996) for that these authors treat firms as socio-economic entities with their own inherent law-like properties. For Foss, the focus should move towards individual behaviours. His knowledge governance approach (KGA) brings individuals into the ongoing pattern of collective activity we call the firm. But what is an individual? Indeed, we can see that like most KM theorists, our authors show little concern over the individual's nature or with the anxieties typical of developmental psychologists and educational theorists. Like Nonaka and Takeuchi, both Foss and Tywoniak theorize the interaction of individual and organization, taking both for granted.

### Generating and Sharing Knowledge

Alchian and Demsetz suggest a simple knowledge-based theory of the firm with their idea of a legal entity that holds the undistributed residuals and teamwork outputs (Alchian and Demsetz, 1972). Thus individuals might learn and share the results with others across the firm, with the firm becoming manifest as the body of knowledge shared and retained. There



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are epistemological challenges here given knowledge is the archetypal non-rivalrous good, extensible and shareable with others without loss to oneself. Nonetheless many writers see knowledge sharing as the KM problem to be addressed, and at first sight this is no more than the non-technology-intensive version of the IT problem. Data are moved around by human communication rather than electronically. But is this really what human communication is about?

It is precisely at this point that KM begins to gain conceptual traction and distinguish itself from computing, organization development, expert systems, communication theory and so forth. The break, of course, is tied up with the term 'tacit' and the complexities it introduces into the analysis of human communication. If tacit knowledge is important, how can it be moved or managed? Tywoniak puts more weight on the tacit-explicit distinction than our other authors. But Foss also uses it as he directs his analysis towards the costs of managing individuals' knowledge processes. His interpretation is borrowed from Winter's analysis of knowledge's 'dimensions' (Winter, 1987). Noting also Osterloh and Frey's comments about the difficulty of contracting for the employee's tacit knowledge, Foss uses tacitness as a determinant of cost—the more tacit the knowledge the more costly its administration (Osterloh and Frey, 2000). Tacitness is put on a scale of more or less, a position that aligns him with Boisot (1995) and, to some extent, with Nonaka and Takeuchi and each of Winter's dimensions, especially decomposability, leads to cost. Tywoniak, on the other hand, sees tacitness differently, as one of four 'deformation dimensions' where it refers to the dynamic nature of our knowledge. He contrasts it against 'personal' embodied knowledge, socially embedded 'common' knowledge, and the 'explicit' knowledge that follows reflection and theorizing; a typology that owes something to Blackler (1995) and Engeström (2000). His dimensions are set up to theorize the interaction between them along the lines of Nonaka and Takeuchi's SECI model. While Foss shies away from explaining how the knowledge to be communicated is generated, Tywoniak sees its creation as arising within this dynamic interaction. But he does not lay out any philosophical support for this. Foss's approach, in contrast, is philosophically consistent with mainstream microeconomics.

Having introduced the notion of discourse and knowledge as contained in language, Schreyögg and Geiger move from the communication processes to the knowledge differentiation processes. Their anxiety is profoundly epistemological and grows out of a critique of the phenomenological or interpretive approach as overly sociological and collective, and so unable to address the uniqueness or particular qualities of each organization's body of knowledge. Schreyögg and Geiger appeal to the warrants or justifications for the validity claims implied by knowledge as an inter-subjective linguistic act. They turn to Toulmin's analysis of argumentation and suggest validity appeals hinge on the language's engagement with the actors' life-world, the way conversing actors are embedded in a common system of social practice. The result, explicit in Habermas's work, is often dubbed a 'consensus theory



of truth' and can be associated with the actors' grasp of the tacitness of their social life-world. McKinley, quoting McKelvey and others, takes a critical realist view more concerned with objective physical reality than with discourse. His philosophical anxieties are more general than specific to KM—construct de-objectification and knowledge accumulation. Theoretical progress is impossible, he argues, when our constructs are so varied and unstable that researchers must always build from the ground up.

### And so to the Editors

Given the spread of philosophical positions among even so few papers, what can we Editors say about the foundations of KM? Can such foundations even exist, given the shifting alignments between the writer's focal anxiety and their implicit theory of organization, and the way of proceeding from the anxiety to framing it within a view of the organization? Foss takes aim at those who use knowledge-concepts to describe firms with collective notions that lead to useless tautologies. Schreyögg and Geiger take their anxiety from those who, while using knowledge-concepts that are dynamic, fail to explain how firm idiosyncrasy and differentiation can arise. Gueldenberg and Helting show that if Nonaka and Takeuchi's theory is to survive philosophical criticism we must see their contrast of Eastern and Western philosophies—and their distinction between tacit and explicit—as peripheral. More important is their notion of the firm as an interactive epistemological process taking place within a specific life-world, a concept that Nishida and Heidegger share. Tywoniak is also critiquing Nonaka and Takeuchi, working their individual-organization and tacit-explicit interactions in a different way. McKinley sits farther back, anxious for KM to emulate the progress of the natural sciences, proposing a universal organization science methodology rather than a specific knowledge-based theory of the firm. Do these papers even bear on a common topic?

We must step back and puzzle out the essential character of the KM discourse. One of its paradoxes is that KM is only separable from existing disciplines such as microeconomics and organization theory when it treats knowledge itself as problematic. It gets its traction from admitting we do not know what knowledge is, so demanding we think about the ways managers and organizations respond to these doubts. Our normal theorizing, especially in the positivistic tradition, regards knowledge as problematic only in its absence. The perplexing magic of KM is that it allows us to throw in other problematics. We can argue Nonaka and Takeuchi effectively founded the field as a theory of the firm by drawing on Polanyi's notion of skills as a valuable but non-explicable component of modern organizations, thereby pushing our theorizing beyond the limits of rational bureaucracy. It is easy to forget that Nelson and Winter used the same lever in 1982 just as Simon drew on bounded rationality to engage heuristics which grew up into organizational routines. Schreyögg and Geiger draw on hermeneutics and problems of meaning to drive us towards communicative practice.



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Tywoniak draws on the different dimensions to create the possibility of the firm as a practice. Can we generalize these moves?

Clearly they are epistemological and throw our knowledge assumptions and the consequences thereof into sharp focus, as McKinley reminds us. Within the KM discourse such direct epistemologizing is probably best illustrated in the work of Tsoukas and his colleagues (Tsoukas, 2005; Tsoukas and Mylonopoulos, 2004). But there is a risk of implying the philosophical foundations of KM are no less than the entire body of philosophical thought. How can we narrow down and characterize the different ways in which individual and organizational knowledge seems problematic to managers and organizational participants and so avoid engaging philosophy in its entirety? This issue strikes the Editors as the most tricky and yet important one about KM and its philosophical foundations. It generated most of the debate between us. We argue organizational life is part of social life, but is not the same. The question is 'Should KM reach beyond organizations and their management and apply to life generally?'. We argue not, but the notion that KM applies only to organizations demands we get honest about how we think organizations can be distinguished from social life. As Foss reminds us, there is a danger of vicious tautology here for, as we propose the organization's distinctive character, we might inadvertently assume the very philosophical foundations into which we are enquiring. The technical problem is to introduce the concept of the organization (or firm) into our discussion and thereby isolate KM from philosophy as a whole. Our proposal is: (a) that organizations are purposive, in Toennies's sense of *Gesellschaftlich*, while social life is not and (b) the individuals who engage in the organization subordinate their own personal purposes and socially defined and sustained rights to those of the organization, i.e. the owners'. In this sense the body of knowledge to be managed in the KM process stands apart from these individuals and their social relations. This separation does not mean we regard the owners' legal and institutionalized rights to set the organization's goals as beyond debate, in fact the very opposite. Nor do we imply the organizational goals can ever be coherent enough to seal off the organization's thought and practice from this external debate in the manner implied by Thompson's 'boundary spanning'. Rather we argue the debate stands outside KM itself. It does, of course, stand within the discussion of the use (and management) of knowledge within society, as Hayek, Coase, Habermas or Heidegger, would see it. As the theory we suggest is applied to real organizations, either by analysts or managers, its effectiveness may be mediated by the way that organization separates itself from its macro-social context. Thus a university, with exceedingly complex and multidimensional goals, presents us with a major challenge while a disciplined profit-seeking enterprise is more likely to be more explainable and manageable; our theory implies an organizational typology based on the degree which actors 'decide to participate'.

With this notion of the organization standing apart in mind, there are dozens of routes into the discussion of its characterizing knowledge. A



handy one is to note that those in the MIS field sometimes look at those working in IT and point to the easily forgotten difference between collecting, manipulating and sharing data and making IT systems a source of shareholder value. Technological advances may not translate into better organizational outcomes and the puzzle is 'Why not?'. This drives a wedge between data and meaning and is many writers' first step towards defining the organization's knowledge. But given the failure of full-time professional philosophers to agree on a definition of knowledge, many readers find these definitions obscuring and boring, especially when nothing managerial seems to turn on them.

Our authors get us closer by going back to Descartes and the doubt that makes the meaning of sense-data problematic. We cannot speak of data without implying a framework of meaning within which the data are collected and displayed. So we can treat data and meaning as co-dependent aspects of a form of knowledge we might call information rather than as alternative, substitutable or mutually exclusive forms of knowledge. The distinction between them arises when sense-data and thought are located in the different epistemological domains suggested by the Mind/Body distinction, or perhaps, in different locations in the brain. So long as we sustain this distinction, though many deny it, what we mean really by data is information whose meaning is assumed unproblematic. Information must be addressed in a quite different way when managers regard meaning as problematic, a situation now dubbed 'having to connect the dots'. Thus McKinley takes data's information content to be unproblematic while Schreyögg and Geiger focus us on the discursive practices in the social world which shape its meaning. Suppressed here is the discussion of power, such as the owners', of who actually determines the meanings that emerge from such discourse given that neither rationality nor reality can provide the ultimate warrant (Foucault, 1980). Once the epistemological umbilical cord connecting our thinking to reality is severed validity claims can only be grounded in the organization's processes (Gergen, 1994; Habermas, 2003).

The proposal that data and meaning are co-dependent rather than opposed notions of information's validity is more epistemologically aggressive than it seems at first sight—though it seems fairly commonsense. But, as the interplay between our authors' papers reveals, there is a radical difference between applying epistemologies that claim to offer 'one true foundation' to KM versus suggesting that an interaction between alternative epistemologies can provide something useful for both managers and those theorizing the firm. This last can provide a way forward, suggesting, as does Tywoniak, that the way to deal with the evident diversity of the KM literature is to embrace it as the basis of a generative interaction or discourse between a plurality of heterogeneous elements rather than evidence of disabling fragmentation, in fact such discourse is possible even among incommensurable positions (Scherer and Steinmann, 1999).

What can we draw out of the interaction of data and meaning? We do not have to bother with any epistemological niceties to appreciate the



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managerial implications are already so familiar they are scarcely worth mentioning. We know about administrative systems' dependency on data; it is a fundamental plank for bureaucratic and decision-making theory. Economists argue for markets precisely because they are such efficient methods of acquiring and deploying data (Hayek, 1948). Managers also know meaning is often problematic, which is why a firm's mission needs to be determined and communicated and corporate cultures are important. Neo-classical economists avoid talking about meaning, assuming self-interests converge on profit. Their critics argue the simplification emasculates the discipline, transforming it from useful political-economic discourse into a mathematical pastime (Shackle, 1972). Whatever our views, given the managerial implications of the difference between data and meaning are so widely known, KM cannot expect to find its epistemological foundations in their interplay. But this does help us see why Polanyi's influence has been so crucial to KM's emergence. The notion of tacit knowledge takes us beyond information and into a domain of practice, so setting up the possibility of a more complex three-way interaction between data, meaning and practice (Spender, 2006). Our authors show philosophical support for this move can be found in the writings of Wittgenstein, Heidegger, Nishida and others. It helps us see how an epistemology of KM spins out of the organization's characterizing practices.

Focusing on practice lets us see the interplay of anxieties and ideas about the firm rather differently. The IT discourse within KM is epistemologically undemanding and of little added value so long as it remains focused on data and its movement, skipping over its impact on organizational practice. To this point we have not mentioned the human resource management (HRM) aspects of KM and the widespread interest in human capital or in the economics of training. But it draws our attention to the trained or skilled person's ability to engage in practices which cannot be fully programmed, reducing the person to the de-skilled mechanical cipher that is the antithesis of the knowledge-worker. Broadly we argue that if our idea of practice is no more than the implementation or execution of a rational decision, we cannot find epistemological space for KM's tent, and we cannot capture the essence of knowledge work. As Schreyögg and Geiger show, appeals to knowledge as knowing, as proficient practice, actually spring from our anxiety about the limits to human rationality (Cook and Brown, 1999; Weick and Roberts, 1993).

Observing KM's deep engagement with the non-mechanical aspects of organizational practice helps its real agenda emerge from the babble. It is indeed Simon's agenda, about dealing with bounded rationality; or Polanyi's agenda, recognizing how rationality grows from tacit pre-theoretical practice; or Heidegger's agenda, of grounding validity claims in the life-world of social practice and Habermas also suggests that knowledge is neither the representation of reality nor the result of an application of ultimate rational criteria, but instead a competence to engage successfully in practice (Habermas, 2003). In short, KM's real agenda spins around problematizing



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the most commonly assumed aspect of our concept of knowledge, that of rationality itself. Whereas Descartes employs reason to attack sense-data with his doubting, so Husserl and Habermas deploy reason to attack human rationality itself. As it takes note of their philosophizing KM opens up a new critique of our discipline's blind attachment to rationality as the basis for theorizing organizations and their management. Yet commonsense observation and empirical evidence of uncertainty and the failure of reason as the sole underpinning of managerial practice seem overwhelming. While rationality is obviously incredibly important to managers and theorists alike, it is simply incapable of grasping organizational practice adequately. Thus KM's foundational notion of an unreasoned but nonetheless proficient form of practice, such as 'flow' (Czikszentmihalyi, 1988), takes us beyond perfect rationality and brings it back from pure abstraction and into the real world. This, we surmise, is the gut-level source of its popularity among practitioners anxious about owning or wasting the consequences of coping with the non-rational aspects of their organization's practices. To theorists of the limits to rationality KM's critique suggests novel vantage points from which to consider other forms of organizational knowledge and the possibility of their interaction as instantiating the organization.

But if epistemological heterogeneity is nothing new, suggesting different types of knowledge might be made to interact presents us with formidable philosophical challenges that oblige us to reconsider what epistemologies actually do. When reading the work of those who wear their epistemologies on their sleeve there is often a zealotry, an emotional commitment beyond the discourse. Thus disputes between, say, positivists and phenomenologists or critical realists and social constructionists, are more often marked by intemperateness than by mutual knowledge seeking. Yet their positions are always inextricably interlinked and mutually constituting. For instance, it is quite one thing for Descartes to deny the possibility of certain knowledge of the world beyond Mind, quite another for us to deny reality itself—given such relativist thoughts must arise within a real and physically present brain. Thus the Editors, along with Tywoniak and Gueldenberg and Helting, appeal for a pluralistic conversation and tolerance rather than epistemological purity (Scherer, 2003; Spender, 1998).

Actually, we have no alternative. It is easy to forget what epistemologies do, and that they are always about the same things: consciousness, the nature of experience, the reality beyond the mind, the nature of sense-data, time and space, what it means to exist and so forth. Epistemologies differ only in how they prioritize these components, which they must because there are no epistemologically neutral positions (Scherer and Steinmann, 1999). Thought begins with such choices. Realists prioritize what lies beyond Mind, phenomenologists prioritize what lies within and so forth, but every workable epistemology gathers up more or less the same components and, because of that, different epistemologies can be present within the same discourse. So epistemologies are not incommensurable and unable to enter a discourse but may be incommensurate in the various



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notions of knowledge each allows (Scherer and Dowling, 1995). For realists, knowledge is only about the nature of the world beyond the mind, while phenomenologists see knowledge as the outcome of the Mind's work of meaning creation and, perhaps, the interpreting of sense-data. For Habermas, knowledge is intersubjective, in language, the truth of the 'ideal speech situation'. A principal difference between these positions lies in their treatment of human imagination.

## Reason and Imagination

Epistemologies share notions of what characterizes Mind. Rationality is considered one of the universal and human-defining characteristics, the senses another. Their interaction gives us an idea of what it means to know, the logical reconstruction of our sense data perhaps. Thinking of the mind as a computer, the leading metaphor in our Information Age, helps us distinguish CPU-based reasoning from the senses' I/O inputs. Practice is evident in the world as the implementation of data-driven rational decision making, emails flying and printers whirring perhaps. But if we go back before Babbage and logic machines we find Enlightenment philosophers discussing a third characteristic of mind. Locke called this 'judgment' and described it as the ability to arrive at a conclusion when complete and certain knowledge was absent (Locke, 1928). We might also call coping with knowledge's absence an act of imagination that thereby complements reason. Computers cannot imagine, as the Heidegger scholar Dreyfus points out (Dreyfus, 1979). Economists call these conditions of Knightian uncertainty (Foss, 1996). Nelson and Winter comment, along with a stellar list of economists, on the 'inability of prevailing theory to come to grips with uncertainty, or bounded rationality' (Nelson and Winter, 1982: 5n).

The technical question is to theorize the act of imagination as dealing with knowledge absence. First, crucially, we need some 'knowing-space' and Schreyögg and Geiger show *ba* is a way of theorizing such a place or context. Boisot addresses this with his I-space (Boisot, 1995). We cannot recognize uncertainty as knowledge-absence remote from a context we know enough about to notice the absence, which is then an aspect of a situated experience of puzzling sense-data or unresolved questions. We cannot discover a knowledge absence in a knowledge vacuum. Thus Nonaka and Takeuchi's SECI model, Cook and Brown's 'generative dance' and Tywoniak's process of interaction, imply two steps and position the absence between alternative ways of knowing. They use epistemological distinctions between, say, explicit and tacit knowledge or between individual and organizational knowledge, to note a knowledge absence reasoning alone cannot resolve. Gueldenberg and Helting help us with the differences between not knowing, of nothingness, and uncertainty located in the known life-world. Those 'in-dwelling' here are able to bring their imagination to bear on filling in the knowledge absences revealed. In short, it becomes



clear that KM may be more about managing the organization's responses to knowledge-absences than about managing its knowledge assets.

The downside of bringing imagination into the analysis is it threatens to devastate it—it seems beyond control, and imagining whatever we like plunges us into subjectivism and anarchic relativism. How can we reason about acts of imagination? We might try to contain it by calling it creativity, a quality of mind like IQ, and look for its determinants (Sawyer et al., 2003). We might hypothesize this person's above average creativity is the result of particular experience, or of greater native ability or of past imaginings which 'prepared the mind' for its creative labours. Here we look for warrants just as Schreyögg and Geiger illustrate, though in this case focused on the individual's ability to deal with knowledge-absences rather on any social consensus to support truth-claims—but it amounts to much the same thing. Treating creativity as analogous to IQ or emotional intelligence turns it into a potentially measurable empirical characteristic like 100 metre dash time or shoe size. But this neither explains how it arises nor how it interacts with our reasoning, and we suffer the consequences of trying to de-contextualize it, to extract it from the context of its application and capture it in the metric's meaning-system.

Alternatively we can emphasize context and imaginative practice, and drive a wedge between imagination as a quality of mind like reason, assumed as an always present and defining characteristic of the healthy human being, by introducing the notion of agency, our ability to act imaginatively in a partially known context, i.e. under the conditions of uncertainty Locke described. We can presume everyone has imagination—we could not negotiate the everyday without it—but it is only visible in the world as our agency, in its action in the world. Agency, as well as imagination, is a defining human characteristic. The managerial challenge, having admitted agency, is to control and direct it. Bureaucracy is about command and control and shutting out unanticipated imaginative behaviour; it is not about preventing imaginative thinking. Knowledge work is about admitting the imagination, agentic behaviour directed towards the organization's goals. Managers want employees to harness their imagination to these goals and resolve the discovered and unanticipated difficulties that prevent the organization reaching those goals. We shift from arguing some people are more creative than others to a broader view of agency (Archer, 2003). The challenge is not to stimulate imagination, for it is already present, rather it is to harness and direct it.

The economic approach to agency theory is suggestive in that it deals with how principals control their agents, so harnessing their talents to the principal's purposes (Pratt and Zeckhauser, 1991). We go from merely encouraging creativity, implying it is invariably valuable, and overlooking its consequences, to presuming it and focusing on how we might direct it towards goals set by the shareholders and management. Agents are only knowledge workers, people with their own views, when principals operate under conditions of uncertainty, at which point the principal's knowledge is



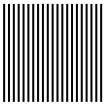
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insufficient to reduce the agents to rule-bound automata; there is knowledge asymmetry. Agency theorists presume agents align their superior knowledge to the principals' goals as they respond rationally to the incentives and punishments offered; a narrow theory in that imagination is admitted but subordinated to reason. There are other ways of explaining the relation between principal and agent and seeing reason interacting with imagination. More generally, the principal's process, and the manager's, is to engage the Knightian uncertainty of the agent's context and shape his or her agentic practice by discovering, deploying, and manipulating appropriate constraints.

### Agency in the Organizational Context

Incentives and punishments are but one category of organizational constraints over employee/actors, and press as much on their imagination as on their reason. Other constraints may illustrate the interplay of reason and imagination better. Agentic activity produces something new in the world, microprocessors, jet engines and so forth, all the panoply of contemporary life and business. But no matter what is happening in inventors' heads as they dream perpetual-motion machines, the Second Law of Thermodynamics confounds every attempt to build a device. The properties of materials are similar constraints over the engineering imagination. Indeed we might think of natural science as the body of discovered intractable constraints on our agency. But not all constraints have such brute solidity. Entrepreneurship is an agentic overcoming of the constraints of trade, and some of these, such as customer demand, logistical risk or product legislation may be more malleable than others. Within the firm budgets are important as constraints on others' behaviour, but they are also products of managers' decisions and are only as secure and relevant to practice as these managers' understanding and control of the organizational situation. So they are open to alternative interpretations about accounting methods, commitment and due date, appeals, returns and spillovers, and are susceptible to the metrics adopted. When knowledge is less than complete 'skunk-works' may sprout in the administrative shadows (Rich and Janos, 1994) and working through their budgets are often only one of a number of alternative ways managers can secure resources. While the intractability of the Second Law shuts down the imagination of all but the most intellectually aggressive scientists, the collectively constructed nature of the budgetary system may encourage all kinds of agentic activity (Hofstede, 1968). There are also social and institutional constraints over organizational agency; corporate laws, custom and practice, moral and ethical norms, customers' expectations, organizational culture and so forth. When we see these as socially constructed it is so because the agency of those engaged in the construction has collided with the social constraints over what can be allowed to happen. There are also psychological constraints, sometimes over where individuals will draw the line and refuse



management's orders, but also in terms of what they cannot imagine because of what they already know—such as the 'groupthink' phenomenon (Janis, 1972). Likewise Habermas's 'pragmatic epistemology' bridges the realism of the physical constraints over our agency with the moral constraints arising from the underlying rationality of democratic discourse (Habermas, 2003).

### Philosophizing the Constraints to Agency

The next section follows in the direction of Tywoniak's article, as well as the work of Nonaka and Takeuchi, Cook and Brown, and those others who see interaction between epistemological dissimilars as a viable approach to a dynamic knowledge-based theory of the firm. The term 'dynamic' bears on changes of practice in the life-world as much as it does to mental activity and discourse. Dynamic means learning and knowledge growth in every type of knowledge, not only of new data and new meaning, but also of new non-programmable or agentic practice, what we see as the defining feature of knowledge work. Ultimately we shall argue KM goes beyond the rational management of knowledge assets, and is radical and innovative in its approach to the management of agentic practice under conditions of uncertainty. Its philosophical underpinnings are those of a theory of agentic practice under uncertainty.

We can progress by noting parallels between the several universes of constraint over organizational agency and the several kinds of warrant or justification for truth-claims. The latter operate in the domain of language, inter-subjective and cognitive, while the former operate in the domain of practice. But as we regard practice as a manageable form of knowledge we find colinearity between constraints over agency and constraints over discourse. Thus to theorize the physical constraints we require an epistemology that allows them as a form of knowledge, and that takes us to various flavours of realism and to the traditional philosophy of science, as McKinley shows. Here the truth warrants are sense-data, experimental results. To theorize the social constraints we need an epistemology that turns to the social process for its truth-warrants, Gergen's social constructionism or the Habermasian consensus theory of truth, as Schreyögg and Geiger show. Likewise to theorize the psychological and emotional constraints we need an inherently subjectivist epistemology. This three-way slicing is grossly Procrustean but it gives us the flavor of the theoretical task. As we carry it through we might suggest if KM is indeed about managing trans-epistemic interactions, then it turns on some kind of meta-epistemology—and we know this cannot work (Scherer and Steinmann, 1999). We miss that there is something characteristically different about practice as a form of knowledge that continues to escape us.

To help us theorize the constraints on agency in the organizational life-world, we can look behind Heidegger towards Vico, an Italian whose major work was done around 1710, is the father of constructivism and



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occupies an odd place among philosophers (Berlin, 2000). On the one hand his work is little known, especially in our field, on the other his work is hugely influential, more or less creating the conceptual space for phenomenology and *Verstehen*, thereby setting the stage for the 19th century *Methodenstreit*, a battle that continues today between quantitative and qualitative methods. Vico distinguished the kind of knowledge we could have of the physical world (*certum*) and the kind we could have of the social world (*verum*). The distinction reappears in 20th century epistemology as Bolzano's separation of subjective and objective ideas (*Vorstellungen*) and the commonsense difference between physical and mental acts on which Luhmann's work turns. But Vico moves towards a remarkable conclusion, arguing we did not make the physical world, so our knowledge of it is always partial, based on experience, sense data, on the finiteness of our observations. The social world, in contrast, is of our construction. It only exists because of us and we 'in-dwell' in it. Hence, we have access to a deeper insider's knowing, that of the constructor rather than of the observer. Drawn to Vico's argument, some see the social sciences as the study of the meanings that social actors attach to their actions, while the natural sciences regard the world as made up of objects that neither attach meanings to nor choose their behaviour. The social sciences are about human agency, being and the experience of in-dwelling, while the natural sciences deny agency, human or otherwise, and see the world as an observable complex of insensate objects whose motions are guided by covering laws and causal relations. Just as we use the maxim 'we know more than we can say' to paraphrase Polanyi's epistemology, so we can use Vico's maxim 'that we can only know for certain that which we have created'. This way of thinking has lately evolved into 'radical constructivism' (von Glasersfeld, 2002).

Radical constructivism (RC) occupies a curious middle ground between realism, the belief that our experience of reality is the proper warrant for all knowledge, and subjectivism, that our knowledge is simply an arbitrary mental construction we impose on our sense-driven experiences to make them meaningful. RC's position is uneasy; at times it seems like critical realism, at others like phenomenology (von Glasersfeld, 2002). As an epistemology RC distances itself from subjectivism by allowing a world external to the mind (the realist's reality) to act as a constraint—Pickering's *Mangle of Practice* illustrates how this might work in scientific research (Pickering, 1995). We can imagine what we like but Nature can 'kick back' and puncture our thinking, denying it or falsifying its relevance to the task at hand. RC also distances itself from realism, denying the possibility of ever knowing the essence of what constrains human agency or stands behind our perceptions. In other words we can imagine a constraint like the Second Law, but we have no grounds for believing its statement gives us insight into the nature of the world beyond Mind—another way of stating Human skepticism. Thus RC slides from being an epistemology of mind and towards being an epistemology of practice, on the one hand



dealing with the agentic practice of constructing all that is knowable and on the other experiencing the unknowable as constraining what can be imagined.

The most profound impact of radical constructivism lies in the way it shifts our intellectual vantage point, and this is where Vico has been so influential. Realists observe objects from outside the objects being observed; our observation is what makes the thing observed into an object. Objectivity is our watchword. This vantage point is appealing because, having recognized our fallibility, we want our knowledge to be unsullied by our subjectivity, independent of the person observing and dealing only with the essence of what is being observed. As empiricists we want knowledge to be supported by experiments every observer might repeat for themselves, thereby claiming our knowledge back from religious dogma and political power. In contrast, pure subjectivity cannot reach beyond mind; everything lies within the imagination and is captive to the emotions, dogmas or powers that characterize the human social condition. Phenomenology is the subset of subjectivity that proposes all knowledge is imagined towards and so warranted by 'intention', the objects that give rise to the appearances our sense-data deliver.

Practice presents us with an epistemological puzzle because it is in neither place. We can observe practice and have a mental model of it, but whatever this is, it is not practice itself. Practice is lived not thought, not abstract-able from the contextual living of it. While we can see some practice as wholly determined—we jump off the roof and fall—much practice is agentic, chosen. In so far as we can explain the choice, using warrants and so forth, we successfully abstract from the practice itself and return knowledge to the vantage point of mind. But for those in-dwelling in practice, in a state of flow perhaps, the experience of practice can never be completely 'emptied' into explanations (Pirsig, 1974; Tsoukas and Mylonopoulos, 2004; Tsoukas and Vladimirova, 2001); irreducible residue remains, which Polanyi calls the 'personal' element and it is likewise pivotal for Bergson and Heidegger. So an epistemology of practice, unlike our familiar realist or phenomenological epistemologies cannot spin around defining knowledge in terms of mind. Instead it must be focused on living or in-dwelling, on our competence as human agents to negotiate our experiencing.

Tsoukas and Mylonopoulos draw attention to the shift away from the Aristotelian tradition of knowledge as about the self and 'the good', about living a good and honourable life, for example, and towards the utilitarian instrumentalism exemplified in McKinley's article or the operationalism of Bridgman (1927). Bringing in imagination pushes us back towards the moral dimensions of knowing, making the bridging of instrumental and moral, or the substantive and cognitive dimensions of discourse evident in Habermas's work all the more pressing. For realists the consequence of abstraction or codification is increased intellectual precision and, with that, the opportunity to direct resources and purposive action better (Boisot, 1995). But abstraction leads to the dissolution of the value aspects from which



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those in-dwelling know they can never escape while they remain engaged in the social milieu, and the corresponding rise of the notion that knowledge can be merely factual. Even more profound is the loss of the in-dweller's awareness of the dynamic potential inherent in being alive and being able to shape the future (Tsoukas and Mylonopoulos, 2004: 2). These are heavy costs, especially if we want to understand the nature of the entrepreneurial firm or socio-economic growth, i.e. growth within a living society rather than in a mathematical model. Indeed we could go further and say we risk forgetting the significance of human organization itself, how our ability to organize more or less delimits our ability to shape the human condition.

### **An Epistemology of Organizational Practice**

We suggest KM is about shaping the purposive and the agentic activity of those working under incomplete knowledge while their interactions are being directed towards chosen goals, so instantiating the organization. Analyses based on reason and on imagination complement each other, are co-dependent. The latter focuses on practice, going beyond rational decision-making as a complete explanation of practice and so bringing the analysis closer to managers' experience. The organizational actors' knowledge can be defined as their distinctive way of both constructing and living in the context created. The management process, given this framing, is a forcing, encouraging, or tempting of others to dwell in the organizational context agentially in ways that recreate the organization and move it towards its goals—which also means adopting the values implicit therein (Simon, 1997). So the necessary precursor to organizational practice is what Barnard and Simon dub the 'decision to participate', the individual's decision to adopt and enter into the organization's life-world. This is the recruit abandoning his or her personal agency to take up that of the firm, becoming an agent to the shareholders as principals. Sometimes people have no choice about this and are press-ganged like those growing up in a 'company town'. Sometimes, in democratic society, they have a choice and the organization emerges as a negotiated order. Sometimes people simply act rationally and trade their freedom for whatever the job brings.

As we argue above, explanations of these choices lie outside the organization and are tied up with the particularities of the social and organizational context, in particular with the historical evolution of that socio-economy and its political-legal system. On the one hand this grants individuals freedoms to act in their own interest and on the other grants organizations rights to deny or refashion their agency. In capitalist society people often abandon their agency in exchange for money, in political society for political objectives. But, as Foss reminds us, none of this allows us to say organizations emerge or evolve as if they were entities with systemic properties of their own. On the contrary, emergence applies to what lies beyond the legally and contractually defined existence of the firm as a complex social organization of goal-directed purposive and



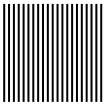
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agentic practices. The organization's identity and goals emerge from the external debate, the discourse and interaction among various powerholding stakeholders within and outside the organization. The resulting goals are the basis for the organization's sense of order, but the goal-setting does not produce the organization. Bringing that into existence requires planning, resourcing, and so forth, the POSDCORB of rational organization theory, but more fundamentally, the agentic overcoming of unanticipated difficulties which become the stuff of organizational legend and narrative (Brown et al., 2005; Kidder, 1982). The rational and agentic processes complement each other, as boundary-spanning does the epistemically disjoint domains of the organization and its environmental context (Thompson, 1967).

Organizational goals are but one dimension of constraint over its members' agentic practices, even though they have some theoretical priority as the source of the rationale underpinning its purposive activity. Politically, they summarize the negotiation between those with the environmentally established power to act as principals and various stakeholders from within and outside the organization. In a capitalist democracy the market is hugely effective as a way in which those beyond the organization's system of internal power and who do not participate as members, can nonetheless take part in the negotiation along with the owners, regulators, competitors, employees and so forth. While comprehensiveness is a strength of the stakeholder model (Bonnafeus-Boucher and Pesqueux, 2005), it always remains a model of the context, not of the organization itself and, being on the other side of our proposed distinction between the organization and the world, cannot tell us much about KM. Tsoukas and Mylonopoulos tell us the knowing of those whose actions construe the organization is about being able to make judgements within that context of collective purposive action. We might sharpen this point, suggesting it is about reading the organization's internal context well enough to see the opportunities for agentic practice, knowing how to act purposively in pursuit of its goals under the constraints discovered on the way. It is about being aware of the context as a framed complex of constraints to the participants' imagination—'complex' in the epistemic heterogeneity involved as the context is necessarily judged from the basis of the agent's constructive potential. But how can this context be characterized in language as well as by practice? What can we say about riding bicycles?

As we turn to Luhmann, and his use of Spencer-Brown's concept of distinction, some final pieces fall into place (Luhmann, 2002). Distinctions ground the warrants underpinning knowing as language—hot/cold, radical/incremental, individual/organizational and so forth. They are of two types epistemologically; externally referenced and self-referenced. The external referencing points to the other distinction on which the one being considered stands. Thus hot/cold implies a difference between the thing whose temperature is being measured and the thing doing the measuring—observing in Luhmann's terms. Language chains such distinctions together, and analysis is about revealing their linkages just as mathematical proofs



move towards QED. Ultimately we discover every chain of argument has an end, a point at which we observe ourselves observing—while also being blind to our not seeing what we do not see. This is a place of practice alone.

Clearly the knowing to be managed is not only that of practice; rather it is the interplay of the actor's potential organizational practice, both purposive and agentic and organizational language or jargon as it characterizes the context of organizational life—what Bourdieu might call *habitus* (Bourdieu, 1998). Just as the imagination reaches beyond the limits of agency, so the potential agentic practices reach beyond the limits of language. The enacted organization overlaps these epistemically distinct domains of knowing. The epistemology of knowing is a toolkit of distinctions the organizational actors have ready-to-hand to facilitate and shape their rational and agentic practice as they construct and reconstruct their context. Using these tools requires knowing the difference between the distinctions that are self-referencing and those that are externally referenceable within that particular *habitus*. We see the distinctions comprising Barnard's sub-systems turn out to be matters of assumption (Barnard, 1968); the physical, social and psychological domains of discourse differ only in their self-referencing assumptions, just as realist, phenomenological and radical constructivist epistemologies differ only in the assumptions and elements they prioritize. All are our own intellectual constructions.

## Conclusion and Some Empirical Dimensions

We suggest that to exercise control over their organization and execute their responsibilities to the stakeholders, managers must establish and communicate the organizational distinctions that integrate their organizational agents' reasoning and imaginative potential into the goal-reflecting knowledge and knowing context thereby created. The contrast of epistemologies opens up a space for agency and sets up a critique of any narrowly rational analysis that presumes but a single epistemology. Purposive action can only be analysed within a single logically coherent frame. This might be grounded in an epistemology which appeals to realist or social constructionist warrants, or to the individual's economic self-interest. As we follow the lead of Nonaka and Takeuchi, Cook and Brown or Tywoniak, and engage multiple epistemologies, we push the analysis on from the realm of logical reasoning and into that of inter-epistemic agentic practice. But to talk about and thus bring the potential into the organization's discourse and practice, in the manner implied in Schreyögg and Geiger's article, managers need a contextually appropriate inventory of distinctions, both self- and externally-referencing. In this sense the organization's discourse must be uniquely attuned to its history, vision, goals and experiences, to its own life-world as distinct from all others. We see Barnard's categories as merely indicative of the kinds of epistemological disjunctions to be bridged by the executives' entrepreneurial activity, they



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are not definitive. There is no logical reason for there to be three universes of distinction—or 23.

Drawing on Kelly's theory of personal constructs, Spender's research into 'industry recipes' shows these issues are less of an empirical problem than one might expect. Managers are well able to categorize their operational environments in ways sufficient to shaping their organization's practices with around 12 to 15 distinctions (Spender, 1989). With these in hand the theorist can look back and see they fall into Barnard's categories, but knowing these categories *ex ante* does not help us find how the managers frame their life-world, and to even expect this is to miss the idea of agency. An industry recipe is the collective construction of a group of firms as they engage and resolve a historically unique set of uncertainties. Under the conditions of uncertainty which always exist in the managerial world there is no description of the context that allows one to reason logically to the recipe for best performance. While one can say, retrospectively, 'of course', one can never say, 'it could only be this way'. This points to the fundamental epistemic disjunction between circumstance and outcome that is source of the situation's uncertainty, and this is what executive and organizational agency resolves. There is, of course, no finer illustration of this than Penrose's theory of the growth of the firm. Her analysis turns on the epistemic disjunction between the firm's resources and the services they provide (Penrose, 1995: 25). Penrose uses this to define the management team's learning as that which generates services from the firm's resources, and so sketches an epistemology for KM. But she does not tell us how this learning is managed. The Editors hope this introduction provides further illumination.

## References

- Alchian, Armen A. and Demsetz, Harold (1972) 'Production, Information Costs, and Economic Organization', *American Economic Review* 62: 777–95.
- Alvesson, Mats and Kärreman, Dan (2001) 'Odd Couple: Making Sense of the Curious Concept of Knowledge Management', *Journal of Management Studies* 38: 995–1018.
- Archer, Margaret S. (2003) *Structure, Agency, and the Internal Conversation*. Cambridge: Cambridge University Press.
- Arrow, Kenneth J. (1962) 'The Economic Implications of Learning by Doing', *Review of Economic Studies* 29(3): 155–73.
- Barnard, Chester I. (1968) *The Functions of the Executive*. Cambridge, MA: Harvard University Press.
- Berlin, Isaiah (2000) *Three Critics of the Enlightenment: Vico, Hamann, Herder*. Princeton, NJ: Princeton University Press.
- Blackler, Frank (1995) 'Knowledge, Knowledge Work and Organizations: An Overview and Interpretations', *Organization Studies* 16: 1021–46.
- Boisot, Max (1995) *Information Space: A Framework for Learning in Organizations, Institutions and Culture*. London: Routledge.
- Bonafous-Boucher, Maria and Pesqueux, Yvon, eds (2005) *Stakeholder Theory: A European Perspective*. Basingstoke: Palgrave Macmillan.



## Organization 14(1)

### Articles

- Bourdieu, Pierre (1998) *Practical Reason: On the Theory of Action*. Stanford, CA: Stanford University Press.
- Bridgman, Percy W. (1927) *The Logics of Modern Physics*. Reprint 1960. New York, NY: Macmillan Publishing.
- Brown, John S., Denning, Stephen, Groh, Katalina and Prusak, Larry (2005) *Storytelling in Organizations: Why Storytelling is Transforming 21st Century Organizations and Management*. Burlington, MA: Elsevier Butterworth-Heinemann.
- Cook, Scott D. and Brown, John S. (1999) 'Bridging Epistemologies: The Generative Dance between Organizational Knowledge and Organizational Knowing', *Organization Science* 10: 381–400.
- Czikszentmihalyi, Mihalyi (1988) 'Optimal Experience: Psychological Studies of Flow in Consciousness', in M. Czikszentmihalyi and I. S. Czikszentmihalyi (eds) *Psychological Studies of Flow in Consciousness*, pp. 15–35. Cambridge: Cambridge University Press.
- Dreyfus, Hubert L. (1979) *What Computers Can't Do: The Limits of Artificial Intelligence*. New York, NY: Harper & Row.
- Engeström, Yrjö (2000) 'Comment on Blackler et al. Activity Theory and the Social Construction of Knowledge: A Story of Four Umpires', *Organization* 7: 301–10.
- Fligstein, Neil (2001) *The Architecture of Markets: An Economic Sociology of Twenty-First-Century Capitalist Societies*. Princeton, NJ: Princeton University Press.
- Foss, Nicolai J. (1996) 'The "Alternative" Theories of Knight and Coase, and the Modern Theory of the Firm', *Journal of the History of Economic Thought* 18 (Spring): 76–95.
- Foucault, Michel (1980) *Power/Knowledge: Selected Interviews and Other Writings 1972–1977*. New York, NY: Pantheon Books.
- Gergen, Kenneth J. (1994) *Toward Transformation in Social Knowledge*. New York, NY: Sage Publications.
- Habermas, Jürgen (2003) *Truth and Justification*. Cambridge, MA: MIT Press.
- Hayek, Friedrich A. (1948) *Individualism and Economic Order*. Chicago, IL: University of Chicago Press.
- Hofstede, Geert H. (1968) *The Game of Budget Control*. London: Tavistock Publications.
- Janis, Irving L. (1972) *Victims of Groupthink*. Boston, MA: Houghton Mifflin.
- Kidder, Tracy (1982) *The Soul of a New Machine*. New York, NY: Avon Books.
- Kogut, Bruce M. and Zander, Udo (1996) 'What Firms Do? Coordination, Identity, and Learning', *Organization Science* 7: 502–18.
- Locke, John (1928) *Selections*. New York, NY: Scribner's.
- Luhmann, Niklas (2002) *Theories of Distinction: Redescribing the Descriptions of Modernity*. Stanford, CA: Stanford University Press.
- Nelson, Richard R. and Winter, Sidney G. (1982) *An Evolutionary Theory of Economic Change*. Cambridge, MA: Belknap Press.
- Nonaka, Ikujiro and Takeuchi, Hirotaka (1995) *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*. New York, NY: Oxford University Press.
- Osterloh, Margit and Frey, Bruno (2000) 'Motivation, Knowledge Transfer, and Organizational Form', *Organization Science* 11: 538–50.
- Penrose, Edith T. (1995) *The Theory of the Growth of the Firm*. New York, NY: Oxford University Press.



## Philosophical Foundations of Knowledge Management

J.-C. Spender and Andreas Georg Scherer

- Pickering, Andrew (1995) *The Mangle of Practice: Time, Agency, and Science*. Chicago, IL: University of Chicago Press.
- Pirsig, Robert M. (1974) *Zen and the Art of Motorcycle Maintenance*. London: Bodley Head.
- Pratt, John W. and Zeckhauser, Richard J., eds (1991) *Principals and Agents: The Structure of Business*. Cambridge, MA: Harvard Business School Press.
- Prusak, Larry (2001) 'Where Did Knowledge Management Come From?' *IBM Systems Journal* 40(4): 1002–6.
- Reich, Robert B. (1992) *The Work of Nations: Preparing Ourselves for 21st Century Capitalism*. New York, NY: Vintage Books.
- Rich, Ben R. and Janos, Leo (1994) *Skunk Works: A Personal Memoir of My Years at Lockheed*. Boston, MA: Little, Brown & Co.
- Sawyer, R. Keith, John-Steiner, V., Moran, S., Sternberg, R. J., Feldman, D. H., Nakamura, J. and Csikszentmihalyi, M. (2003) *Creativity and Development*. Oxford: Oxford University Press.
- Scherer, Andreas Georg (2003) 'Modes of Explanation in Organization Theory', in H. Tsoukas and C. Knudsen (eds) *Oxford Handbook of Organization Theory*, pp. 310–44. Oxford: Oxford University Press.
- Scherer, Andreas Georg and Dowling, Michael J. (1995) 'Towards a Reconciliation of the Theory-Pluralism in Strategic Management—Incommensurability and the Constructivist Approach of the Erlangen School', *Advances in Strategic Management* 12A: 195–248.
- Scherer, Andreas Georg and Steinmann, Horst (1999) 'Some Remarks on the Problem of Incommensurability, in Organization Studies', *Organization Studies* 20: 519–44.
- Shackle, George L. S. (1972) *Epistemics and Economics: A Critique of Economic Doctrines*. New Brunswick, NJ: Transaction Publishers.
- Simon, Herbert A. (1997) *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organization*. New York, NY: Free Press.
- Spender, J.-C. (1989) *Industry Recipes: The Nature and Sources of Managerial Judgement*. Oxford: Blackwell.
- Spender, J.-C. (1998) 'Pluralist Epistemology and the Knowledge-Based Theory of the Firm', *Organization* 5: 233–56.
- Spender, J.-C. (2006) 'Getting Value from Knowledge Management', *TQM Magazine* 18(3): 238–54.
- Starbuck, William H. (1992) 'Learning by Knowledge-Intensive Firms', *Journal of Management Studies* 29: 713–40.
- Teece, David J. (2000) *Managing Intellectual Capital: Organizational, Strategic, and Policy Dimensions*. Oxford: Oxford University Press.
- Thompson, James D. (1967) *Organizations in Action: Social Science Bases of Administrative Theory*. New York, NY: McGraw-Hill.
- Tsoukas, Haridimos (2005) *Complex Knowledge: Studies in Organizational Epistemology*. Oxford: Oxford University Press.
- Tsoukas, Haridimos and Mylonopoulos, Nikolaos (2004) 'Introduction: What Does it Mean to View Organizations as Knowledge Systems', in H. Tsoukas and N. Mylonopoulos (eds) *Organizations as Knowledge Systems*, pp. 1–26. Basingstoke: Palgrave Macmillan.
- Tsoukas, Haridimos and Mylonopoulos, Nikolaos, eds (2004) *Organizations as Knowledge Systems: Knowledge, Learning and Dynamic Capabilities*. Basingstoke: Palgrave Macmillan.



## Organization 14(1)

### Articles

- Tsoukas, Haridimos and Vladimirou, Efi (2001) 'What is Organizational Knowledge?' *Journal of Management Studies* 38: 973–93.
- Veblen, Thorstein (1965) *The Theory of the Business Enterprise*. New York, NY: Augustus M. Kelley.
- Von Glasersfeld, Ernest (2002) *Radical Constructivism*. London: Routledge/Falmer.
- Weick, Karl E. and Roberts, Karlene H. (1993) 'Collective Mind in Organizations: Heedful Interrelating on Flight Decks', *Administrative Science Quarterly* 38: 357–81.
- Winter, Sidney G. (1987) 'Knowledge and Competence as Strategic Assets', in D. J. Teece (ed.) *The Competitive Challenge*, pp. 159–84. Cambridge, MA: Ballinger.

**J.-C. Spender** retired in 2003 and lives in New York. He is a Visiting Professor at three universities in the UK but also teaches in Paris, Barcelona and Twente. He previously worked as a nuclear engineer, IT manager, banker and consultant. He is still researching managerial and organizational responses to uncertainty, the topic of his 1980 PhD thesis and subsequent book *Industry Recipes*. Address: Visiting Professor, Cranfield University School of Management, Cranfield, Bedfordshire, MK43 0AL, UK.[email: [jcspender@yahoo.com](mailto:jcspender@yahoo.com) or [www.jcspender.com](http://www.jcspender.com)]

**Andreas Georg Scherer** is Head of the Institute of Organization and Administrative Science (IOU) and holds the Chair of Foundations of Business Administration and Theories of the Firm at the University of Zurich (Switzerland). His research interests are in Organization Theory, Critical Theory, Philosophy of Science, Business Ethics and International Management. He has published six books. His work has appeared in *Academy of Management Review*, *Advances in Strategic Management*, *Business Ethics Quarterly*, *Journal of Business Ethics*, *Organization*, *Organization Studies*, and in numerous volumes and other journals. He is a member of the editorial boards of *Business Ethics Quarterly*, *Organization* and *Organization Studies*. Address: IOU, University of Zurich, Winterthurerstr.92, CH-8006, Switzerland. [email: [andreas.scherer@iou.unizh.ch](mailto:andreas.scherer@iou.unizh.ch) or [www.unizh.ch/iou/bwl](http://www.unizh.ch/iou/bwl)]