

This is a section of [doi:10.7551/mitpress/14908.001.0001](https://doi.org/10.7551/mitpress/14908.001.0001)

Principles of Knowledge Auditing

Foundations for Knowledge Management Implementation

By: Patrick Lambe

Citation:

Principles of Knowledge Auditing: Foundations for Knowledge Management Implementation

By: Patrick Lambe

DOI: 10.7551/mitpress/14908.001.0001

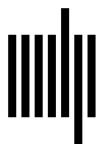
ISBN (electronic): 9780262373166

Publisher: The MIT Press

Published: 2023

OA Funding Provided By:

OA Funding from MIT Press Direct to Open



The MIT Press

17 Unhelpful Dualisms: The Tacit-Explicit Dualism

All this intellectualist legend must be rejected, not merely because it tells psychological myths but because the myths are not of the right type to account for the facts which they are invented to explain.

—Ryle (1946, p. 8)

Now we need to turn our hand to the other problematic dualism in describing knowledge types, that between *tacit* and *explicit knowledge*. This dualism has a complicated history and is not without its passionate advocates and accompanying politics. So it needs to be picked apart quite carefully.

Nonaka's Sleight of Hand: The Tacit-Explicit Dualism

The tacit-explicit distinction was of course popularized by Nonaka in his famous 1991 *Harvard Business Review* article "The Knowledge-Creating Company," followed up by his collaboration with Hirotaka Takeuchi in the 1995 book of the same title. Nonaka claimed he drew the distinction from the philosopher Michael Polanyi (1966), but there are several problems with the way that Nonaka appropriated (and distorted) Polanyi's concept of tacit knowledge. Here is the book version of Nonaka's distinction:

As for the epistemological dimension, we draw on Michael Polanyi's (1966) distinction between *tacit knowledge* and *explicit knowledge*. Tacit knowledge is personal, context-specific, and therefore hard to formalize and communicate. Explicit or "codified" knowledge, on the other hand, refers to knowledge that is transmittable in formal, systematic language. (Nonaka & Takeuchi, 1995, p. 60)

This is not an accurate characterization of Polanyi. For Polanyi, tacit knowledge was not "hard" to formalize and communicate—it was *impossible* to formalize and communicate successfully. The act of formalizing and communicating, according to Polanyi,

actually destroys tacit knowledge as tacit knowledge. As Polanyi (1966) put it: “An unbridled lucidity can destroy our understanding of complex matters” (p. 18).

Polanyi uses the example of the piano player who, by striving to become conscious of the movements of his fingers, becomes temporarily paralyzed. His knowledge sits in his body, not in his head. I have another example: a very competitive friend of mine, a psychologist by profession, was trying to figure out how to beat his regular tennis partner. One day he commented, “That’s a great serve you have there—show me how do you do that.” His buddy’s serve collapsed for the rest of the game, as my astute friend had calculated.

Consciousness and explicitness is the enemy of tacitness. As the sociologist of science Harry Collins (1993) said, “we are not very good at doing certain things when we think about them” (p. 109).

The essence of tacit knowledge is that it is open and indeterminate—meaning it can have multiple diverse outcomes. Tacit knowledge is directed outward at its productive outcomes and *not* inward at its own performance or upon its own construction as propositional knowledge (Nelson & Winter, 1982, p. 76 n2). It is fundamentally self-aware, or as Karl Wiig (1993, p. 134) put it, fully “automatic.”

Now Polanyi did not disagree that tacit and explicit knowledge can interact. He was clear that they work in concert with each other. It is simply that they operate in fundamentally different ways. He acknowledged that knowledge from analysis and explication (such as the engineer’s understanding of the workings of a car) can be richer and more powerful than just tacit knowledge in the same area of practice (how to drive a car). He agreed that particulars of tacit knowledge that had been observed and reflected on to construct explicit knowledge could be reinteriorized through practice into a newly tacit form, but he held that this would constitute novel tacit knowledge. The original tacit knowledge would be overwritten. We cannot roll ourselves back to prior states of tacit knowledge.

Most damaging for the Nonaka doctrine, Polanyi (1966) stated very clearly that the tacit and explicit forms of knowledge were not interchangeable. Tacit knowledge cannot be exchanged for explicit knowledge (p. 20). A more accurate representation of the relationship between the two types would be this formulation (Tsoukas, 2005, p. 158):

- (a) that explicit knowledge can be constructed
- (a) by attending to the particulars of a practice
- (c) that is produced out of tacit knowledge.

This was inconvenient for Nonaka because the central premise of his work, and the central premise of his SECI model (socialization, externalization, combination, internalization)

rested on “conversions” through this cycle of stages, from knowledge in a purely tacit form to explicit form. He knew he was stretching Polanyi’s distinction, and he glossed it over with the claim that he was being more “practical” than the philosopher.

But philosophers’ distinctions are hard-won—they matter. And they are hard to dismiss. To bolster his case, Nonaka borrowed from cognitive psychologist John Anderson’s work on artificial reasoning systems, positing the ability to reduce tacit knowledge to explicable rules—without, however, acknowledging Anderson’s cautions about the uncertainties surrounding what was just a theoretical construct and unproven in practice (cf. Anderson, 1976, pp. 80–81).

Nonaka had an entirely respectable goal; that of figuring out how to render tacit knowledge explicable and transferable, and how to use explicit knowledge to gain tacit knowledge. However, he skated over a critical distinction as if it did not exist and produced an overly simplistic and dualistic explicit-tacit-explicit conversion paradigm that simply does not hold up to detailed scrutiny in practice, and has in recent years come under increasing criticism (Tsoukas, 2005, p. 158; Gurlay, 2006).

Nonaka’s anchor story for the conversion, or “capture,” of tacit knowledge was about how the Matsushita Electric Company observed a master baker at work in order to convert his knowledge into the specifications of a new bread-making machine. It follows Nonaka’s cycle beautifully, from socialization of the master baker’s tacit skill (observation) to externalization (identifying the “twist” in the kneading process), combination (with the other machine-related knowledge), and internalization (into the machine-maker’s tacit knowledge base).

But this is conceptually misleading. Internalization into one’s tacit knowledge base from explicitized forms of somebody else’s expert knowledge does not necessarily make you an expert. As Harry Collins (1997) points out, “lack of self-consciousness is not a condition of expertise for inexpert actions may be un-self consciously performed” (p. 153). A novice who has internalized the explicit rules and works on habit, but is an inexpert performer, is still a novice.

The use of the anchor story was powerful from a communications perspective, but it erroneously implied continuous movement of the same knowledge from one stage of the SECI cycle to the next. It also tended to gloss over and homogenize the variety of forms of tacit knowledge. Consider the following:

- The nurse in a neonatal intensive care unit who is worried in an indeterminate way about how a premature baby “looks” and therefore checks in more frequently
- The fire chief who makes a split-second decision, based on intuition, to call her crew out of a burning building moments before it collapses

- The expert chicken sexer who can determine the gender of a day-old chick before sexual characteristics have emerged
- The restaurant chef who organizes and orchestrates her kitchen to manage the flow of different meal orders
- The restaurant waiter who maintains a situational awareness and memory of orders and sequences of dishes as he navigates the restaurant space with economy while managing interruptions
- The project engineer in an oil rig construction company who is planning the refurbishment of a dry dock, an event that takes place every couple of decades
- The negotiator who knows exactly when to make an offer or a concession in a negotiation, to get maximum benefit
- The lawyer who is uncomfortable about the way a proposed contract is framed and decides to do more due diligence research to try to pin down his intuition that something is wrong
- The leader whom employees consistently trust and follow in a crisis
- The colleague who can defuse a tense situation in a meeting and move it toward resolution with a few well-chosen words

These different people rely on a wide variety of forms and “bundles” of tacit knowledge, including embodied skills, experiential knowledge, technical knowledge, perceptual skills, social skills, and cognitive skills. If we wished to replicate, transfer, or build the forms of knowledge these people display, we would need to use a very wide variety of methods. Some of them could be assisted by creating explicit knowledge aids. Many of them could not. The “conversion” metaphor is too crude, and the simplistic distinction, between explicit and tacit, results in a homogenized view of “tacit” knowledge that does not respect its complexity.

As a high-level sensemaking framework for thinking about how to support knowledge transfer in organizations, Nonaka’s SECI model has some utility (Lis, 2014). But as a framework for auditing and managing knowledge types in organizations, it is next to useless. We already saw its effects in knowledge mapping in the oil company case study in chapter 15—it biases interpretation and action toward the more observable knowledge forms—that is, explicit knowledge resources.

Another complication, not reflected in this dualism, is that most of the knowledge used in organizations simply does not exist in either fully explicit or fully tacit states. As Botha et al. (2008) point out, “A practical view of knowledge is that tacit and explicit knowledge are not absolute opposites, but that they form a spectrum” (p. 13).

In other words, in any knowledge-driven performance there are differing degrees of tacitness and explicitness at play, and in knowledge management (KM) we need to know how those different combinations play out (Kogut & Zander, 1993; Leonard & Sensiper, 1998, p. 113). Explicit knowledge resources require some level of tacit knowledge to be actioned. Any tacit knowledge has the capacity to be described and explicated to a degree, giving rise to a variety of knowledge forms. And the literature of knowledge management, as we shall see shortly, is replete with nondualistic typologies of knowledge with intermediate forms between tacit and explicit. However, the field of knowledge management practice has tended to lock on to the simplistic dualism between tacit and explicit with concomitant negative effects, as we saw in our oil and gas company case study in chapter 15.

To be fair to Nonaka, he did try to differentiate between different ways that tacit knowledge manifests. He divided tacit knowledge into cognitive elements (mental models such as schemata, beliefs, and paradigms) and technical elements (concrete know-how, crafts, and skills; Nonaka & Takeuchi, 1995, p. 60).

Notice, however, that both subdivisions favor his thesis of tacit knowledge explicability. They also recall a much older knowledge typology (of which Nonaka was aware) first proposed by the Oxford philosopher and military intelligence officer Gilbert Ryle in 1946—the distinction between *know-that* (which became labeled declarative knowledge in the cognitive psychology literature and can serve as a proxy for the term *explicit knowledge*) and *know-how* (which became labeled procedural knowledge and often serves as a proxy for the term *tacit knowledge*; Ryle, 1946). Again, Nonaka does not acknowledge Ryle's caveat, like Polanyi's, that *know-how* cannot be defined in terms of *know-that* (Ryle, 1946, p. 5). One is not convertible to the other.

Factual, explicit know-that does not of itself produce tacit know-how, and know-how can exist without prior know-that. "A silly pupil may know by heart a great number of logicians' formulae without being good at arguing. The sharp pupil may argue well who has never heard of formal logic." Ryle (1946) continues in what would surely have been a sharp jab at Nonaka if Ryle had lived long enough to read him—or for that matter, in an even sharper jab at the cognitive psychologists who later adopted his declarative and procedural knowledge distinction and tried to make the one reducible to the other:

There is a not unfashionable shuffle which tries to circumvent these considerations by saying that the intelligent reasoner who has not been taught logic knows the logicians' formulae "implicitly" but not "explicitly"; or that the ordinary virtuous person has "implicit" but not "explicit" knowledge of the rules of right conduct; the skilful but untheoretical chess-player "implicitly" acknowledges a lot of strategic and tactical maxims, though he never formulates

them and might not recognize them if they were imparted to him by some Clausewitz of the game. This shuffle assumes that knowledge-how must be reducible to knowledge-that, while conceding that no operations of acknowledging-that need be actually found occurring. It fails to explain how, even if such acknowledgements did occur, their maker might still be a fool in his performance.

All this intellectualist legend must be rejected, not merely because it tells psychological myths but because the myths are not of the right type to account for the facts which they are invented to explain. However many strata of knowledge that are postulated, the same crux always recurs that a fool might have all that knowledge without knowing how to perform, and a sensible or cunning person might know how to perform who had not been introduced to those postulated facts; that is, there still remains the same gulf, as wide as ever, between having the postulated knowledge of those facts and knowing how to use or apply it; between acknowledging principles in thought and intelligently applying them in action. (pp. 7–8)

Know-how is manifested in action; know-that is manifested in words. Propositional thinking and speaking is an *adjunct* of action, not a *conversion* of the knowledge-in-action: “the tacit co-operates with the explicit, the personal with the formal” (Polanyi, 1958, p. 87).

The different knowledge types engage different human capabilities, and working effectively with the different knowledge types requires a faculty of agility, an ability to switch between tacit and explicit modes of working while solving real-world problems (Baumard, 1999, p. 227). This is a more complex operation than any dualistic model can handle. For example, even the know-how and know-that distinction ignores perceptual skills, which certainly are constitutive of knowledge but fall in neither category (G. Klein, personal communication, September 1, 2021).

Nonaka’s sleight of hand (or what Ryle described as a “fashionable shuffle”) fails to hold up, as do several of his other conceptual borrowings (Crane, 2016, p. 70–73). Haridimos Tsoukas (2005) gets to the nub of the fallacy of tacit-explicit conversion when he says that

... every practice establishes a set of what MacIntyre calls “internal goods”; namely, goods that cannot be achieved in any other way but by *participating* in the practice itself. For example, the particular analytical skills and strategic imagination that are associated with playing chess, the kind of satisfaction derived from caring for patients, or the thrill that comes from exploring new avenues of scientific research cannot be achieved in any other way than by respectively *playing* chess, *nursing* patients, and *researching* in a particular field. (p. 81)

The consequence of Nonaka’s fundamental misprision is profound, not less so because of its influence on subsequent KM practice. As Dave Snowden (2006a) has frequently said, “To my mind in the hands of consultants and IT vendors it has become the model that launched a thousand failed knowledge management initiatives” (cf. Grant & Qureshi, 2006).

Bad typologies produce poor and inconsistent results. And typologies can be bad, not simply by containing the wrong categories but also by inadequately reflecting the complexity of the phenomena they are attempting to describe.

The superficially convincing case studies that Nonaka presented in that original *Harvard Business Review* article, and in the subsequent book with Takeuchi, do not stand up to the scrutiny of a manager who needs to understand what was going on in detail in the so-called “conversion” processes between tacit and explicit knowledge in order to be able to repeat the process elsewhere.

As Stephen Gourlay (2006) has convincingly shown, the evidence for Nonaka’s claims evaporates under scrutiny. There are multiple possible pathways other than *knowledge conversion* for the successful outcomes in Nonaka’s case studies, and these possible pathways were not accounted for. The supposed knowledge conversions are reduced, in Ryle’s (1949) somewhat acidic phrase, to “occult episodes” incapable of further analysis (p. 25). The typology just does not convince in practice. It does not represent or explain phenomena in a way that supports understanding or the design of helpful interventions.

We did not have logical coherence as one of our criteria for the utility of a typology in an audit. If we had, Nonaka’s distinction would have failed at the first test. But Nonaka’s binary distinction between tacit and explicit with two (explicable) subdivisions for tacit knowledge also fails our tests of observability and naturalism, as the examples from Polanyi, Ryle, and Tsoukas illustrate. On observability, the dualism biases toward the explicit, and on naturalism, it does not adequately and transparently describe how humans work with knowledge in practice. And a binary typology just does not seem to do justice to the complexity and variety of knowledge use in organizations. It is insufficiently granular and comprehensive.

An Intermediate Knowledge Type: Implicit Knowledge

Worries about the binary nature of the tacit-explicit distinction have led to several attempts to interpose an intermediate form of knowledge. Horvath (2000) proposed a tripartite division into explicit, embodied (tacit), and embedded knowledge. Although he does not attribute any sources for this typology, its elements very likely originated with the British sociologist of science Harry Collins (1993) and/or the organizational theorist Frank Blackler (1995). We will get to Collins’s and Blackler’s typologies in a while, but for the moment let us focus on the idea of “embedded” knowledge.

Embedded knowledge is elsewhere described as structural knowledge or implicit knowledge (Wiig, 1993; Leonard & Sensiper, 1998; Nickols, 2000; Botha et al., 2008;

Davies, 2015). As distinct from explicit knowledge that resides wholly outside of people, and tacit knowledge that sits inside people, we might think of it as the knowledge that floats “between” people in the conduct of work. It refers to knowledge that is embedded in products, services, and processes, that is socially and collectively held, and that is very likely not fully explicit (Brown & Duguid, 1998, p. 91; Dixon, 2000, p. 12; Gamble & Blackwell, 2001, p. 2). It can also be said to correspond to the notion of *structural capital* in typologies of intellectual capital (Edvinsson & Malone, 1997, p. 11).

Embedded, implicit, or structural knowledge, because it reflects the knowledge “between” people, clearly operates at both the functional level as well as at the organizational level. As such, in principle it should have considerable importance and utility for function-oriented knowledge auditing.

Of the three labels, *implicit knowledge* probably has the greatest currency as an intermediate form of knowledge between explicit and tacit. While it is sometimes identified with tacit knowledge (Ryle, 1946; Spender, 1996a; Grant, 2007; Crane, 2016, p. 129–130), in many cases it means knowledge that is not yet articulated but is theoretically capable of being so (Nickols, 2000; Leonard et al., 2015).

This sense of knowledge that is capable of being made explicit has a long lineage of use. We can trace it from Saint Augustine’s concept of a human’s “implicit knowledge” of God, which is engaged by human memory (*memoria*), intelligence (*intelligentia*), and will (*voluntas*) and becomes articulated (made explicit) through the word (*verbum*; Taylor, 1989, p. 139). We can see the same thinking in the work of the philosopher, cognitive scientist, and prominent skeptic Daniel Dennett (1983).

In this tradition, implicit knowledge has a sense of latency and openness to multiple possibilities, in contrast to explicit knowledge, which has already been constrained by its form. An explicit artifact such as a manual or standard operating procedure is optimized for the purpose it was created for, and it takes work to adapt it to novel uses. While implicit knowledge does not have the unconsciousness of practice of Polanyi’s tacit knowledge, it partakes of some of the openness and indeterminacy of tacit knowledge (Dennett, 1983). Prior to explication, it has the potential to emerge in multiple forms and have diverse outputs and outcomes.

Where we use the term *implicit knowledge* in this book, we follow the Augustinian tradition of signifying embedded and not necessarily conscious knowledge that is capable of becoming articulated and made explicit in various forms. For clarity’s sake we do *not* take it as a synonym for tacit knowledge that cannot be explicated. Others do so, and in so doing they play into the simplistic post-Nonaka notion that tacit/implicit knowledge can be captured and efficiently transferred through codification (cf. Lee et al., 2021, chap. 4). In our case we are using the term as a typological device to break

down the binary dualism of tacit-explicit and to help us identify intermediate forms between extreme tacitness and extreme explicitness. We are starting to think in terms of a continuum of knowledge types.

This interposition of an intermediate form between tacit and explicit is a necessary starting point that will help us identify a more differentiated and useful typology of knowledge forms. In the following chapters, we will use the disruptions to the two unhelpful dualisms we identified (personal-team-organizational knowledge; explicit-implicit-tacit knowledge) to frame a more meaningful and useful spectrum of knowledge types for knowledge-auditing purposes.

* * *

Summary

In this chapter we broke apart the second simplistic distinction between tacit and explicit knowledge. Here is a summary of the main points:

1. We need to understand the tacit-explicit knowledge distinction as representing a continuum, not a dualism. Knowledge types express different degrees of tacitness and explicitness.
2. The notion of implicit knowledge forms a useful bridging category between the two extremes of tacit and explicit knowledge and can be used to develop a more differentiated typology of knowledge forms.
3. The tacit-explicit distinction represents a misleading conceptual distinction and does not satisfy our tests of observability and being naturalistic.

© 2023 Massachusetts Institute of Technology

This work is subject to a Creative Commons CC-BY-NC-ND license.
Subject to such license, all rights are reserved.



The MIT Press would like to thank the anonymous peer reviewers who provided comments on drafts of this book. The generous work of academic experts is essential for establishing the authority and quality of our publications. We acknowledge with gratitude the contributions of these otherwise uncredited readers.

This book was set in Stone Serif and Stone Sans by Westchester Publishing Services.

Library of Congress Cataloging-in-Publication Data

Names: Lambe, Patrick, 1960– author.

Title: Principles of knowledge auditing : foundations for knowledge management implementation / Patrick Lambe.

Description: Cambridge, Massachusetts : The MIT Press, [2023] | Includes bibliographical references and index.

Identifiers: LCCN 2022015397 (print) | LCCN 2022015398 (ebook) | ISBN 9780262545037 (paperback) | ISBN 9780262373159 (epub) | ISBN 9780262373166 (pdf)

Subjects: LCSH: Knowledge management. | Organizational learning. | Organizational change.

Classification: LCC HD30.2 .L362 2022 (print) | LCC HD30.2 (ebook) | DDC 658.4/038—dc23/eng/20220718

LC record available at <https://lcn.loc.gov/2022015397>

LC ebook record available at <https://lcn.loc.gov/2022015398>