Forms of Knowing: From Habitual Blindness to Binocular Vision in Management Education

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For the OLKC Conference, Copenhagen

Work-in-Progress

Abstract

Management education that exclusively conveys scientific knowledge, whether functionalist or interpretivist, is regularly experienced as poor, distant, and unsatisfactory. To enrich students' understanding and ability to navigate complex situations, additional forms of knowing have gained prominence in management curricula. Their position and value vis-à-vis scientific concepts and methods remains, however, uncertain and in need of clarification. Making narrative or artistic logics congruent with scientific knowledge presents management faculties with problems of legitimacy, integration and practice. But to simply "scientize" these forms of knowing seems to destroy their pedagogic potential. In the present paper we argue that this dilemma of integration can be avoided by understanding forms of knowing as entwined with indeterminate problems. It fosters cultural pluralism around a single subject of inquiry, rather than to reproduce the university organization where each form of knowing has its own subject matter and where students nowadays are trained only in one.

Key words: epistemology, management education, pluralism, forms of knowing

A PROBLEM OF INTEGRATION

A growing number of critics portray the custom management education of today as either misguided or pernicious. The common culprit seems to be an 'unchecked scientism'—the unexamined acceptance and predominance of scientific concepts, outlooks, and corresponding analytical methods that characterizes business education the world over. While there are many reasons for this trend (Ghoshal, 2005), the sheer ubiquity of this form of knowing is not doing would-be managers many favors. Mintzberg (2004), for instance, argues that while scientific concepts and methods might help educate physicists, chemists, biologists, and even economists, such approaches cannot turn inexperienced people into managers; worse yet, managers trained this way tend to be distant, elitist, and self-focused once employed by a company. Similarly, Czarniawska (2003), claims that most of the present curricula propagate modernist ideas of control and masculine ideas of mastery. Such curricula build on myths of rationality and offer limited insight and reflections on the practices of organizing. As Brown and Duguid (2000) have shown, celebration of the rational myth for organizing may result in non-canonical practices being driven "underground", and with this, important knowledge about how to handle local problems and specific tasks becomes hidden, "forbidden knowledge". Finally, Ghoshal (2005), in his landmark condemnation of management education, argues that scientism with its authoritarian claim to universal truth destroys management practices which rely on many sources of knowledge, both scientific and otherwise:

> "…over the last 50 years business school research has increasingly adopted the "scientific" model—an approach that Hayek […] described as "the pretense of knowledge." This pretense has demanded theorizing based on partialization of analysis, the exclusion of any role for human intentionality or choice, and the use of sharp assumptions and deductive reasoning . . . Adoption of scientific methods has undoubtedly yielded some significant benefits for both our research and our pedagogy, but the costs too have been high." (pp. 76-77).

If managers were merely cogs or atoms, science's presence might remain a benign one. But as Ghoshal points out, management students not only read managerial theories, but enact them, regardless of their provenness. Thus a "double hermeneutic" is invoked where, having been taught the importance of rationally maximizing shareholder wealth, students run their corporations accordingly. Faced with a landscape of rational wealth maximizers, business scholars also refine their theories accordingly. While "double hermeneutic" is one description of this dynamic, a doubly tightening noose is another—a self reinforcing cycle that is leading to a remarkably tough, yet increasingly questionable, one eyed worldview.

Ghoshal and other critics (Pfeffer and Fong, 2002; Czarniawska, 2003; Guillet de Monthoux et al., 2007; Samuelson, 2006) suggest that there are forms of knowing that have at least as much, if not more relevance for the development of managers. Concordantly, we have seen a mild increase in curricular alternatives to scientific analysis (Donaldson, 2002; 2005); e.g., spirituality (Bhindi and Duignan, 1997; McCormick, 1994; Neal, 1997; Bierly et al., 2000), ethics (Bowie and Werhane, 2005; Trevino, 1992), art (Augier, 2004; Adler, 2006), or reflection upon personal experiences (Mintzberg, 2004; Kolb and Kolb, 2005). On the one hand, these additions are contributing to what might be called a "richness" (Weick, 2007), or "pluralist" (Ghoshal, 2005) perspective where multiple forms of sensemaking (e.g., conceptual, sensory, and aesthetic)—one where richness accrues from having an array of 'knowings' that inform, balance, and prod one another along.

On the other hand, while these additions may be helping to round the corners of what has become a rather squared arena, we concur with Ghoshal (2005) that they constitute more a form of tokenism than any real effort to redress management education. More importantly, while such courses may provide a sense that business is about more than just profit, having
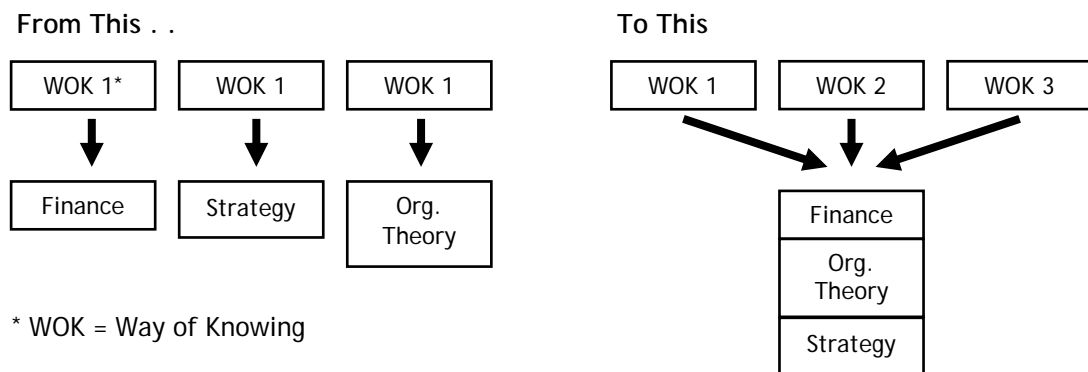
them stand apart from more mainstream coursework risks creating an educational tower of Babel where each course's voice strives to out-shout and out-persuade the other. Throughout the remainder of this paper, we argue that in order to step out of Ghoshal's progressively restrictive double hermeneutic we must step into a richer, and equally compelling counter hermeneutic. In particular, we make a case for one that involves the simultaneous use of 1) a calculated cultural pluralism, and 2) indeterminate problems, both of which are directed at enhancing students' "saper vedere"— at knowing how to see.

Cultural pluralism has its origin in enlightenment's mainstay that knowing has a value of its own and that it is the task of every individual to live, learn, and work towards an enriched symbolic representation of the world as a means towards personal refinement (Kant, 1959 (first published 1784); Cassirer, 1944; Goodman, 1978). Cultural pluralists argue that a rich understanding of the world helps the individual to develop generative responses to unfamiliar and complex events. According to this view, managers need to become literate in various forms of knowing to be ready to face the challenges of organizing and the treacherous waters of the business world. It is embraced in Weick's (2007) assertion that people need to complexify, rather than to simplify themselves, to deal with an uncertain and complex world (Useum, Cook, and Sutton, 2005; Schwandt, 2005).

When we speak of "*calculated* cultural pluralism", we signal that it is not enough to throw different knowings into the same pot or use smatterings of alternative courses to spice up the regular curriculum. Rather, we need to think through which forms of knowing can best complement one another and then juxtapose them in ordered ways—*within the regular management curriculum*. In other words, sapere vedere as the skillful application of different viewpoints will not come about through having a wide assortment of courses, any more than

having a kitchen full of different tools and ingredients will assure that one can skillfully combine and cook with them. Thus, while having specialist non-scientific electives (and scientific ones) remains a desirable as a way of rounding out one's saper vedere, we believe such courses must be preceded by ones that attempt to compare and contrast different forms of knowing within the same subject matter.

Figure 1: A Calculated Cultural Pluralism

From This . .   To This

| WOK 1* | WOK 1 | WOK 1 | | WOK 1 | WOK 2 | WOK 3 |

| Finance | Strategy | Org. Theory |

| Finance |
| Org. Theory |
| Strategy |

* WOK = Way of Knowing

To develop pluralistic literacy, students of management also need problems that encourage them to explore various forms of knowing. To date, the scientific agenda of management education has produced a preponderance of determinate problems—ones with clear and definitive answers. Instead, we suggest turning to indeterminate problems with their commensurate levels of complexity and multiple meanings. Whereas determinate problems require a 'right' solution, indeterminate problems necessitate the finding of a 'good enough' solution through a human-centered process (Dunne and Martin, 2006; Formosa and Kroeter, 2002; Rothstein, 2002; cf. Buchanan, 1992), requiring students to pragmatically decide which forms of knowing are needed to progress along the way. They serve as 'playthings' that can enrich one's familiarity and skill with particular forms of knowing, and knowing how to choose between them (see Figure 2).

Figure 2: A New Double Hermeneutic for Management Education

required to address

| Pluralist Forms of Knowing | Saper Vedere | Indeterminate Problems |

leads to
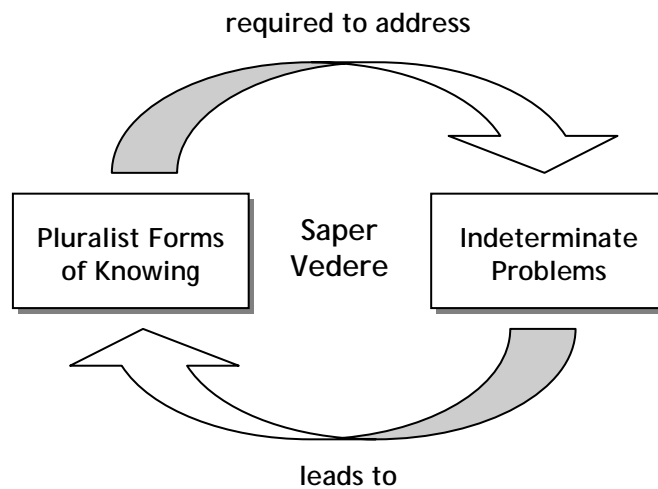
Linking cultural pluralism and indeterminate problems lets us highlight different aspects of what it means to saper vedere, with the aim of fostering a more profound understanding of how management education might accommodate and benefit from different forms of knowing. Following Figures 1 and 2 we will discuss the philosophical background of the idea that there are different culturally and historically developed forms of knowing, and give examples of how this idea is reflected in management education. Then we consider ways in which indeterminate problems can lead to richness in forms of knowing. To this end, we present an illustrative case and show how it can reflect different forms of knowing without reducing one to the other.

FORMS OF KNOWING

The German philosopher Ernst Cassirer was one of the first contemporary thinkers to take on the question of how various forms of knowing might be brought together, notably coining the terms "habitual blindness" and "two eyed" or "binocular" vision. More specifically, he argued that in our attempts to uncover the theoretical reasons or the practical effects of things, we concentrate on causality or finality. The consequence is that we lose sight of their instant,

immediate appearances, developing a habitual sort of blindness. He goes on to say that without the use of both eyes, without binocular vision, there will be no visual depth: "The depth of human experience in the same sense depends on the fact that we are able to vary our modes of seeing, that we can alternate our views of reality" (Cassirer,1944: 170).

He saw no other solution to the interpretivism/functionalism debate, which formed during his time (Friedman, 2000), than to expand upon what both have in common as scientific approaches. Both operate with symbolic representation, whether mathematical or linguistic. Hence, Cassirer started from the symbolic-representational aspect of science to conceptualize different ways of knowing (Cassirer, 1944). He tried to develop an account of the logical structure of individuals' symbol-giving activity by showing how the general categories of thought, such as space, time, substance, cause, and numbers acquire content differently (Verene 1969: 40-41). He went on to classify science, language, art, myth, history, technology, and religion as forms of knowing, each with their own individual logics. They are in Cassirer's terminology "symbolic forms" that cloak as well as reveal an individual's reality. Each form of knowing opens, illuminates, and hides different aspects of one's world, and carries its own specific logics.

The American philosophers Langer (1953) and Goodman (1978) later refined this perspective, concentrating mainly on art to develop the differences between forms of knowing. Goodman started Project Zero at Harvard in the 70's to research arts-based approaches in university education. Gardner, the head of Project Zero after Goodman, developed his concept of multiple intelligences out of this tradition of thought (Gardner, 1983).

All of these scholars claim that human knowledge is by its very nature symbolic knowledge and that symbolism has universality, validity, and general applicability, giving access to that which is specifically of the human world, that is, to the world of human culture. Humans can construct their symbolic world out of the poorest and scantiest material. This process of construction is also a process of reflection. Reflection becomes an important way of singling out focal elements from the whole indiscriminate mass or the stream of floating sensuous phenomena, and as such leads to more discriminant forms of knowing.

Following Cassirer, Langer, and Goodman's work, as well as the more recent trends in management education, we turn to the knowing that occurs in three domains: science, narrative, and art. These three modalities move in very different planes, different directions, and seek dissimilar ends, more than say science and technology, narrative and discourse, or art and design. According to Cassirer, they represent views of truth that are in contrast with one another, *but are not* in conflict or contradiction. This turns out to be both a liability and an asset. By themselves, each perspective results in habitual blindness and lack of depth in problem solving. Combined in a cohabitative way, however, they can compensate for one another's oversights and deficiencies, and through this offer the managerial student more robust ways of grasping and navigating organizational complexities. We consider each in more detail.

Science. Science's way to knowledge is through the classification of our sense perceptions. Science coupled with language helps us to classify and rationalize our concepts of the external world. Following Cassirer, such classification is the result of a determined effort toward simplification. Putnam (1983: 8) links this to functionalism. Functionalist theory (also referred to as positivism, modernism, empiricism, or the rational and analytic) is a way

viewing social phenomena as concrete, materialistic phenomena; as different kinds of social facts. Social life, norms, values and roles become hard and accurate statistical facts, and social reality something that exists separated from individuals. Knowledge is something that is given, a commodity or a 'thing' in a concrete world that can be revealed through the use of systematic methods and quantitative techniques. It is a view of organizations that encourages formal plans, quantitative goals and objectives, and hierarchical organizational structures. Management becomes a rational process of prediction, programming, and control, and organizational change something to be controlled and managed by the help of formal planning and quantifiable goals. Though interpretative science differs from the functionalist theories, it also stresses rights and wrongs, categories, and proofs as hallmarks of knowing.

As mentioned in the introduction, scientific forms of knowing have their share of problems, especially in management education. While they facilitate the development of a 'toolbox' filled with portable and transferable formulas, they encourage a cool objectivism and social distance that is at odds with the peopled world of organizations. Science's reliance on simplification and reductionism risks turning organizations into utilitarian machines rather than goal-driven communities, and the creation of clinical analysts rather than adaptive and socially skilled managers.

Narrative. Cassirer (1955) mentions myth as one of the oldest forms of knowing. Jerome Bruner takes this a step further, arguing that narrative, which subsumes myth, is by far the most predominant way of knowing (Bruner, 1994). Certainly narrative is ubiquitous in management education; e.g., the tales told by senior executives and management professors, the widespread use of case studies, and techniques derived from the field of narrative therapy and narrative change (Barry, 1997; Hancock and Epston, 2008; Gabriel, 2004). Whenever

participants of management courses are asked "How would you do it?", a narrative logic is invoked. This logic has an 'and then, and then' character; something happens and then something else happens, and/or one thing is juxtaposed next to another to create a certain feeling or sense. This is quite different than the logico-deductive 'if then' thinking (e.g., if this is present then that must be true) seen in the sciences (Bruner, 1994).

Similarly, narrative departs from the sciences in the way that it makes motivation and intention its central concern; the 'who' element is all important. It relies on personal identification and a willing suspension of disbelief in return for the possibility of being entertained or informed. If the recipient of an account can acknowledge that they too could have acted like one of the characters, be induced to have sympathy for a character's motivation, or be persuaded to like or admire a character (or the teller), the narrative's moral or point tends to ring true. For example, in E.M. Forster's very short story "The king died and the queen died of grief" (Forster, 1956: 93), we accord the story credibility because we can also imagine dying of grief when a loved one dies.

With narratives, depth of knowing comes about as the recipient compares what s/he experiences and would do with what the protagonist or antagonist experiences or does; through this, other ways of feeling, seeing, and acting are tried on and tried out. At the same time, this emphasis on local and subjective knowledge can be costly. In our wish to experience the enjoyment a story may confer, we sacrifice objective verification, critical challenge, and generalizability. For instance, when viewing the movie "Wall Street" and Michael Douglas'/Gordon Gekko's high-end lifestyle we might conclude that "diversification" is a good word to throw around at parties, but without a logico-deductive understanding of how diversification works, we would be hard pressed to apply the concept.

Art. Though narratives can become artistic, they mostly remain at a more prosaic, 'bread and butter' level—as a way of recounting and futurizing our days. To move into the realm of art, they must leave this dailyness, breaking the usual one-to-one connection between signified and signifier (Langer, 1942) and becoming "unusually moving in tensional ways" (Barry, 2008: 32). That is, they must create a vibrant, emotionally charged, and arresting tension between how we conventionally know things and how we might otherwise know them. The same is true regardless of the medium used. When the visual, musical, choreographic, conceptual, etc. become art for us, our regular forward-moving, purpose driven sense of time stops, as do our regular forms of reasoning. This in turn opens up a space for knowing that is very different from either narrative or scientific knowing:

> "…with an artistic form you cannot break it down into its component parts, analytically dissect the meaning of each part, and sum up those meanings into a meaning of the whole as you can with a completely discursive form. Instead, you apprehend an artistic form as a whole and take your own "felt meaning" […] from it. Thus, there is an inherent subjectivity to how we make meaning of the artistic form that cannot be eliminated through logical analysis." (Taylor and Carboni, 2008).

With this comes unusual forms of knowing. On the one hand, there arises a kind of 'hyper-real' experiencing of one's world: while "language and science are abbreviations of reality, art is an intensification of reality" (Cassirer,1944: 143). Art is not just a reproduction or imitation of a ready-made, given reality, but a journey of discovery through a continuous process of intensification (Mills, 1960). At the same time, art fosters a kind of 'not knowing', a knowing that the world is less fixed and more filled with possibility than we thought. In this arresting pause, we become temporarily baffled, upended, and in the best of cases, inspired and uplifted as we search for new interpretations and meanings in and around the art.

Adler's (2006) call for artistic approaches in management education, and the recent surge of arts-based programs in international business schools (Holtorn, Mickel and Boggs, 2003; Morris, Urbanski, and Fuller, 2005; Cowan, 2007; Davel et al., 2007) underlines art's pedagogic value. Attempts to bring arts-based reasoning into the business classroom are typically either illustrative and metaphorical (Davel et al., 2007; Augier, 2004), or are technique-based, employing methods borrowed from the performing or visual arts. Both applications tend to have an instrumental underpinning, despite the fact that most fine art eschews instrumental or functionalist outcomes (Taylor and Hansen, 2005); i.e., the metaphors and techniques used in the classroom are used to enhance students' skills in dealing with business matters and not to provide an aesthetic experience per se.

In the metaphorical, art-as-illustration examples, management educators suggest pieces of art or have students pick pieces of art that are then viewed and interpreted with respect to a business concept or problem. For example, Don Quixote (Augier, 2004) and Shakespearean plays (Ibbotson, 2008) form a stage for inquiring into leadership issues. Pottery (Mintzberg, 1987), or jazz (Hatch, 1999) provide metaphors for organizing and managing. And movie or theatre production (Austin and Devin, 2003; Alvarez, Miller and Svejenova, 2004) represent different ways of organizational making.

When art techniques are brought into the classroom, they usually involve exploring and expressing issues with the help of methods drawn from theater, sculpture, painting, music or dance. For example, social sculpting, theater improvisation exercises, staging techniques, and the use of creative constraints may be used to dramatize and deepen business cases (Ibbotson, 2008; Taylor and Carboni, 2008). Exercises in composition, drawn from painting, music, and/or the culinary arts, might be applied to issues of organization design (Barry, 2008).

Just as science and narrative forms of knowing can be problematic, so too can artistic ones. With the intuitive interpretation of art, we forget questions like "What is that for?" or "Where does that come from?" We may become lost in a 'sea of unknowing'. And being able to use artistic techniques may require a much longer apprenticeship than applying a science-based technique like capital-asset pricing:

> "The problem with applying techniques and practices from the arts is that it requires skill in the practice of the techniques. We would have difficulty working with the idea of how to comp behind a soloist as neither of us is a jazz musician. Reading books about comping for jazz guitar would be of little help as we just don't have the experiential base, the feel for what comping is." (Taylor and Carboni, 2008: 226)

In Table 1, we compare and summarize scientific, narrative, and artistic ways of knowing. Though we generally agree with Cassirer's argument that the three move in different planes, we also find that there are overlaps. For instance, narrative often combines science's use of categories with art's use of juxtaposition, and both art and science share the emphasis on careful, close-up focus.

Table 1: Comparative Ways of Knowing

	Science	Narrative	Art
Action elements	Categorizing and classifying	Sharing stories	Creating and illuminating
	Controlling processes	Contextualizing processes	Opening processes
	Conceptual understanding	Speculating	Immediate experiences
	Representing reality	Aggregating reality	Intensifying reality
	Reduction	Macro-micro	Holistic
	Simplifying the world	Making sense of the world	Making a meaningful world
	Counting elements	Enhancing context	Playing with context
	Searching for cause and effect	Creating collective understanding	Searching for aesthetic experiences
Level	Surface level	Cross levels	Deep level
Technologies	Formal plans	Personal communication	Feelings and emotions
	Objective interpretation	Intersubjective	Subjective interpretation

		interpretation	Values and norms
	Logistics	Rhetoric and grammatology	
	Numbers		Sensory engagement and cognitive disruption
		Mental images and experiences	
Dominating logics	Succeeding through logistics and hierarchical organizational authority	Succeeding through spreading world views	Succeeding through deeper organizational meaning, creativity, and play
Strengths	Easily transferable and transportable. Efficient. Creates safety. Many classes of issues can be solved.	Creates strong identification, contextual and social respect, and fits with how we predominantly think and act.	Generates new meaning and greater awareness. Good for working with and holding complexity.
Problems	Promotes managerial distance and machine-like organization. Drives out richness. Poorly suited to complex, peopled environments. Can overemphasize the obvious and deducible.

Too abstract. | Promotes localism and lack of critical judgment. Emphasis on persuasion and identification drives out efficiency, accuracy, and conceptual refinement. Risks reducing the world to a world of words.

Too familiar. | Slow; requires long immersion to be skillful. Possibly paralytic: emphasis on meaning can undermine emphasis on doing. Can be overly emotive, confusing, and disruptive.

Too unfamiliar. |

INDETERMINATE PROBLEMS

Earlier we argued that having an array of ways of knowing is not enough to create literacy in knowing. Even if management students were equally educated in each tradition, they will not be exposed to how different forms of knowing can combine to create richer understandings and solutions. For this to happen, we need a ground that by its very nature invites and 'tames' pluralism; e.g., an array of indeterminate problems. Rittel defined indeterminate problems as a "class of social system problems that are ill-formulated, where the information is confusing, where there are many clients and decision-makers with conflicting values, and where the ramifications in the whole system are confusing." (cited in Buchanan, 1992). Indeterminate problems require a variety of treatments, appreciation, representation, or reduction, thus allowing for different forms of knowing to be brought forward. As such, they can be indeterminate in multiple ways. For instance, the problem may be the finding of a suitable problem or question in the first place, requiring an act of "problem finding" (Getzels and Csikszentmihallyi, 1976). The emphasis is on finding a problem that is attractive, one that has

'grip'; not any old problem will do. In a different variation, a setting may contain several obvious issues; perhaps these are unconnected, in which case the question may revolve around whether there should be crossovers. The issues may be interrelated, which raises the question of 'chunking'—what should be grouped with what and how should one's problem-solving time be arranged? A problem may create different values for different stakeholders, each valuable in their own way. A problem might begin as determinate, presenting a clear question with a clear answer, but become indeterminate in how the solution is to be presented (depending on the stakeholders involved).

All this begs the question of problem selection—which ones and where from? According to Schön, some organizations are dominated by indeterminate zones of practice (Schön, 1983). These are zones where the problems at hand are messy and unique and cannot be managed by applying standardized methods, analytical thinking techniques and scientific processes. The answer 'is not in the books'. We are faced with uncertainty, complexity, paradoxes, and value conflicts that call for multiple interpretations and a special awareness of the here-and-now situation. Departmental intersections (e.g., marketing and production operations), interorganizational zones (e.g., companies and their physical communities; departments and professional groups), the confluence of old and new practices, mergers and other forms of restructuring, high velocity industries, and entrepreneurial startup settings all represent or contain such zones. A different answer to the problem selection question involves a return to the field of management practice—to choose arrays of problems that managers often run into and to word problems in ways that are closer to what managers face, prior to having been sorted out. Yet another answer is to deliberately seek indeterminate problems that invite a specific array of knowings; in other words, start with the kinds of knowings one wants to contrast and then select a case that 'asks' for these.

To show how an indeterminate problem might require and enrich different forms of knowing, we provide a short case example and then discuss how science, narrative, and art provide different takes on the problem and how they together create a richer image (Irgens, 2000: 192-194). The case is of course already in a narrative form, underlining that all knowing already starts with some type of symbolic representation.

Case Example: HAP

When the Hydro Aluminum Corporation (HAP) board asked Johnny Undeli to go to the town of Raufoss to become the new CEO of HAP-Raufoss, they had seen the writing on the wall, and it was written in red. The company was facing economic ruin in a market for aluminum products that was anything but promising. "We were more than 300 employees in a company that seemed like a social club. We hardly knew what it meant to be profitable", said former union chairman Armann Myrland.

Undeli accepted the position, but on one condition: He was first going to take the vacant position as marketing manager for about half a year, in order to get to know HAP from the inside. That he would become HAP's new CEO was kept secret. Undeli was trained as a manager and knew how to analyze spreadsheets and map organizational problems as they surfaced. He used his first months in HAP to analyze productivity and market possibilities and identified HAP's problems in the form of quantitative historical data.

When he finally took over as the new CEO, he used the numbers to establish a shared understanding of the crisis the company was in, in order to legitimate the productivity gains and cost savings that had to come. As a starting point Undeli decided to change employees' attitude towards the company. HAP would become a world-class company whose lead others would want to follow. His first major actions were to halve the number of top leaders from ten to five, do away with privileges like company cars, and move the executive parking lot outside the fence, where managers had to mix together with other employees. Thereafter, he held personal talks with each and every employee. "It took time. Three months." said Undeli. "But it was worth it."

Undeli's actions won the union's trust. Because he didn't see any possibility other than reducing the number of employees, he got acceptance from the union representatives that allowed him to establish a trustful cooperation. Thereafter, Undeli set himself the goal of building a winner culture. The means were unusual: even though the company was still operating deeply in the red, he proposed to spend a million Norwegian crowns (about 130,000 Euros) to paint the production hall, floors and all, completely white.

The employees didn't know what to think. They were used to fighting for each and every investment, and money was never spent if the usefulness and economic rationality of the expenditure was not fully documented. And here was this new CEO proposing to paint the production hall white! "What in all the world is that supposed to be good for?" many employees asked. It would soon be dirty and stained again. And it would take precious time away from the struggling operations. Surely there must be better ways to spend the little bit of company money that was left. But Undeli managed to get the board on his side and the hall got a new coat of paint. "If you want to be creative you have to be brave," Undeli said. "In the moment that you come with a new idea, you are a minority."

There was method in Undeli's madness. The white paint was clearly a symbolic act. But it was more than that; the symbolism affected employees' actions. Once the hall became bright and nice, the employees were more inclined to maintain order and cleanliness. Order and cleanliness led to less absenteeism, and being able to keep track of things meant less time spent searching for tools and less production interruptions. Both quality and productivity rose.

Undeli was unorthodox in other ways. When the night shift set another production record, he surprised them when, in the middle of the night, he came without warning holding a bag of champagne. "The champagne corks went against the roof" a union leader said. "We shared the hall with another company. Only a half-wall separates us. We shook the bottle very hard and shot the corks over to the poor guys on the other side, into the dark ghetto. The mood was very good." Employees also got flowers and other small presents. Social arrangements became common. At Christmas, without telling anyone, Undeli bought two whole pages in the local newspaper where he published the picture of each and every employee, with a seasonal greeting to all from HAP.

The employees began to feel proud of their company. Families and the local community recognized that something was happening. Customers realized it too. What Undeli had started led employees to think that this was their company. Responsibility was delegated to each employee and their individual work group. A bonus scheme was implemented. Undeli's goal was for every employee to get 15,000 Norwegian crowns (about 2,000 Euros) at the end of the year. That he was effective in business terms is evident from the fact that two years after the initiation of the change program production had increased 40-45%. Absenteeism was more than halved, going from 10% to below 5%. HAP gradually established itself as one of the world's best companies in its industry, leaving the question of what's next? Undeli wondered if he should tinker further with the company or leave it be and move on.

A Multi-Perspectival Response

In the case response that follows in Table 2, we break the case up temporally, taking each key development in turn. At each breakpoint we consider the moment from a threefold perspective.

Table 2: Case Moments and Responses

Moment 1	*Undeli learns he's to be the new CEO and as 'undercover' marketing manager, conducts product & spreadsheet analyses.*
science	This is just what he should have done. He followed a business logic, trying to lessen uncertainty get control over the HAP processes. Ideally he will find the profit losing products and phase them out. Is it possible to connect the marketing analyses to operational analyses; e.g., identify whether the loss of profits is an outgrowth of product choice/placement or overcostly manufacturing?
narrative	Typical business story opening—a landscape of despair in need of a hero. Johnny Undeli...what a great name for a character; evokes a sense of the Mafia, James Bond, or something else exotic. Likewise, Undeli's 'secret' provides a nice vehicle for exploring HAP secrets and building interest. Will Undeli be seen as a 'stooge'? Could this be another kind of 1984, where Big Brother smuggles in its spies?
art	What is Undeli finding at the margins? Or where might he look for the unnoticed? What about making a real wall... "The Writing on the Wall Wall" that's painted black and has red writings? Blow the whole wall up—make it big, and then have a 'Berlin' experience—some kind of wall breaking event.
crossovers	Undeli could combine his scientific research with arts research—the 'odds and ends' in his spreadsheet analyses (things that don't add up) could provide starters for more artful projects, and having some kind of 'seeing wall' could provide pointers to the more interesting scientific studies (e.g., add in spreadsheet variables such as smile-to-task ratios, or look at job vs. home improvement initiatives). This could make for more interesting narrative. Johnny 'the Bond' Undeli gets accomplices...the narrative's opening could go from Numero Uno singing "Only the Lonely" to Fantastic Four-play.

Moment 2   *Undeli assumes CEO-ship. Aims for world-class reputation, halves the executive team, shifts the parking lot, and holds talks with all employees.*

Goal setting theory would predict a partial success here; this is a challenging goal given the company's history. However, goal theory would suggest that Undeli make the 'world class' goal much more concrete; e.g., sales of XYZ by Year XXXX. Is halving the exec team the best idea? Has Undeli conducted a spreadsheet study of their performance? What about the unprofitable product lines?

The lone gunslinger motif continues. "It took time…but it was worth it" feels at odds with the 3 months it took (which isn't such a long time, unless that's the only thing he was doing). We're getting a picture of a taciturn Harrison Ford-like type (Indiana Jones), and the lone voice here raises the question of what others are thinking, saying, doing.

To merely shift the parking lot isn't so interesting. What about reversing it for awhile? Having the 'low' employees get the high parking spaces and vice versa? Or have the 'high' people use the low facilities in general (bathrooms, cafeteria). Maybe run a graffiti day for the execs; have them respond in kind to their favorite HAP graffiti. Then use all this to have some talks about how it feels to use the various facilities (parking lot, toilets, cafeteria, etc.).

A tri-fold opportunity could be to hold the employee talks on the changed parking lot—set up a 'Talking Tent', which could symbolize many things ('on-the-move' housing, getting 'out there', becoming flexible). The tent-talks could be supplemented with tent dinners and celebrations. The tent talks could be coalesced into a 'tent talk booklet' or website, where different initiatives and ideas get set down in print.

Moment 3   *Undeli lays off employees, decides to build a winner culture. Paints the factory white. Gives champagne to the night shift. Buys flowers and presents for remaining employees. Publishes employee pictures in the newspaper.*

Painting the factory and buying the champagne appears to be a questionable use of the money, and it's unclear how Undeli secured permission for this. However, combined with the layoffs, these actions fit to some extent with punctuated equilibrium theory, where we could expect a number of upending events to come together during a change process. The presents, flowers, and pictures fit with behavior modification theory—reinforcing the new routines. First the stick, then the carrot.

The white factory fits with the white knight idea; the champagne, flowers, and presents harken back to Robin Hood. As a lone rider character Undeli is starting to morph from the more 'upright' Indiana Jones/Harrison Ford to Mad Max/Mel Gibson. This loose canon sensibility makes for an interesting tension—loose canon vs spreadsheet guy. How many loose canons can you have around? How do people there respond? We need other characters or the story will die.

We like the 'white factory' event and wonder about how far it went. What about white tools—what would you do with a white hammer for instance? Maybe have some discussions around 'white work'. Combined with the champagne, there is a kind of 'lighten up' theme going on. Given the whiteness, why not treat it as a fresh canvas—newly gessoed? Have it become a surface for personalizing the work…maybe put large pictures of the champagne event on it, and blowups of the newspaper pictures. What about music? What's the musical equivalent of a white factory?

Instead of having all these solo initiatives, maybe Undeli could use the money to provide seed funding for employee-generated events—things that could work alongside the white factory initiative. These could be joined into the 'new HAP story', a series of intertwined narratives about alternate views on the work and invitations to outside others to comment on these narratives. This could help solidify the identity change.

Moment 4	*Undeli creates bonus scheme and self-responsible team structure. Pride, production, and company reputation increase, while absenteeism decreases. Having accomplished his goals, Undeli considers whether to move on.*

It is difficult to figure out what has led to what. Perhaps Undeli should have conducted more controlled experiments; for instance trying out the bonus scheme and team structure with a pilot group. As it is, a number of these interventions might or might not work elsewhere (e.g., other HAP plants), and there is no way to determine which ones to try. A question is whether to have Undeli move on or to increase the HAP Raufoss operations—maybe buy out the competitor's facilities?

The story ends in an 'all's well that ends well' way, with Undeli still cast as the lone gunman who comes in, cleans up the town, and heads off (maybe) into the industrial sunset. The whole story poses the question of lone leadership (and leader loneliness)—to what extent is this a good way to do things, something we want to emulate? In many ways this is a closed story; we learn nothing of Undeli and can only guess what he might have felt, thought, etc. and how he has changed through the story. As such he becomes a kind of God—a God on high who is not knowable. It is a story that would benefit from more voices and more interactive plots.

Why not stay and invite others there to be 'business artists'? Turn the HAP plant into a kind of artists' studio? Undeli created a nice "Tiny Apocalypse" (David Byrne's song) but must he be the only one? Maybe Undeli could set up some master classes, where HAP employees who want to be more creative can experiment with this. The plant could become a multiplex model—not just a model of productivity, but a model of meaningful production and the production of meaning.

Coming full circle, the 'under cover' theme has turned into a kind of 'uncover', 'new covers', or 'cover to uncover' one. Maybe this could become a general HAP theme—going undercover to uncover new opportunities, with everyone at the company being 'uncover' agents. The self-managing team intervention could be augmented with 'uncovery' sessions, where teams share and discuss their 'uncoveries'. This sets up a new challenge for Undeli et al: of connecting the newly discovered surfaces with deeper doings.

DISCUSSION AND CONCLUSION

As we look over the four moments in Table 2, we can see at least two developmental threads: one singular (each form of knowing over time) and another plural (intermixtures of knowing). While going through this exercise, we found that it was easier to stay within one modality and let each wave of consideration spark successive considerations; working this way, a certain uni-wave momentum was established. Crossing perspectives was much more difficult and required a deliberate effort. Nevertheless (to quote Undeli), "It was worth it." We came up with a perspective that would have been hard to find if we'd stayed with the parallel views, that of making 'uncovering' (as a form of discovering) an anchor point for our thinking.

Not surprisingly, crossing perspectives results in more possible directions and framings. Because of this, it also creates more discomfort—many options and unknowns get produced and they become correspondingly harder to hold. With this the crossings forced us to probe more, to pick and choose, to be clearer about what we wanted to keep and discard, and become clearer about what we were valuing. In the end this led us to the 'rich enough' conception of undercover→uncover, one that could stand alone and yet echo back to all the other responses; it became rich like a chocolate mousse can be rich, full of overtones, undertones, and subtle associations.

As we have seen, some management programs have already answered the call and have brought various forms of knowing into their curriculum. We already have programs where managers learn improvisation from jazz, creativity from painters, teamwork from actors, and so forth. There are also programs that bring artists into the company (there are certainly many artists that are convinced they can contribute to management development), who often "see" what the insiders, do not easily notice. But they were usually blind when it came to identifying the formal and structural sides of the organization, that is, they were not skilled in using a scientific eye on organization. They lacked the eye of organization science and the ability to identify causalities and finalities in an organizational context. In that sense many artists are just as one-eyed as many managers are when it comes to understanding organizations.

How forms of knowing constitute each other and shape different practices has to be seen before actions can be taken to prevent unwanted consequences. How practices are solving and creating problems at the same time is one of many managerial challenges where there is a need for an organizational "three-dimensional" view. To be able to see how forms of

knowing exist simultaneously and how these shape aggregated organizational behavior, is then a prerequisite for reflective actions to be taken. Knowing how to see is then an individual task that every student of management has to solve for themselves, and it is a task that is never finished as changing contexts and new situations require continued adaptation of the own perceptiveness. However, the basic stock of such ability can be laid in management education that is aware of the role of different symbolic forms of knowing in a managers' professional experience.

Managers are adult learners. And as other adults, most managers are already trained and educated in a technical-rational tradition with its roots in positivist science (Schön 1983). That is, we have all learned to follow scripts, rules and procedures that are developed for standard situations, or at least for situations that we perceive have sufficient in common. Other forms of knowing may help us transcend these limitations, but we still have a long way to go before we have developed management curricula that are based on the combination of forms of knowing. We still have to answer questions like: What does it really mean to "see" organizations, and how can this be learned (and taught)? How can habitual blindness be avoided? How do you "see" organizations with various eyes, simultaneously? How can we develop actionable knowledge based on a combination of different ways of knowing in order to become skillful practitioners of organizing?

CONCLUSION

The historical development of university education has not been blind to different forms of knowing. They were all assigned their own subject area: arts, theology, humanities, mathematics, medicine, natural sciences and so on. Through the middle ages and the

enlightenment, a student would take a range of subjects and come in contact with a variety of forms of knowing, today a student enrolls for a comparably narrow subject, say management, and then is asked over and over again to specialize in a sub-area of it. Hence, a student is not able anymore to draw the benefit from the variety of forms of knowing taught at a university (etymology of university => lat. universitas, meaning "the whole, aggregate, entire") – they only get a tiny part of the whole. In this paper, we suggest correcting this situation by bringing different forms of knowing to bear on each subject; in our case management education.

We have argued that one cannot understand forms of knowing without considering the indeterminate problems that they may relate to and vice-versa. Design thinking, which has become popular recently, all too often ignores its reliance on forms of knowing and replaces it with a focus on process. Obviously, the present discussion of cultural pluralism and indeterminate problems doesn't provide us with a final answer to how one could integrate forms of knowing in management education. Much remains to be thought, tried and evaluated. But it servers as a point-of-departure, which allows further investigation and creative unfolding and enlarging of promising directions in management education. The reason why scholars and teachers feel uneasy about drawing on various forms of knowing is that it is often seen as a way to relativism. One can use different methods, but struggle to reason how they might actually form the basis for a richer understanding. The position of cultural pluralism tries to avoid relativism through reliance on symbolic processes and by placing them into a pragmatist perspective. The discussion of forms of knowing in respect to management education tells us that we need to allow indeterminate problems into business education, and we need to allow students to look at them from various forms of knowing.

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