Can We Make Sense of Knowledge Management's Tangible Rainbow? A Radical Constructivist Alternative

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ABSTRACT   *Nonaka and Takeuchi's highly influential account of tacit–explicit knowledge-conversion in Japan's knowledge-creating companies has been instrumental in Knowledge Management's institutionalisation of Michael Polanyi's distinction between 'tacit knowledge' and 'explicit knowledge'. But tacit knowledge has been misunderstood and what Nonaka and Takeuchi claim in the name of explicit knowledge does not make sense. Whereas Polanyi was concerned with the discovery of absolute truth about ontological reality, Nonaka and his colleagues insist that truth is 'in the eye of the beholder'. Yet, Nonaka et al.'s implicit nihilism seems to have gone unnoticed. Many people talk about explicit knowledge as if it existed on a par with scientific knowledge: a tangible commodity that is 'as real as rocks'. Arguably, Nonaka and Takeuchi have offered a 'lesson from Japan' that has distorted Polanyi's concept of tacit knowing, inspired unwarranted faith in the viability of 'explicit knowledge', and ignored the significance of power mediated by 'high-context' communication. This paper uses Ernst von Glasersfeld's work on radical constructivism to make sense of Polanyi's insights into tacit knowing without invoking notions of metaphysical truth. With reference to knowing, learning and communicating in Japanese organisations, we suggest that a radical constructivist approach offers a viable alternative to Nonaka and Takeuchi's knowledge-conversion model.*

Keywords: tacit knowledge; explicit knowledge; radical constructivism; communication; sensemaking; power

Today's relativists, persuading themselves that all opinions enjoy the same standing in the light of reason, take it as a green light to believe what they like with as much conviction and force as they like. So while ancient scepticism was the sworn opponent of dogmatism, today dogmatisms feed and flourish on the desecrated corpse of reason. Astrology, prophecy, homeopathy, Feng shui, conspiracy theories, flying saucers, voodoo, crystal balls, miracle-working, angel visits, alien abductions, management nostrums and a thousand other

cults dominate people's minds, often with official backing. 'Faith education' is encouraged by the British Prime Minister, while Biblical fundamentalism, creationism and astrology alike stalk the White House (Simon Blackburn).[1]

Introduction

In his recent book, *Truth: A Guide for the Perplexed*, the distinguished British philosopher, Simon Blackburn, considers thinking on both sides in the 'war of words' between absolutist and realist interpretations of truth. Although Blackburn professes even-handedness and does not offer a conclusion, relativists might feel particularly perplexed by his clever invective. Whereas Blackburn's absolutists are responsible, reasonable people who rely on science and common sense—'Science and common sense offer *their own* explanation of why we do well using them'[2]—his relativists seem to lack moral fibre in the face of temptations to abandon reason's responsibilities. The American philosopher, Richard Rorty, is lampooned for his observation that truth is what your colleagues will let you get away with. Rorty's view, Blackburn objects, is 'outlandish even by philosophers' standards'[3] and he takes comfort from the fact that Rorty's more constrained colleagues would not let him get away with, what Blackburn believes to be, a sensationally shocking statement.

We have no reason to suspect that Blackburn considered the assertion by Nonaka and his colleagues that truth is 'in the eye of the beholder'[4] when he placed management nostrums among his litany of egregiously shocking dogmatisms that feed on the desecrated corpse of reason. But it could be a prime target for the full force of his formidable verbal firepower. Losing faith in truth reminds Blackburn of G. K. Chesterton's remark about people who lose their faith in God: it is not so much that they will believe in *nothing* that is the problem, but that they will believe in *anything*.[5] In Lewis Carroll's *Through the Looking Glass*, the White Queen tells Alice that to believe in the impossible is merely a matter of drawing a deep breath and shutting her eyes: 'Why, sometimes I've believed as many as six impossible things before breakfast', the White Queen admonished.[6] Similarly, believing in management nostrums is not necessarily commensurate with common sense. Some of us might recall breakfast management seminars where the White Queen spoke in all but name. Courtesy of Nonaka and Takeuchi, Polanyi's distinction between tacit knowledge and explicit knowledge has emerged as the type of easy-to-digest management nostrum that could be served up with toast and orange juice. Make the tacit explicit and manage more effectively. Take a deep breath. Shut your eyes.

Even by the standards of management studies, tacit–explicit knowledge-conversion sounds outlandish. It appears to be a way of converting the personal capacity 'to know' (tacit knowledge) into an object (explicit knowledge) that can be *managed*. Explicit knowledge is presented as a universally comprehensible commodity, which can be stored in a knowledge archive, shared with colleagues or clicked across cyberspace. Moreover, many people have come to use the term as if it invoiced a 'true' reflection of a real external world. But this would be a sleight of hand. Explicit knowledge has wholly subjective origins. It is created when a person articulates an opinion that he or she *believes* to be *justified*. There is no requirement for it to be a true reflection of 'reality'. Yet, Nonaka and Takeuchi's colleagues have allowed them to get away with synthesising objectivism from subjectivism. Knowledge Management (KM) has flourished and, in the process, deified Nonaka and Takeuchi's interpretation of Michael Polanyi's arguments. But KM contradicts at

least two crucial aspects of Polanyi's philosophy: his idea that all knowing is personal knowing and his search for the truth about a real external world.

The core of KM's confusion centres on tacit–explicit knowledge-conversion. In an incisive essay entitled 'Do we really understand tacit knowledge?', Haridimos Tsoukas[7] makes the crucial point that Nonaka and Takeuchi's book, *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*,[8] has helped to institutionalise an erroneous view of Polanyi's insight into tacit knowing. Short of a brain transplant, the capacity to know is not a transferable commodity: it is inherently personal and inherently tacit—'*All knowledge falls into one of these two classes: it is either tacit or rooted in tacit knowledge*'.[9] An individual's active shaping of his or her experience can become the subject of conscious thought through the gestalt integration of unspecified particulars that lie outside consciousness. But, contrary to Nonaka and Takeuchi's argument, Polanyi's use of gestalt psychology made it logically impossible to be explicit about the particulars of a tacit integration—'We can only point to the existence of tacit integration in our experience. We must be forever unable to give it an explicit specification'.[10]

A second aspect of KM's misunderstanding of Polanyi stems from its failure to acknowledge that Polanyi was a realist. He was one of the world's leading physical chemists and tipped for a Nobel Prize (an honour that was subsequently bestowed on his son, John). His faith in the existence of truth about a real external world was uncompromising: 'If all men were exterminated, this would not affect laws of inanimate nature'.[11] Different people might have different beliefs about what constituted the truth, but there was only one truth.[12] In contrast, Nonaka and Takeuchi take the view that truth can be whatever people believe is justified. Amid an irreverent and innovative approach to Polanyi's legacy, they hardly seem to care about enlisting a full-blown realist as a foot soldier in their crusade for relativism.

Our argument attempts to develop a distinction between Polanyi's insights into tacit knowing and his metaphysical conjecture about the nature of truth. While his insights into personal knowing offer a genuinely innovative approach to 'sensemaking',[13] his theory is constrained by its reliance on metaphysical assumptions about what lies beyond human experience. Who could say, for example, whether the extermination of the human race would affect the 'laws' of social science? If a new human race were to emerge, would it rediscover the laws of neoclassical economic theory? To avoid such conundrums, we suggest that sensemaking should be limited to the realm of human experience. On this account, Ernst von Glasersfeld's radical constructivist approach offers scope to accommodate Polanyi's insights into personal knowing *without* embracing his metaphysics. Armed with a radical constructivist alternative, it is possible to revisit Nonaka and Takeuchi's 'lesson from Japan' to construct a different view of knowing and learning, one that is capable of making some sense of communication, context and the practice of power.

In common with Polanyi's concept of tacit knowing, radical constructivism is developed from the proposition that the capacity to know is *personal*. Knowledge (no matter how 'knowledge' is defined) is in the heads of persons and the knowing subject has no alternative other than to construct what he or she knows using his or her experience.[14] Knowledge is *not* passively received, but actively constructed by the cognising subject; it is *not* the 'discovery' of ontological reality, but the subject's cognitive capacity to organise his or her experiential world.[15] In contrast to Polanyi, radical constructivism has nothing to say about the nature of 'being' associated with ontological reality. Nevertheless, radical constructivism can allow us to make sense of the 'practice of science' that is sustained by *intersubjectively viable* communication

among scientists who trust each other to uphold the scientific doctrine. By extension, power mediated by what the American anthropologist Edward T. Hall called 'high context' communication,[16] could be seen as the basis for intersubjectively viable knowing and learning in Japan's 'company as family' workplace organisations.[17]

As we will see, Nonaka and Takeuchi's view of communication is simplistic: unlike perspectives on personal knowing and the subjective construction of meaning, they assume that explicit knowledge could be understood by *anyone*. Yet, Polanyi's original work embodied a sophisticated and innovative approach to communication. Specifically, it avoided some of the difficulties encountered by Ludwig Wittgenstein—who is regarded as one of the twentieth century's greatest philosophers—in his philosophical investigation of how ordinary language is used. Although Polanyi[18] did not seem to suspect any affinity between his thought and that of Wittgenstein, Cahal B. Daly[19] has argued that there is a striking resemblance between Wittgenstein's appeal to ordinary language to dispel errors in philosophy and Polanyi's struggle to dispel the meaningless use of explicit knowledge in positivist science. For Wittgenstein, 'Philosophy is a battle against the bewitchment of our intelligence by means of language';[20] 'A main source of our failure to understand is that we do not *command a clear view* of the use of our words'.[21] In a separate but similar way, Polanyi fought to make sense of the epistemological distinction between the knower and the known; and it could be argued that Polanyi was more successful.[22] His concept of tacit knowing enabled him to dismiss positivism's ideal of a 'strictly explicit knowledge' as 'strictly meaningless'.

> The ideal of a strictly explicit knowledge is indeed self-contradictory; deprived of their tacit coefficients, all spoken words, all formulae, all maps and graphs, are strictly meaningless. An exact mathematical theory means nothing unless we recognize an inexact non-mathematical knowledge on which it bears and a person whose judgment upholds this bearing.[23]

But, in a manner that might make the White Queen proud, 'strictly meaningless' explicit knowledge is presented—in Polanyi's name—as the mainspring of Nonaka and Takeuchi's argument.[24] KM appears to be a bewitchment of our intelligence by the language of explicit knowledge. Early evidence suggested that KM could offer an opportunity to 'learn from failure';[25] yet, KM practitioners continue to use the term 'explicit knowledge' as if it were meaningful.

To put our discussion in context, we pause first to consider what Nonaka and Takeuchi have claimed in the name of tacit knowledge, explicit knowledge and tacit–explicit knowledge-conversion. We then turn our attention to Polanyi's search for the truth and develop implications arising from its incompatibility with Nonaka and Takeuchi's relativism. Next, we propose that Polanyi's concept of tacit knowing—*if* separated from his metaphysics—is compatible with radical constructivism. And there is much to be gained by rejecting Nonaka and Takeuchi's interpretation of tacit knowledge in favour of Polanyi's original insights. Whereas Polanyi's view of personal tacit knowing avoids awkward questions about the realist concept of privileged access to self-knowledge associated with Cartesian dualism and behaviourism, Nonaka and Takeuchi's interpretation of Polanyi seems to be vulnerable on both counts. In terms of its popular influence, the sheer scale of Nonaka and Takeuchi's slash and burn approach to conquering the complexities

of philosophy is spectacular. But does the collateral damage to established scholarship render it a Pyrrhic victory?

Believing in Impossible Things

> Man can believe the impossible, but can never believe the improbable (Oscar Wilde).

From the outset, Nonaka has been clear about the need to believe in the impossible. In an early account of 'The knowledge-creating company' published by *Harvard Business Review* in 1991, he declared that 'To convert tacit knowledge into explicit knowledge means finding a way to express the inexpressible'.[26] In tandem with Hirotaka Takeuchi, he published a book-length version of the argument,[27] which has become a hugely influential 'lesson from Japan'. Its central message is simple: 'The explanation of how Japanese companies create new knowledge boils down to the conversion of tacit knowledge to explicit knowledge'.[28] Hence, Nonaka and Takeuchi propose that:

> Tacit knowledge is highly personal and hard to formalize, making it difficult to communicate or to share with others. Subjective insights, intuitions, and hunches fall into this category of knowledge … To be more precise, tacit knowledge can be segmented into two dimensions. The first is the technical dimension, which encompasses the kind of informal and hard-to-pin-down skills or crafts captured in the term 'know-how' … At the same time, tacit knowledge contains an important cognitive dimension. It consists of schemata, mental models, beliefs, and perceptions so ingrained that we take them for granted. The cognitive dimension of tacit knowledge reflects our image of reality (what is) and our vision for the future (what ought to be)[29]

whereas:

> Explicit knowledge can be expressed in words and numbers, and easily communicated and shared in the form of hard data, scientific formulae, codified procedures, or universal principles. Thus knowledge is viewed synonymously with a computer code, a chemical formula, or a set of general rules[30]

and:

> For tacit knowledge to be communicated and shared within the organization, it has to be converted into words or numbers that anyone can understand. It is precisely during this time that conversion takes place—from tacit to explicit, and, as we shall see, back again into tacit—that organizational knowledge is created.[31]

Allegedly, tacit–explicit knowledge-conversion enables 'inexpressible language', associated with an individual's 'cognitive tacit knowledge', to be expressed as explicit knowledge, which is presented as a universally comprehensible language: it comprises words or numbers that can be understood by 'anyone'. Immediately we are confronted with questionable propositions. Is it possible to have a 'private

language', the language of 'cognitive tacit knowledge', intelligible only to the private self? And, is it possible to have a 'value free' language, the articulation of explicit knowledge, which is universally comprehensible? Are we to assume that *everyone* has an identical capacity to interpret a given signal in a given way?

Possibly, the 'private language' point raises a philosophical problem that is sufficient to rupture Nonaka and Takeuchi's model, as we will consider in a moment. Meanwhile, the idea that explicit knowledge is a universally comprehensible language that conveys unambiguous meaning—*a language that everyone understands and no one misunderstands*—might seem outlandish, but it is a principal part of Nonaka and Takeuchi's quest for a 'universal model' of knowledge creation.

> We believe that the future belongs to companies that can take the best of the East and the West and start building a universal model to create new knowledge within their organizations. Nationalities will be of no relevance, as we will no longer identify the key characteristic of successful companies as being Japanese, American, or European.[32]

Irrespective of the context in which 'the best' is generated, it is assumed to be applicable anywhere. A universal model would not differentiate between characteristics of success that were constructed in Tokyo, Tehran or Timbuktu: there would be one universally applicable 'best'. With advances in global communication, any connected person who could voice an opinion about anything, might compete in the global market for explicit knowledge. As the influential American journalist, Thomas Friedman, put it: people everywhere could 'plug in and play'.[33] For Freidman, 'the world is flat' meaning that there is a level playing field. On this account, explicit knowledge could 'empower' everyone in every corner of Friedman's 'flat earth'.

Astonishingly, many in the management studies community seemed happy to take the concept of explicit knowledge seriously—even though it involves some heroic assumptions. Subjective sensemaking—based on truth that is 'in the eye of the beholder'—is converted into explicit 'knowledge objects', such as 'scientific formulae' and 'universal principles', which Western traditions normally associate with objective knowledge. In this way, objectivity can be synthesised from subjectivity. For Nonaka and Takeuchi, *amplifying* and *crystallising* the knowledge of an individual produces universally comprehensible explicit knowledge. Through tacit–explicit knowledge-conversion, the sense that one individual makes of the world can be made available to everyone in the world. Whereas the West has been hamstrung by concerns with 'truth', Nonaka and Takeuchi relish the freedom of unbounded syncretism. They note that 'there is a rich traditional epistemological tradition in Western philosophy, but almost none to speak of in Japan'[34] and conclude that 'any *adequate* theory of knowledge creation must use elements of both [Western and Japanese approaches to knowledge creation]'.[35] Without this syncretistic blending, it appears that *any* theory of knowledge creation would be condemned to inadequacy.

Syncretism, it seems, is a passport to approbation and popularity. According to Takeuchi and Nonaka,[36] Peter Drucker called Nonaka and Takeuchi's book a 'classic'. During the late 1990s, references to KM mushroomed.[37] The editors of a major handbook on organisational learning and knowledge management suggest that Nonaka and Takeuchi 'set the standard' for the emergent field of

'organizational knowledge';[38] while the editors of *Organization's* January 2007 special issue on 'The Philosophical Foundations of Knowledge Management' suggested that Nonaka and Takeuchi's book is 'surely KM's most influential work'.[39] Even Cook and Brown's attempt to 'strengthen Nonaka and Takeuchi's central claim about "knowledge creation"'[40] by rejecting tacit–explicit knowledge conversion in favour of a focus on 'knowing as action', did not oppose treating tacit knowledge and explicit knowledge as conceptually distinct *tools of knowing*. On the contrary, they insisted that tacit and explicit knowledge 'tools' each come in two types, possessed respectively by individuals and groups (giving no less than four types of knowledge-tools), which are related to 'knowing' by mixing metaphors drawn from 'dancing' and 'bridging'. While Cook and Brown's emphasis on the *process of knowing* could be the gateway to elegant simplicity, the sheer complexity of their 'dancing–bridge' model is challenging.

Rather than try to 'fix' Nonaka and Takeuchi's distinction between tacit knowledge and explicit knowledge, it might be better to revisit Polanyi's original work on tacit knowing and concentrate on whether it is wise to indulge the concept of 'strictly meaningless' explicit knowledge. Conceivably, Nonaka and Takeuchi expected their book to be treated as a 'message from Japan' rather than a 'plea to reconsider Polanyi's work on knowledge'. Given the subsequent influence of their work as a vehicle for popularising Polanyi's philosophy, Nonaka and Takeuchi's treatment of Polanyi's work is surprisingly brief. As Nonaka and Takeuchi explain in a footnote, Polanyi was not considered worthy of inclusion in their lengthy literature review chapter, entitled 'Knowledge and Management',[41] owing to his 'view and background'.

> We did not include Polanyi in Chapter 2 [Knowledge and Management], because he is still considered minor in Western philosophy because of his view and background. Michael Polanyi was born in Hungary and was the brother of Karl Polanyi, an economist, who may be better known as the author of *The Great Transformation*.[42]

While Polanyi's supporters might be dispirited to have vague aspersions cast on his 'view and background', Nonaka and Takeuchi's book has transformed Western philosophy's 'minor figure' into KM's guiding light but, in the process, helped to institutionalise an utterly erroneous reading of Polanyi's work on knowledge.[43]

From a Japanese point of view, occasional references to Polanyi could be seen as *kazari-mono* (decorations): gestures that are offered to reassure readers about the book's intention to be international. And Polanyi is merely one decoration among many. Surely, the Japanese spirit (*yamato-damashii*) should not be compromised by an unwarranted preoccupation with a point of pedantry? Contradictions stimulate creativity! Visions should be vague! But, Anglo-Saxon readers who have never set foot in Japan, let alone worked in Japan for a Japanese organisation, might make little sense of such gestures. While it could be that Nonaka and Takeuchi used Polanyi's name to decorate their argument, *de facto*, he became their argument.

Before Nonaka and Takeuchi invoked Polanyi as the philosophical foundation for their model of tacit–explicit knowledge-conversion, Polanyi did not have a particularly high profile in the management literature (although his books were discussed widely—half a century ago—at the time of their initial publication). And, with the distinguished exception of Haridimos Tsoukas, the management studies community does not seem to abound with defenders of Polanyi's

philosophy who are willing to dispatch a dialectical jab in defence of his original insights. But, if we turn to another of Nonaka *et al.*'s philosophical 'decorations', Friedrich Nietzsche, contemporary commentary abounds. When the 'later Nonaka' and his colleagues align themselves with Nietzsche's claim that 'There are no facts, only interpretations',[44] they are casting a line into a well fished and controversial pool—one that excites strong passions, as the grand inquisitor, Simon Blackburn, has noted.

> He [Nietzsche] appears quite wilfully to put himself in the firing line for a self-refutation charge ... And the interpretive problem is worse given that he entirely throws over the sober conventions of philosophical writing. Reading him can feel like listening to a great drunken bellow, a huge gust of wind attempting to blow down ancient forests, including those that shelter the rest of us. And one of the shelters he rattles is the shelter of truth. But which direction is the gale blowing from?[45]

Blackburn uses Nietzsche's slogan that 'there are no facts, only interpretations' to characterise relativism: it could 'serve as a motto for the relativist movement'.[46] In many people's eyes, Blackburn observes, Nietzsche is 'a high priest of relativism' and 'the patron saint of postmodernism'.[47]

Nonaka and Takeuchi's interpretation of Polanyi might put them in Blackburn's firing line for a self-refutation charge: the sober conventions of philosophical writing have been sacrificed in the name of relativism and popularity. Suddenly, Polanyi's painstaking argument has been subordinated to the popular appeal of a great bellow—an imaginative interpretation—directed at the constraints of Western philosophy. But do Polanyi's contributions deserve to be damned in this way?

Polanyi's Search for the Truth

> *I believe that in spite of the hazards involved, I am called upon to search for the truth and state my findings* (Michael Polanyi).[48]

Far from believing that truth was in the eye of the beholder, Polanyi insisted that 'there is only one truth', although 'every person might believe something different to be true'.[49] His fiduciary framework assumed that like-minded scientists, who trusted each other to uphold the principles of the scientific method, would seek to be *objective* in the sense of establishing contact with a 'hidden reality'[50]—'*The freedom of the subjective person to do as he pleases is overruled by the freedom of the responsible person to do as he must*'.[51]

> ... personal knowledge in science is not made but discovered, and as such it claims to establish contact with reality beyond the clues on which it relies. It commits us, passionately and far beyond our comprehension, to a vision of reality. Of this responsibility we cannot divest ourselves by setting up objective criteria of verifiability—or falsifiability, or testability, or what you will. For we live in it as in the garment of our own skin. Like love, to which it is akin, this commitment is a 'shirt of flame', blazing with passion and, also like love, consumed by a universal demand.[52]

For Polanyi, truth exists on the other side of the experiential interface: it challenges the committed scientist to declare his or her discoveries, subject to the caveat that such declarations could be wrong.

As the next section will explain, Polanyi's notion of tacit knowing involves learning in the course of personal experience. In the case of a scientist who dwells in the particulars of a given scientific problem, it comprises an attempt to establish contact with a 'hidden reality'.[53] The passionate pursuit of discovery involves a target that could not be specified. Drawing an analogy with Plato's story of *Meno's* search for 'virtue', Polanyi[54] contended that, if a scientist knew what he or she were looking for, he or she would not have a problem and, if the scientist did not know what was being sought, there would not be any possibility of finding anything.

Of course, personal knowing is not the whole story: science is a cooperative venture undertaken in concert with fellow scientists who can be trusted to share what Polanyi saw as a passion for the truth. His essay on 'The Republic of Science' explained that 'scientists, freely making their own choice of problems and pursuing them in the light of their own personal judgment, are in fact co-operating as members of a close-knit organization'.[55] While the capacity to practise power in the Scientific Republic is not distributed evenly, the community's authority is mutual; it is established *between* scientists, not over them.[56] Support from within the republic underpins a fiduciary framework that confers authority on its administrative bodies. Although the world's oldest scientific academy, Britain's Royal Society, retains its founding motto, *Nullius in Verba* (In the words of no one), which could be seen as a rallying cry for objectivity and the belief that observations could be made without an observer, the practice of science relies on objectivity being validated *in the words of scientists*.[57] In fiduciary terms, the issue becomes one of whom you can trust to uphold the scientific doctrine in his or her personal search for truth.

For C. B. Daly, the greatness of Polanyi's work stems from the novelty of a distinguished scientist refuting positivism: 'Polanyi shows that positivist interpretations are simply not adequate to the experience of scientists, to the reality of the community of scientific research workers, or to the history of science'.[58] While declarations of truth are inherently personal,[59] fellowship among scientists constitutes what Wittgenstein might have called 'a form of life' in which fellow 'insiders' make sense of scientific language. Such interpretations are inherently subjective, as Polanyi's monograph, *Science, Faith and Society*, which was first published in 1946, makes clear: 'How can we ever interpret a rule? By another rule?'[60] No rule can account for its own interpretation. And, if positivism in science cannot account for discovery or verification, our attention should not be directed to the *tools of science* (in the form of explicit rules) but to how these tools are *used*.

While Nonaka is happy to assert that truth can be whatever one happens to hold as a justified belief, Polanyi might have seen things differently. In his pamphlet, *Beyond Nihilism*, Polanyi[61] counselled against the 'armed bohemians' who follow Nietzsche. He was implacably opposed to Nazis and others, who inverted morality by corrupting what he saw as the legitimate search for absolute 'truth', simply to justify their personal beliefs.

> The Nazi disbelieves in public morality in the way we disbelieve in witchcraft. It is not that he has never heard of it, but that he thinks he has valid grounds to assert that such a thing cannot exist. If you tell him the contrary, he will think you peculiarly old-fashioned, or simply dishonest.[62]

While Polanyi's critics claim that he treats 'morality' as if it were an absolute value (as we will consider in our discussion of radical constructivism), the point remains that Nonaka and Takeuchi have made a decorative icon out of a man who might not have given them houseroom. Nonaka and Takeuchi seem to disbelieve in Polanyi's notion of truth in the same way that Polanyi disbelieved in witchcraft. They use the word 'true' in their definition of 'knowledge', but bracket its inclusion with the insouciant stipulation that 'truthfulness' is not the 'essential attribute of [what they take to be] knowledge'.

> … we adopt the traditional definition of knowledge as 'justified true belief'. It should be noted, however, that while traditional Western epistemology has focused on 'truthfulness' as the essential attribute of knowledge, we highlight the nature of knowledge as 'justified belief'.[63]

Freed from the requirement to relate to truth, explicit knowledge would be merely a matter of opinion that an individual holds to be justifiable and believable. Witchcraft is presumably justified and believable to those who practise the craft of witches. A similar argument could be made about KM.

The Process of Tacit Knowing

> *We can know more than we can tell* (Michael Polanyi).[64]

Polanyi's observation that '*we can know more than we can tell*' is fundamental to his work on the tacit dimension and has become quite well known as a KM slogan. It is cited by Nonaka and Takeuchi as part of their claim that, given appropriate effort, cognitive tacit knowledge could be articulated: 'the articulation of tacit mental models, in a kind of "mobilization" process, is a key factor in creating new knowledge'.[65] And Western managers have seized on the idea that tacit knowledge is a hidden resource than can be commodified and managed. Part of KM's allure seems to stem from the idea that it would make 'what knowledge workers know' explicit and 'empower' managers. Yet, KM's claim to reveal the tacit dimension would be an outright contradiction of Polanyi's argument about tacit knowing.

  In his book, *The Tacit Dimension*, Polanyi prefaced the phrase '*we can know more than we can tell*' with remarks about a new view of knowledge that harmonised thought and existence, and went on to acknowledge that the meaning of 'knowing more than we can tell' was not easy to express.

> I shall reconsider human knowledge by starting from the fact that *we can know more than we can tell*. This fact seems obvious enough; but it is not easy to say exactly what it means. Take an example. We know a person's face, and can recognize it among a thousand, indeed among a million. Yet we usually cannot tell how we recognize a face we know. So most of this knowledge cannot be put into words.[66]

For Polanyi, the act of recognition was a skilled performance that relied on things that we know but cannot explain. In the course of experience, we come to know familiar faces to the point where we can recognise them in an instant. But we are not conscious of the learning process that enables recognition. Nor are we aware of how

sense perceptions that are delivered to the brain fuse with what we have learned. Rather, a gestalt integration of unspecified details enters consciousness as a ready-made integration of unspecified particulars: we recognise the person whom we know.

Polanyi adapted gestalt psychology to the process of learning using two dialectical categories: *focal awareness*, associated with conscious thought, and *subsidiary awareness* that was acquired in the course of being in the world. For Polanyi, the learner is the *subject* (not the *object*) of his or her experience.[67] And the 'active shaping of experience'[68] is indicated through gestalt integrations that generate focal awareness of unspecified subsidiary details. Focal awareness and subsidiary awareness are related but mutually exclusive: you cannot be focally aware of an object *and* subsidiary details that are part of that focal awareness. For example, we might speculate that a person's eyes were among the clues that enabled us to recognise his or her face; but the gestalt integration of subsidiary clues that constituted recognition cannot be decomposed into component parts. If we shift our focal attention to a potential subsidiary clue, such as the person's eyes, the sense of seeing his or her face goes out of focus. We can only be conscious of one thing at a time.[69]

What we have learned—tacitly—in the course of our experience—offers a conceptual capacity for making sense of new experiences. And this capacity for acting and thinking can be amplified by the construction and use of various kinds of physical artefacts. Such artefacts could be seen as tools that a competent user can exploit, in a reflexively automatic subsidiary manner, to 'get things done'. Viewed in this light, a car could be seen as a tool. When a driver focuses on the road ahead, the use of the car's controls is subsidiary to the activity of competent driving, although this might not have been the case in Polanyi's driving: he was described by his wife as 'the world's most rotten driver' and his friend, the famous economist John Jewkes, once preferred to walk in the rain rather than accept a lift.[70] In contrast, Polanyi's capacity to use the tools of scientific theory to focus on novel problems in physical chemistry placed him among the world's most competent practitioners. The competent use of tools is a personal achievement.

While a pair of spectacles is an easy-to-use tool for achieving clearer sight, Polanyi pointed out that 'You cannot use your spectacles to scrutinize your spectacles'.[71] Trying to attend to the spectacles-in-use as a focal object would distract attention from what might otherwise be seen through the spectacles, *if* they were used in a subsidiary manner. Moreover, when Polanyi looked through *his* spectacles, the meaning that he 'saw' was constructed from *his* experience. Other people, who looked through Polanyi's spectacles, would not see what Polanyi saw, nor could they. Whenever we interpret what others say, or the way in which they act, we construct meanings in terms of *our own experience*: it is not possible to have another person's experience.[72]

In Polanyi's model, focal awareness is normally projected outwards, from the mind, incarnate in the body, towards a specific activity. But, if we turn our focal attention inwards, to ask how we experience ourselves, it becomes obvious that we cannot have a *wholly lucid, wholly explicit* knowledge of the self that is *wholly tractable to the self*.[73] Yet, Nonaka and Takeuchi propose that 'cognitive tacit knowledge' could be used to construct our image of 'what is' and 'what ought to be'.[74] In such a view, cognitive tacit knowledge generates linguistic concepts, based on the entirely personal experience of the knowing subject, which is inexpressible to

others. In short, the tacit dimension that Polanyi saw as ineffable, is assumed to embody a private language.

For Wittgenstein,[75] the concept of a 'private language' was a contradiction in terms because it could not be used to communicate with another person; a language that cannot communicate is not commensurate with the normal use of the word 'language'. Thus, Nonaka and Takeuchi have redefined Polanyi's concept of tacit knowing to rely upon what appears to be an unintelligible concept: an ineffable language. And, even if there were such a thing as an ineffable language, it would merely take us back to square one: language alone cannot resolve the *Meno*'s paradox—which is the very problem that Polanyi's concept of *knowing more than we can tell* avoided.

Despite talking about 'cognitive tacit knowledge' as if it were the achievement of an inner-self, Nonaka and Takeuchi claim to have synthesised opposing sides in the Cartesian split between body and mind. They invoke Zen Buddhism's 'oneness of body and mind'[76] to blend two seemingly opposing concepts: body and mind. While the 'oneness of body and mind' would avoid the inner self's problem with private language, Nonaka and Takeuchi are not the first to fuse body and mind in the name of philosophical progress. Gilbert Ryle railed against Cartesian dualism, which he saw as 'the official theory' that had to be countered: 'I shall speak of it [the official theory] as "the dogma of the Ghost in the Machine"'.[77] For Ryle, there was no ghostly self that inhabits an insensate body: mind and body comprised an integrated entity and the body–mind is no more than an object that responds to sense perceptions. Accordingly, the self is not a 'ghost within the body' but a detached impersonal 'observer of the body', which is able to view the body as an object among other objects. The self is 'another other' and all others are objects: there is no privileged access to an inner self.

> John Doe's ways of finding out about Joe Doe are the same as John Doe's ways of finding out about Richard Doe. To drop the hope of Privileged Access is also to drop the fear of epistemological isolationism; we lose the bitters with the sweets of Solipsism.[78]

In essence, Nonaka and Takeuchi's model suggests how a knowledge-creating individual's social interaction with Japanese colleagues produces explicit knowledge, which is an object that stands in place of the person's capacity to know.

Polanyi's distinction between focal and subsidiary awareness provides a viable alternative to both the Cartesian and behaviourist positions.[79] Personal knowledge of the self is entirely subsidiary *except* for whatever happens to be the object of focal attention at any given instant. We can only think about one thing at a time and it is not possible to have access to a wholly lucid, wholly explicit knowledge of what an inner-self might know. The Cartesian requirement of privileged access to self-knowledge is avoided. An individual is *not* conscious of what he or she knows, because that knowledge is known in a subsidiary way. Similarly, there is no need to resort to the behaviourist proposition that the self should be reduced to nothing-but-behaviour and interrogated by a 'second self' who stands outside the mind–body object. Polanyi's distinction between focal awareness and subsidiary awareness makes it legitimate to say 'I do not know what I know': it is not possible to have a wholly focal, wholly explicit knowledge of the self—*we can know more than we can tell.*

On the one hand, Polanyi's perspective on personal knowing enables us to recognise the unique capacity that the person has to use the subsidiary knowing

that constitutes his or her experience. On the other hand, Nonaka and Takeuchi suggest that the unique can become 'universal'. Perhaps it would make more sense to acknowledge an individual's uniqueness and consider how unique individuals construct 'others' in the course of knowing and learning that is intersubjectively viable. Radical constructivism offers such a possibility.

Towards a Radical Constructivist Alternative

> Objectivity is the delusion that observations could be made without an observer (Heinz von Foerster).[80]

For Heinz von Foerster, objectivity was the cognitive equivalent of a blind spot: we do not see what we do not see.[81] The idea that observations should be done without the participation of observers hardly seems commensurate with common sense. But, over the last two and a half millennia, the Western world has exhibited an overwhelming tendency to present knowledge as a representation of reality that is independent of the knowing subject. Such knowledge might not be perfect but, in principle, it was believed to be perfectible: 'As in the case of a portrait', Glasersfeld notes, 'the "goodness" of a piece of knowledge was to be judged by how well it corresponded to the "real" thing'.[82] Yet, unless we claim access to a god's eye view, we can only compare one model with another model. It is not possible to step beyond the experiential interface to compare a model with what Kant referred to as the 'thing *in itself*' (*Das Ding an sich*). The 'thing *for us*' (*Das Ding für uns*) is all that we have.

Radical constructivism is a theory of knowing and learning, not *being*.[83]

> It [radical constructivism] replaces the notion of 'truth' (as true representation of an independent reality) with the notion of 'viability' within the subjects' experiential world. Consequently it refuses all metaphysical commitments and claims to be no more than one possible model of thinking about the only world we can come to know, the world we construct as living subjects.[84]

It would be misguided to ask whether radical constructivism was 'objectively' true or false, because it rejects commitments to a metaphysical truth that transcends the world of experience. The value of radical constructivism can only be gauged by using it to make sense of knowing and learning practices. While Blackburn[85] does not address radical constructivism in his guide for those who want to be clear about the difference between absolute and relative truth, he might see the wholesale rejection of truth as tantamount to nihilism.

To be sure, radical constructivism is relativistic, but this does not mean that commonsense and science should be swapped for an unwarranted faith in witchcraft or worse. Nor does it amount to a declaration of solipsism in which a person's mind alone creates the world he or she experiences: there are *constraints*, which are evident whenever the world that we experience is not as we would like it to be. Viable knowing has to be reliable. Radical constructivists would not want to miss out on the value of knowing that has been refined with the aim of making it more reliable. And the practice of science could be seen as compatible with radical constructivism, *if* it were seen as the pursuit of viability. Quoting Humberto

Maturana, Glasersfeld[86] has offered a four-stage summary of 'the scientific method' that does not resort to metaphysical truth. In practice, what scientists do is: (1) specify the constraints under which a phenomenon is observed; (2) propose an explanation of interesting or surprising aspects of the phenomenon; (3) produce predictions; and (4) generate conditions that should lead to the observation of the predicted phenomenon. While science can be more reliable than everyday thinking, it is not qualitatively different, as laboratory studies in the sociology of science demonstrate.[87] In Einstein's words: 'The whole of science is nothing more than a refinement of everyday thinking […] even the concept of the "real external world" of everyday thinking rests exclusively on sense impressions'.[88] For Heisenberg: 'The deeper the scientist looks, the more he sees himself'.[89]

Appreciating the reliability of scientific knowing without recourse to metaphysical conjectures about truth removes an artificial barrier between the allegedly 'objective' (that which science deems to be 'true') and other forms of knowing. At a stroke, we could accept the value of Polanyi's insights into tacit knowing without his metaphysical baggage. Viability is an unambiguously human construction and cannot be used to invoke universal ideas that transcend human experience. We might then rescue the strengths of Polanyi's insights into tacit knowing from the jaws of some trenchant criticism. For example, Zdzislaw Najder's cogent critique of Polanyi's 'absolutistic ethnocentrism' highlights problems arising from the unvarnished *certainty* of his metaphysics, which contrasts with his carefully considered treatment of *uncertainty* in personal tacit knowing.

> How frequently we read about 'spiritual reality', 'transcendent obligation' to truth, justice, and charity, about 'truth' and 'justice' in an absolute, openly idealistic sense. That this is not only a matter of style is plainly shown by the example of 'beauty', which Polanyi also treats as absolute. All these concepts have to rest on certain specific ontological assumptions, and Polanyi's remarks on God and religion reveal these metaphysical foundations. Of course, if we accept the existence of God and supernatural forces, we shall be provided with adequate grounds for claiming that the values to which we are committing ourselves are indeed absolute.[90]

Notwithstanding Polanyi's relatively recent debut in management studies, theologians have long been fascinated with the possibility of enlisting Polanyi in their quest to make sense of the supernatural.[91] Radical constructivism, however, cannot admit Polanyi's speculations about what lies beyond human experience.

What we normally call 'reality' is the domain of relatively durable perceptual and conceptual structures that we come to use in our flow of experience.[92] An important part of this active shaping of our experience concerns the construction of 'others' who, in tandem with the development of communication skills, corroborate the sense that we make of our experience. Although 'normal' children might appear to learn their language skills without noticeable effort, it may take many thwarted linguistic interactions and repeated adjustments in the child's sense of what a word might mean before its use becomes reflexively automatic.[93] A child who grows up in a world where every apple is red might be surprised when a visitor brings a green fruit and calls it an apple. Can the stranger be trusted? What mental processes might lead the child to talk about visiting the Big Apple—New York—or buying an Apple Computer or being aware that there could be 'a rotten apple in every barrel'?

In Nonaka and Takeuchi's model, explicit knowledge is portrayed as a language of fixed meanings. But neither 'apple', nor any other word, can account for its own interpretation: what a word means cannot be separated from the way in which it is interpreted, which is always subjective. Wittgenstein, for example, had noticed that words appeared to summon aspects of personal experience but felt that this involved something 'occult' and should be avoided.[94] As the last pages of his last notebook, *On Certainty*,[95] suggest, he struggled until his death to maintain his earlier mission to convert meaning and truth into logical certainty, but could not remove the subjective element. From a radical constructivist perspective, the subjective element that Wittgenstein sought to eliminate is inevitable:[96] the semantic connection that relates words to meanings relies on the personal experience of each individual, who acts and thinks in a specific context. Moreover, if we go back to Polanyi, it is possible to see where he had an edge on Wittgenstein.

> … we must use the word 'justice', and use it as correctly and thoughtfully as we can, while watching ourselves doing it, if we want to analyse the conditions under which the word properly applies. We must look, intently and discriminatingly, *through* the term 'justice' at justice itself, this being the proper use of the term 'justice', the use which we want to define. To look instead at the word 'justice' would only destroy its meaning.[97]

Considering the word 'justice' in a focal sense can destroy its meaning. If we start repeating the word out loud, it soon sounds meaningless. The competent use of the word 'justice' consigns it to a subsidiary role: we *look through* the word (in the same way that a person might *look through* his or her spectacles) to see a meaning that is shaped by what we have learned in the course of our experience. The 'object' on which the language user focuses is not the word 'justice' but a 're-presentation' of something in his or her experience which bears on how the term is being used.[98] There is always personal background that the individual brings to meaning. As Polanyi cautioned: 'strictly speaking nothing that we can know can be said precisely'.[99]

Nonaka and Takeuchi's universalism also diverges from Polanyi's argument about language only being meaningful within a specific context.

> In learning to speak, every child accepts a culture constructed on the premises of the traditional interpretation of the universe, rooted in the idiom of the group to which it was born, and every intellectual effort of the educated mind will be made within this frame of reference.[100]

Different uses of language divide people into groups of insiders, who are differentiated from outsiders who see things in different ways. Emotions and expectations about what is acceptable cannot be separated from the context in which language is used. For example, some communities have believed that it was justifiable to burn people as witches. But, if we invoke Nonaka and Takeuchi's concept of tacit–explicit knowledge-conversion to obtain 'explicit knowledge' (*justified belief* expressed in words or numbers that anyone can understand) about who should be burned as a witch, it is difficult to see how this would be meaningful in contexts where people do not believe in witches. In Polanyi's view, context and the power of words cannot be separated: 'If, and only if, we believe in witches may we burn people as witches'.[101] Context counts.

Managerial practices in Japanese organisations are intertwined with the power relations that shape what is seen as legitimate *within the context of Japanese society*. Polanyi's original work on personal tacit knowing, viewed from a radical constructivist perspective, offers an opportunity to conceptualise power mediated by high-context communication among insiders. This is crucial, but it was assumed away in Nonaka and Takeuchi's 'lesson from Japan'.

Context, Communication and the Practice of Power: A Different Lesson from Japan?

> In an extreme case, a company may have a common grave for its employees, similar to the household grave. With group-consciousness so highly developed there is almost no social life outside the particular [workplace] group on which an individual's major economic life depends. The individual's every problem must be solved within this frame. Thus group participation is simple and unitary. It follows then that each group or institution develops a high degree of independence and closeness, with its own internal law which is totally binding on members (Chie Nakane).[102]

In her classic study, *Japanese Society*, which was first published in 1970, the Japanese anthropologist, Chie Nakane, explained how social identity in Japan is shaped by the groups to which one belongs. Individual 'attributes' are subordinated to the power of social expectations mediated by group-level 'frames of reference' or '*ba*', which evolve from interaction among close-knit groups of insiders. While *ba* could be translated as 'place', it might be seen as a 'field of interaction' that shapes the way in which members of a bounded collective relate to each other. Anglo-American models, in which 'atomised individuals' make rational decisions to maximise their wealth or personal happiness, hardly fit with Japanese society's implicit imperative to comply with highly aligned expectations about what constitutes acceptable ways of acting and thinking. To outsiders, interaction among a group of Japanese individuals might not appear to have an obvious order. The apparent randomness could be analogous to iron filings scattered on a piece of paper. But, to a Japanese insider, the social order is blatant: it is as if someone has placed a magnet under the paper and the filings have flown to trace the lines of flux. A compelling 'force field' or *ba* acts to shape one person's alignment with another. Silently. Uncompromisingly. There are many types of *ba* in Japanese society, but one has overwhelming importance: the traditional 'company as family' workplace *ba*.

By the mid-1950s, institutional conditions were in place whereby Japan's major employers could promise lifetime employment to a significant proportion of their employees[103] and, once such promises became widespread, a route was paved for the age-related promotion of insiders and the effective prohibition of poaching.[104] Permanent employees in upper-level Japanese organisations emerged as the custodians of a tradition that is passed to successive generations. Senior employees routinely groom junior staff as 'servants' who are expected to follow their 'master' up the organisational ladder, with the result that master–servant relations (*shujû no kankei*) add historical momentum to Japan's traditional, male-dominated status quo. Reaching top positions in an organisation relies on convincing colleagues that you are a 'team player'. Those who rise to 'take charge' know their supporters

backwards and can use these personal connections to 'see' what is happening in any part of the organisation. At the same time, the ease of information-flow among organisational insiders makes it remarkably easy for them to act collectively to retaliate against those who fail to meet expectations; fear of ostracism and lack of alternative employment opportunities encourage compliance. Practices that enable a Japanese organisation to exercise disciplinary control over insiders (*us*), who are differentiated from outsiders (*them*), rely on the idea that these practices are considered legitimate by the wider body politic that constitutes Japanese society.

Top-rank 'company as family' organisations recruit their employees from top-rank universities; and upper-level universities sustain their high ranking precisely because their graduates are sought by upper-level organisations. Such relational arrangements among organisations are mutually reinforcing. Even in twenty-first century Japan, the labour market for specialists remains limited. In comparison to their Anglo-American counterparts, traditional, upper-level organisations continue to operate as tightly bounded communities of insiders. There is a 'nested stability' in which 'company as family' workplace organisations nest within a stable web of inter-organisational relationships.

In the 1980s, when Nonaka and Takeuchi conducted most of their research for *The Knowledge-Creating Company*,[105] Japan's miracle economic growth looked to many as if it were unstoppable. Many in the West feared that Japan had produced a new and superior form of capitalism, but few seemed to appreciate the significance of the power relations that enabled tightly bounded communities of organisational insiders to *work*, *learn* and *innovate* together. Whereas Weick and Westerley[106] saw the 'learning organization' as an oxymoron (because *to learn* is to disorganise and increase variety, while to organise is *to forget* and reduce variety), Japan's 'company as family' workplace organisations are able to stimulate creative disorganisation without undermining the power relations that differentiate insiders from outsiders. Creativity among insiders generates information currents that flow easily and act against organisational ossification, but without breaching the organisation's boundaries. Moving staff between posts every few years helps them to see how the organisation fits together and stimulates fresh thinking as new teams of insiders get to know each other. Innovative technologies spring from established companies; and Japan's leading manufacturers have led the world towards new expectations about high-performance high-reliability products.

A distinguished English manager, whose team was outperformed by a Japanese organisation, commented that the Japanese spent many hours in each other's company: they 'worked and dreamt together',[107] anyone of them could cover for anyone else. In a Japanese organisation, many management activities that would require explicit instruction in, for example, an American or British context, are reflexively automatic. Nobody has to be told to do anything and many aspects of coordination appear to take care of themselves. But sustaining close community relationships among insiders would be difficult in contexts that celebrated liberal individualism and saw labour mobility, together with the freedom to hire-and-fire policies, as the key to managerial flexibility. Nonetheless, Nonaka and Takeuchi's argument is that Japanese management practices could become part of a 'universal model to create new knowledge', where 'nationalities will be of no relevance',[108] which does not take any account of the practice of power mediated by deeply embedded Japanese institutions. Although Nonaka and his colleagues[109] have developed their model of knowledge-creation to include the Japanese concept of

ba, their quest for a 'unified model' distracts attention from the power relations that shape practice within *ba* associated with a specific organisation.

While a 'power-free' model of *ba* does not make sense, the power relations that influence an insider's thoughts and actions are not easy for outsiders to appreciate. Conforming to group norms is important—as the Japanese aphorism warns, 'the nail that sticks out is hammered down'—but most of the hammering is informed by subsidiary aspects of tacit knowing: they do not necessarily become part of each 'hammer-wielding' individual's focal awareness. But, if someone did something morally reprehensible, inappropriate behaviour might be brought into sharp focus. There might be a need for some conscious hitting of the offending nail. Consider the case of the foreign employee who had been given a position in a Japanese organisation but wanted to take his full entitlement of three weeks' holiday all in one go.[110]

Foreign employee:	I have three weeks' holiday and I should like to take them.
Japanese division chief:	Japanese people do not take so many holidays in one go.
Foreign employee:	But I'm entitled …
Division chief:	Sit down, have some green tea, have some rice crackers …
Foreign employee:	Thank you. (Accepting the green tea and a rice cracker.)
Division chief:	Why didn't you take all the rice crackers?
Foreign employee:	Well, I didn't want to appear greedy …
Division chief:	And so it is with holidays! We offer you these holidays as a gesture. Only a foreigner would fail to see that it's greedy to take them all! What would your colleagues think?

Yet, it was a good-natured exchange. The division chief already knew that the employee had to return to his home country to sort out affairs after a family bereavement and was prepared to help. He sent the employee on an extended expenses-paid business trip to that country with no apparent work to do. On this account, the spirit of friendly paternalism can be warm and embracing. But, a few years later, when the employee was about to set off for a trip to his country, the division chief had a word; it seemed that a senior member of the organisation would be visiting the employee's country at the same time—'so, please devote a day or two to showing him around'. Although the employee's total holiday was only a week, he had become subject to Japanese expectations about mutual obligation that transcended any choice in the matter.

Nonaka and Takeuchi's grand rhetoric about a world in which 'nationalities will be of no relevance' sounds rousing, but they do not address the power relations that sustain and separate the myriad tightly bounded groups that constitute Japanese society. While distinguished visitors to Japan might be treated as gods, an outsider who sought to become an insider might encounter daunting barriers. For example, children who are born in Japan, but have Korean or Chinese parents, can experience significant discrimination that differentiates them from 'first-class' Japanese insiders. It is no easy thing to be accepted as a 'first-class' Japanese insider. Even those who are born Japanese and cannot be differentiated, in any physical

way, from 'first-class Japanese' can suffer enormous discrimination. Consider the plight of Japan's *burakumin* (estimated to number three million[111]) who are descended from segregated communities of outcastes that started to emerge in the sixteenth century.

> Prejudice exists against burakumin in marriage, employment, education, and many other areas. The marriage patterns of burakumin give an indication of persistent discrimination against them. A government survey of buraku communities shows that two out of three marriages in the sample are between those who were born in these communities. Inter-community marriages between burakumin and non-burakumin are in the minority, and marriages between a buraku male and a non-buraku female are much more frequent than between a buraku female and a non-buraku male. There are numerous examples of non-buraku parents or relatives opposing marriages with bura-kumin, refusing to attend marriage ceremonies, or declining to associate with a couple after marriage. Discriminatory practices in marriage sometimes involve private detective agencies called *kôshinjo* [Japanese for 'private detective agency']. At the request of conservative parents, these agencies investigate the family backgrounds, friends, political orientation and other private and personal details of a prospective bride or groom.[112]

But, despite the ending of Japan's long period as a 'closed country', the trauma of two atomic bombs, the Allied Occupation's introduction of an American-style constitution that guarantees individual rights, and previously undreamt of economic prosperity, today's Japan retains its ability to exercise prejudice against *burakumin.*

Even those who are born 'first-class' Japanese citizens discover that absence from Japan can jeopardise their insiderness. For example, children of parents who are posted overseas risk bullying when they return to school in Japan. According, to Dr Masao Miyamoto:

> … they are criticized for things like stating their opinions too clearly, questioning what the teacher says, chattering during lunchtime instead of eating in silence, and lacking in the spirit of cooperation. They are urged to go along with the group, and those who do not are made the targets of bullying.[113]

And the bullying of returnees is not confined to children, as Miyamoto came to realise. After 11 years of practising and teaching psychiatry in the United States, Miyamoto returned to Japan where he worked for a Japanese government ministry, but he was not a time-served insider; he failed to comply with the insider's code; and his new colleagues bullied him relentlessly.

The power relations that shape and sustain insider–outsider boundaries, along with associated expectations about what constitutes 'legitimate' discrimination and ostracism, are intertwined with the fabric of Japanese society. Coordination and control within Japanese organisations is not an achievement of formal rules, but a taken-for-granted 'form of life' for those who fulfil their obligations as first-class Japanese insiders. Yet, taking Nonaka and Takeuchi's vision of a universal model of knowledge-creation seriously would require us to: (1) accept that explicit knowledge was universally comprehensible; and (2) ignore the power relations associated with context-specific human interaction. We suggest that neither proposition is viable.

Arguably, the intersubjective viability of knowing and learning that enables Japan's 'company as family' workplace organisations to fuse working, learning and innovating relies on power mediated by 'high-context'—as opposed to 'low context'—communication.

> These terms [low-context and high-context] refer to the fact that when people communicate, they take for granted how much the listener knows about the subject under discussion. In low-context communication, the listener knows very little and must be told practically everything. In high-context communication the listener is already 'contexted' and so does not need to be given much background information. An extreme example: twins who have shared a long life in proximity to each other work at a much higher level on the context scale than do people of different cultures who have only just met.[114]

A focus on high-context communication shifts the focus of debate from 'what you know' to 'whom you know'. You have to be an insider to learn the interpersonal skills that are necessary to interpret your interactions with fellow insiders in an appropriate manner. Knowing how to 'make a difference', the practice of power, might have little to do with explicit accounts of what ought to happen. High-context communication creates scope for 'things that are not said' or 'things that are not done' to be interpreted in a meaningful manner. Contrary to Nonaka and Takeuchi's contention, intersubjectively viable communication does not rely on the production of explicit knowledge. Indeed, their concept of 'value free' explicit knowledge could be seen as a form of 'no-context' communication, which—given that information without context is meaningless—would be a contradiction in terms.

Conclusion

> The only given is the way of taking (Roland Barthes).[115]

Although the fashion for KM has flourished, few stopped to consider whether the uncritical acceptance of what Nonaka and Takeuchi called 'tacit knowledge' and 'explicit knowledge' made sense. We have argued that this is unfortunate. In too many cases, the 'given' that has been taken from Nonaka and Takeuchi's book is an unhelpful misunderstanding of Polanyi's philosophical insights.

Polanyi's answer to the problem of people seeing the same 'reality' in different ways was to imagine an absolute truth that transcended human experience. Responsible members of the 'Republic of Science' compare competing theories about what metaphysical truth *might be.* But, in Nonaka and Takeuchi's model of knowledge creation, truthfulness is not the essential attribute of knowledge: truth is in the eye of the beholder. It gives anyone, who believes that they are justified in expressing an opinion, the green light to say what they like with as much conviction and force as they like. We might well be reminded of Simon Blackburn's objection that 'management nostrums' nestle among relativism's litany of horrors. Nonaka and Takeuchi used Polanyi's name to decorate a spectacular Trojan horse that dazzled the management studies community. The gift-from-Japan was accorded a place of honour and worshipped by the KM faithful. Possibly the naive believed that it was forged in the name of objective knowledge, but it contained a form of

relativism bordering on solipsism. Suddenly, it seemed as if mysticism had triumphed over reason. Serious people spent large amounts of money trying to 'express the inexpressible'. The White Queen might have been delighted.

Explicit knowledge, we have argued, is a term that is too vague to be useful. What is the advantage of talking about 'explicit knowledge' if we mean 'information'? Or, put another way, how does the use of 'explicit knowledge' denote something that is different from 'information'? What is the justification for the epithet 'knowledge'? Clearly, explicit knowledge differs from objective knowledge that is produced according to the scientific method. Explicit knowledge has wholly subjective origins. Yet, it is often used *as if* it bore a family resemblance to objective knowledge.

Other problems with Nonaka and Takeuchi's model also seem to go unnoticed. Only individuals, Nonaka and Takeuchi insist, create knowledge.[116] And what individuals know is entirely subjective: it need not have any connection with 'truthfulness'. Instead, an inner-self somehow creates 'cognitive tacit knowledge' using—what appears to be—a private language that is inexpressible to others. But Nonaka and Takeuchi do not say anything about the philosophical problems associated with a private language or how such a language would overcome the *Meno*'s paradox. Rather tacit–explicit knowledge-conversation is cited as the process by which the inexpressible is expressed: private language (cognitive tacit knowledge) is transformed into a universally comprehensible public language (explicit knowledge). Even respected critics of Nonaka and Takeuchi, such as Cook and Brown,[117] do not flinch from the idea that tacit knowledge and explicit knowledge represent something meaningful. On the contrary, they suggest that each type of knowledge should be further divided into two distinct categories and thereby produce more types of knowledge object that are more meaningful. Rather than reject the path to nihilism, it seems as if they are more concerned with how to make better progress, building bridges and enacting dance steps along the way.

The Japanese *furoshiki* (wrapping cloth) that packages tacit–explicit knowledge-conversion seemingly offers the philosopher's stone. Its implicit promise is to turn base metal into gold; but, when the wrapping cloth is stripped away, the philosophical magic melts. Even so, the habit of talking about 'tacit knowledge' and 'explicit knowledge', *as if these terms were being used in a meaningful manner*, appears to be addictive.

As Haridimos Tsoukas pointed out,[118] the influence of Nonaka and Takeuchi's book has helped to institutionalise an erroneous interpretation of Polanyi's insight into tacit knowledge. We agree with Tsoukas and have tried to extend his point by separating tacit knowing from the metaphysical pole of Polanyi's 'participative realism'. A convenient fiction in the 'Republic of Science' is that truth transcends human experience, so that problems can be framed in ways that make them look as if they relate to ontological reality. But the flaws in this logic are thrown into sharp relief when we deal with concepts that are not amenable to reductionism. For example, the gestalt perceptions of what constitutes 'morality' vary dramatically between people and contexts. Consider, for example, George W. Bush's 'War on Terror'. If the abstract noun 'terror' meant the same thing to everyone (according to the logic of explicit knowledge), everyone would be on the same side. 'Knowledge' is also an abstract noun; but it is often used as if were an adjective to produce terms, such as 'knowledge economy' or 'knowledge worker' and—not least of all—'knowledge management', which sound important. And people can agree that they are important, even if they disagree about what they mean.

Notwithstanding Polanyi's reliance on metaphysical absolutes, his concept of the tacit dimension lends itself to transitive uses of the verb 'to know'. Rather than talk about the abstract noun 'knowledge', we can talk about a specific person knowing how to *do* a specific thing in a specific context. Knowing is akin to 'being able'. The self can be seen as the *subject*—rather than the *object*—of a specific person's experience. Accordingly, everything that we know is known in a subsidiary sense *except* for the stream of consciousness that shapes our focal awareness at any given moment. Such a perspective avoids awkward questions associated with Cartesian dualism and behaviourism, whereas Nonaka and Takeuchi's argument leaves them exposed on both counts.

The conclusion of Nonaka and Takeuchi's book suggests that Japan's knowledge-creating process is no longer an enigma that is endemic to Japanese companies; their last sentence proclaims that 'It is universal'.[119] Explicit knowledge, they contend, is capable of universal comprehension. Although our radical constructivist approach to knowing and learning in Japanese organisations makes relatively modest claims, it does engage with the complexities of communication. Close community relationships among organisational insiders energise a fiduciary 'force field' or '*ba*' that shapes breathtaking coordination. But a metaphorical magnet that moves insiders in the manner of iron filings might not exercise much power over 'non-magnetic' outsiders—although our hapless foreign employee, who wanted to take all his holidays in one go, did make some progress in sensing where the invisible 'force field' might lie.

Whereas Nonaka and Takeuchi's influence has helped to institutionalise a comprehensive misunderstanding of Polanyi's philosophy, radical constructivism allows scope for building on his insights into tacit knowing. A radical constructivist perspective can address the process by which the knower learns to make sense of 'others' and generate intersubjectively viable communication. *All* learning is an adaptive process in which the mind organises experience by organising itself and the sense that it makes of *others*. On this account, Polanyi's 'Republic of Science' could be reinterpreted as the quest to sustain intersubjectively viable communication among scientists who are committed to achieving repeatable experiences—according to the scientific method—that can be deemed viable. But the process of building up scientific knowledge is *not* qualitatively different from learning in any other sphere of activity. As Einstein suggested, science is simply a refinement of everyday thinking. And the construction of *other* scientists is no different, in principle, to the construction of *other* colleagues in a Japanese 'company as family' workplace organisation or, for that matter, the construction of any *other* 'other'—although the extent to which the *other* appears to be aligned with your sensemaking, and the extent to which each party's thoughts and actions are shaped by similar force-fields of power, might vary considerably.

Radical constructivism can accommodate the observer's capacity to see what *other* people call a rainbow, or appreciate a scientific explanation of what *other* scientists call a scientific explanation of a rock's composition, without getting bogged down in what is ontologically 'real'. Converting the personal perception of a rainbow—tacit knowledge—into a tangible commodity—explicit knowledge—that could be sent wherever it was needed, day or night, takes us into difficult territory. What colour would such a rainbow be in the dark? Radical constructivism tries to address the intersubjective viability of knowing, learning and communicating without leaving us at the mercy of nihilists and dangerous heretics. But, could the same be said for tacit–explicit knowledge-conversion?

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