

2.0 - A 'PROBLEMATIC' FOR KNOWLEDGE

Why are Knowledge Management (KM) theorists unable to agree what knowledge is? Mary Midgley's (1989) description (in the case of English-speaking philosophy) of the pitfalls of plundering ideas from multiple fields (like Barthes'¹ "tissue of quotations drawn from the innumerable centres of culture") might equally well refer to KM:-

"This willingness to make use of past as well as present insights was not just an effect of nostalgia and reluctance to move forward. It was a reasonable attempt to accumulate what had been achieved instead of throwing it away. But the resulting accumulation was unluckily much harder to handle than it might have seemed. Different ways of thinking are not all made out of standard parts, prefabricated units, designed to fit together. They differ in structure. In order to weld them together, the white heat of a considerable new insight is needed, and this white heat is rare. What usually happens instead is that bits are put together into a somewhat rough-and-ready arrangement, which answers some current needs but cannot command complete conviction or serve as a firm base for new developments." (p.178)

This chapter builds up an argument that KM was constructed from both *Capital-based* accounts of knowledge (based on *ownership of knowledge*) and *Sociological* accounts (based on *knowledge-using behaviours*), but where disciplinary constraints make each basis unable to account for what knowledge actually is. As Midgley describes, a key problem of 'accumulation' (i.e. of knowledge-based capital) is that accumulated knowledges may prove incompatible, and so need 'white-hot' insight to weld together. Ironically, it would appear that KM has failed to manage its own (theoretical) knowledge.

2.1

LITERATURE REVIEW - INTANGIBLE CAPITALS

Accountants have grown increasingly comfortable with the idea of accounting for

¹ **Barthes, Roland** (1977) "The Death of The Author", in "Roland Barthes. Image, Music, Text." New York: Hill & Wang.

intangible assets (such as brands or goodwill) in balance sheets: Perrier (1996)² noted that, through the 1980s, the proportion of intangibles in the accounts of companies being taken over increased sharply from 20% to 70%.

But is this really a **prudent** use of the word ‘asset’? To call anything an asset, contemporary standards (e.g. FASB, 1985, para. 25; IASC, 1989, para. 49; ASCPA and ICAA, 1995; all quoted in Thompson (1999)³) present

“a quintuple hurdle of

- 1. Future economic benefits.*
- 2. Probability that the future benefits will eventuate.*
- 3. Control by the entity.*
- 4. Result of past transactions or events.*
- 5. Value that can be measured reliably in financial terms.”*

Does goodwill satisfy all these conditions? It seems less than clear-cut. For example, the value of brands can prove unexpectedly unreliable (like Ratners, or Monsanto); and, to the degree that brands exist as social mental constructs external to the company, they also violate accounting practice’s “test of controllability” (Bryer (1995)⁴, p.289).

Furthermore, one might reasonably conclude that nearly all ‘intangible assets’ fail the quintuple test in one way or another: how many R&D projects can “reliably” measure their future value? How much “control” do entities have over complex collaborative knowledge work? How can all the uncertainties of innovation, development, branding, marketing and sales (all knowledge-centred activities) be reduced to “probability”?

Though such ‘intangible assets’ do arise as a result of ‘knowledge investments’ (*the conversion of resources into knowledge to achieve a desirable [if often indirect] outcome*), I assert that they should properly be referred to as **intangible capitals** -

² **Perrier, R.** (1996), "How brands can boost your balance sheet", Corporate Finance, No. 144, pp. 35-36. Quoted in Thompson (1999).

³ **Thompson, George D.** (1999) “Cultural capital and accounting”, Accounting, Auditing & Accountability Journal, Bradford. An excellent review of the relationship between cultural capital and accounting.

⁴ **Bryer, R.A.** (1995), "A political economy of SSAP 22: accounting for goodwill", British Accounting Review, Vol. 27, pp. 283-310. Again, quoted in Thompson (1999).

knowledge invested in by a company (but with unknowable future value). These intangible capitals take many distinct forms, both under a company's direct control (**internal** to the company, in what one might call its "control zone"), and also out of its control (**external** to the company, in its "influence zone"), held by 'outsiders'. "Goodwill" is sufficiently amorphous a term that it could refer to either zone.

However, as this view takes in nearly all non-manufacturing business activities, we must limit the scope: here, I'm particularly concerned with understanding the **modern capital literatures** (the yellow boxes) and their **supporting disciplines** (the light blue boxes).

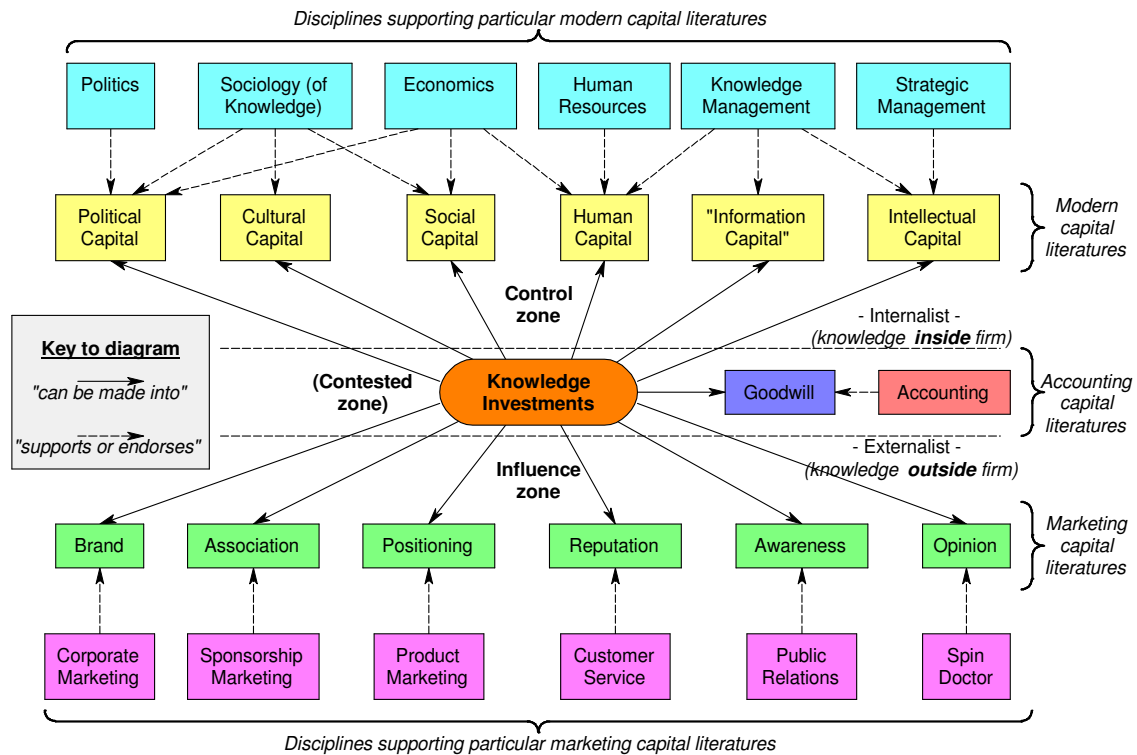


Figure 2a: the interface between intangible capitals and Academe⁵

This diagram tries to show how most of the modern capital literatures (which the next few sections examine) are the subject of ongoing battles between (for example) Sociology, Economics, and Knowledge Management. When trying to grasp all these

⁵ Note the use of "Information Capital" in Knowledge Management: there, many IT-centric practitioners see the difference between 'knowledge' and 'information' as one of value (rather than of category).

capitals, the observation that most are in an interdisciplinary no-man's-land might help explain their multiple (and conflicting) layers of meanings often in evidence.

Internally-owned business knowledge is that thing which the literatures examined in the following sections share: consequently, many writers (especially in the Intellectual Capital literature) have explicitly tried to understand the structure of knowledge by understanding the structure of intangible capital.

2.2

LITERATURE REVIEW - MODERN FORMS OF CAPITAL

Karl Marx would have likely been certain that all these modern forms of capital are “fictitious capital”,⁶ (according to marxists.org) “an *invention* which is absolutely necessary for the growth of real capital, [as] it constitutes the symbol of confidence in the future. It is a necessary but costly fiction, and sooner or later it crashes to earth.”⁷

All the same, within the intangible capitals depicted in the preceding section, one can glimpse the outline of an emerging *research programme*, whose members seek, by ‘following the money’, to understand *where within organisations* knowledge investments **go to**. This general programme seems to have been initiated by Gary Becker’s Human Capital (1960-1970s), continuing in Pierre Bourdieu’s work on Cultural Capital (1980s), and more recently manifesting itself in the Intellectual Capital and Knowledge Management literatures (1990s), and in the Social Capital and Political Capital literatures.

Human Capital

Though Human Capital, according to Thompson (1999), “evolved in the context of mainstream economic thought in a direct line from Adam Smith (George, 1911, p. 26)”,⁸

⁶ **Marx, Karl** (1999) [1894] “Capital” Volume III (as completed by Engels) - particularly Part V. Available online at <http://www.marxists.org/archive/marx/works/1894-c3/>

⁷ <http://www.marxists.org/glossary/terms/f/i.htm>

⁸ **George, H.** (1911), *Progress and Poverty*. J.M. Dent and Sons, London.

it was Gary Becker (1962)⁹ who influentially framed it as the source of *external economic effects*: he saw an individual's accumulated skills and knowledge as related to wage level and productivity, and hence as having economic consequences. For Becker, Human Capital has "spillover" effects which economic models - especially those of national economies - need to include in order to better match observed (economic) behaviour.

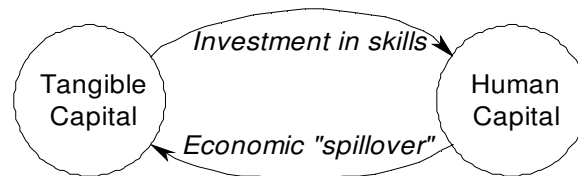


Figure 2b: Becker's Human Resource Accounting (HRA) model of human capital

In summary, Becker's key insights were (a) that *capital* could change form (from *tangible capital* to *human capital*, and later back to *tangible capital* again), (b) that capital *crosses scales* (from individuals, to companies, and even to economies), and (c) that non-economic forms of capital can (and often do) *indirectly* lead to economic results. Though rarely acknowledged as such, these three key ideas came to form the conceptual backbone of the modern capital research programme described here.

Cultural Capital

Gouldner (1979)¹⁰ wrote that "cultural capitalists" (the emerging "technical intelligentsia" class) were starting to use their monopoly over *access to knowledge* to accumulate "cultural capital" (ownership of societally-important knowledge). For Gouldner, cultural capital therefore denoted a kind of 'knowledge power' being leveraged by an emerging technocrat class to produce *political power* for itself, and (almost incidentally) "to generate a larger morality" (p.269). One might point to research-based tech companies spinning off from universities as an example of his ideas. Overall, his account is typical

⁹ Becker, G.S. (1962), Investment in human capital: a theoretical analysis, *JPE*

¹⁰ Gouldner, A.W. (1979), The Future of Intellectuals and the Rise of the New Class

of many uses of the phrase “cultural capital”, in that it sees such knowledge as innately powerful, and that benefits arise from it from the owner’s implicit increase in power.

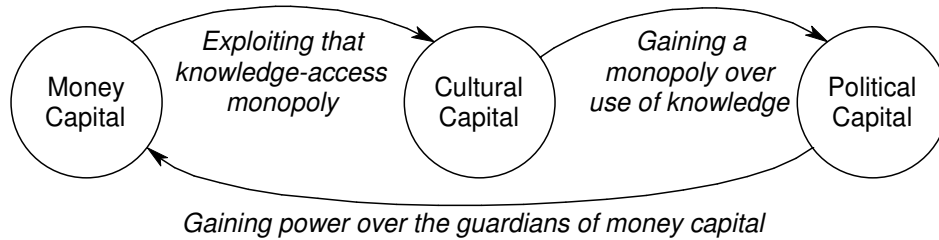


Figure 2c: Gouldner's (1979) (implicit) model of capital

However, the notion arguably reached its zenith with Pierre Bourdieu (1990),¹¹ who proposed that an individual’s investment (say, in education) is made with the intent to economically benefit from it in the future (though indirectly). Bourdieu proposed that capital can be thought of as having three dimensions - **Economic Capital** (‘traditional’ tangible capital, such as money or possessions), **Cultural Capital** (investment in knowledge/skills), and **Social Capital** (investment in relationships) - or, more colloquially, “*What you own*”, “*What you know*”, and “*Who you know*”.

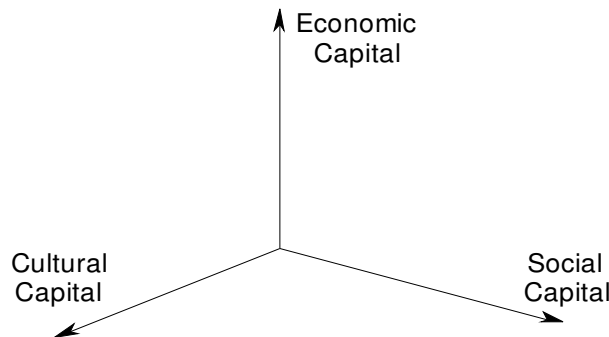


Figure 2d: Bourdieu's (1990) three dimensions of capital

Yet it is also important to note that Bourdieu, because of his sociological angle, was less concerned with explaining *capital* than with explaining *behaviour*, and so was reaching

¹¹ **Bourdieu, P.** (1990), *In Other Words, Essays Towards a Reflexive Sociology*

towards what he called “an economy of practices”.

In his broad review of cultural capital in accounting, Thompson (1999)¹² points out that “conventional financial reporting is partial, privileging physical and financial capital over cultural capital, and hence providing an incomplete portrayal of the enterprise. Authority and accountability in enterprises derives not only from physical and financial capital but also from cultural capital.” He therefore suggests that “a form of human resource accounting based on cultural capital is needed to reflect the plural authority and accountability structures of organizations.” But should reflecting “authority and accountability” fall completely within accountancy’s remit? I suspect that this may be overlapping (the sociological idea of) ‘account’ with (accountancy) ‘accounting’.

Social Capital

Robert Putnam’s (2000) “Bowling Alone”¹³ quotes Lyda Judson Hanifan (1916) as describing social capital as “those tangible substances [that] count for most in the daily lives of people: namely good will, fellowship, sympathy, and social intercourse among the individuals and families who make up a social unit.” James Farr (2004)¹⁴ finds yet earlier uses of the term in Dewey (1900)¹⁵, Marshall (1890), and even in Marx (1867)¹⁶. Modern researchers also include concepts like *identity, honour, belonging, trust, reciprocity, and mutuality*: some also include (perhaps more negative) forms like *exclusion, coercion, and obligation*.

Much of the modern Social Capital literature stems from Jane Jacobs (1961),¹⁷ though

¹² First mentioned in Section 2.1 above.

¹³ **Putnam, Robert D.** (2000) “*Bowling Alone: The Collapse and Revival of American Community*”. New York: Simon & Schuster.

¹⁴ **Farr, James** (2004) “Social Capital: A Conceptual History”. *Political Theory* 32(1), Feb 2004. Sage Publications. pp. 6-33.

¹⁵ **Dewey, John** (1900) “The Psychology of the Elementary Curriculum,” *The Elementary School Record*. Chicago: University of Chicago Press.

¹⁶ **Marx, Karl** (1996) [1867] “Instructions for the Delegates of the Provisional General Council: The Different Questions”. His phrase “gesellschaftliche Kapital” would now translate as “social capital”.

¹⁷ **Jacobs, Jane** (1961) “*Death and Life of Great American Cities*”. New York: Vintage.

James Coleman's (1988)¹⁸ definition (that Social Capital is *relationships of trust embedded in social networks*) has proved highly influential in helping to formalise the field. In his study of parochial schools, Coleman demonstrated that *human capital* often arose from prior *social capital*: many papers on Social Capital similarly emphasise the economics of the relationship between Social Capital and poverty.

All the same, even though many economists agree that Social Capital *should* form part of the economics literature, there is no consensus on *how* to treat it. Methodologically, Fine (2001)¹⁹ points out that while economists historically used Social Capital as a means to colonise the social sciences, more recent neoclassical economists tend to use it as an apologetic for tolerating poverty within the developed world.²⁰

What is one to make of Social Capital? In some ways, it has (since Loury (1977)²¹) been used by sociologists in their *micro*-analyses of daily behaviour and individual's lives – yet in other ways, economists remain fiercely protective of it, and claim to see its influence reflected in their *macro*-economic data-sets. It is certainly an “elastic term”²²: but perhaps the safest interpretation is that it is a *contested area* encompassing both the (micro-economic) *social* and the (macro-economic) *societal*.

Political Capital

Though little-discussed, Political Capital can be thought of the mechanism of patronage, negotiation, persuasion and influence, *enabling* other assets to become better realised. For

¹⁸ **Coleman, James S.** (1988) “*Social Capital in the Creation of Human Capital*”. The American Journal of Sociology, 94: pp.95-120.

¹⁹ **Fine, Ben** (2001) “*Social Capital Versus Social Theory: Political Economy and Social Science at the Turn of the Millenium*”. London: Routledge.

²⁰ So, whereas a classical economist might say “*you've got no friends because you've got no money*”, a neoclassical economist might say “*you've got no money because you've got no friends*”.

²¹ **Loury, Glenn** (1977) “A Dynamic Theory of Racial Income Differences”. In: “Women, Minorities, and Employment Discrimination”, ed. Phyllis Wallace and Annette LaMond, pp.153-188. Lexington, MA: Heath. However, note that Loury's use of “social capital” is somewhat closer to “political capital”.

²² **Moore Lappe, Francis; Du Bois, Paul Martin** (1997) “Building Social Capital without Looking Backward”. National Civic Review 86(2). pp.119-128. Quoted in: **DeFilippis, James** (2001) “The Myth of Social Capital in Community Development”. Housing Policy Debate, 12(4).

Pari Baumann (2000),²³ political capital is “one of the key capital assets on which people draw to build their livelihoods.” (p.6) Booth & Richard (1998)²⁴ see it as a “gatekeeper asset, permitting or preventing the accumulation of other assets” (p.782). I also think that the symmetry between Social Capital and Political Capital suggests that the latter might be best defined as “relationships of *dis*trust embedded in social networks” - that is, that Political Capital represents investments made in order to make non-trust-based relationships practicable (like currency watermarking, or Health & Safety legislation).

Birner & Wittmer (2000)²⁵ usefully subdivide political capital into *instrumental political capital* (“the resources which actors can use to influence policy formation processes and realize outcomes in their interest”) and *structural political capital* (“variables of the political system” which condition how actors believe they can accumulate instrumental political capital). These two subtypes reflect two key perspectives implicit in political capital - on the one hand, that of *individual actors*, and on the other, that of the *state* (or similar power interests).

However, most authors seem to use *political capital* in the sense of Birner & Wittmer’s *instrumental political capital*. For example, Jean-Paul Lacoste (1999)²⁶ sees it as a subtype of social capital, and defines it as “empowerment”. Alexander Weinreb (2001)²⁷ defines it as “a subtype of social capital which is intended to measure access to political decision-makers.” For the poverty researchers Booth & Richard (1998), for associational

²³ **Baumann, Pari** (2000) “Sustainable livelihoods and political capital: Arguments and evidence from decentralisation and natural resource management in India” ODI Working Paper 136.

<http://www.odi.org.uk/publications/summw136.html>

²⁴ **Booth, John A.; Richard, Patricia B.** (1998) “Civil Society, Political Capital and Democratization in Central America”, *Journal of Politics*, Vol.60 (3), pp. 780-800.

²⁵ **Birner, Regina; Wittmer, Heidi** (2000) “Converting Social Capital into Political Capital, How do local communities gain political influence? A theoretical approach and empirical evidence from Thailand and Columbia.” Paper presented at the 8th Biennial Conference of the International Association for the Study of Common Property (IASCP), June 2000, Indiana.

²⁶ **Lacoste, Jean-Paul** (1999) <http://www.worldbank.org/poverty/scapital/sctalk/talk10.htm>

²⁷ **Weinreb, Alexander** (2001) “A State-Centered, Political Capital Approach to the Explanation of Demographic Differences: With Special Reference to Regional/Ethnic Inequality in Sub-Saharan Africa”. Paper presented at the General Conference of the International Union for the Scientific Study of Population (IUSSP), August 18-24, 2001, Bahia, Brazil. <http://www.src.uchicago.edu/prc/pdfs/weinre01.pdf>

activism to go beyond (essentially passive) conceptions of social capital, it should “*foster attitudes and behaviours that actually influence regimes in some way*”, (p.782) which they associate with political capital.

Overall, Political Capital rarely intersects with the other capital theories discussed here: indeed, business schools typically sidestep the whole topic of politics. However, given the *Realpolitik* of actual business practice, this is somewhat odd, and so one might reasonably question whether such a simplification is actually in students’ interests.

The numerous modern capital literatures are hugely fragmented and contested: unfortunately, discussion of “capital” often gives the impression of its being an all-too-malleable theoretical tool. Even so, the assertion that people or companies (or nations) *invest in skills, relationships, patronage and accreditation with a view to future returns* is extraordinarily hard to deny - and this is exactly the core pragmatic reasoning underlying these literatures.

2.3

LITERATURE REVIEW - INTELLECTUAL CAPITAL

For J.K.Galbraith (1969),²⁸ “Intellectual Capital” (IC) originally denoted not an abstract concept, but more a sense of what he called “intellectual action” - more like a *value-generating process*. But since the early 1990s, however, its generally accepted meaning (deriving from authors like Sveiby (1988)²⁹) has instead moved closer to a *notional repository for knowledge investments* (i.e. a fictitious warehouse where knowledge investments are stored). Theory aside, what IC practitioners actually seem to **do** is:

- (1) Suggest a (dogmatic) set of best practices to their (typically large, knowledge-based)

²⁸ In a letter to Michael Kalecki: quoted in **Feiwel, G.R.** (1975) “The Intellectual Capital of Michael Kalecki: A Study in Economic Theory and Policy”, The University of Tennessee, Knoxville, TN. Quotation originally tracked down by Tom Stewart (in Fortune Magazine).

²⁹ **Sveiby, Karl Erik; et al.** (1988) Den Nya Årsredovisningen (The New Annual Report). Stockholm: Affärsvärlden. Quoted in **Sveiby** (1997).

clients - such as Sveiby's (1997)³⁰ “*The best early indication of whether results are about to improve or deteriorate is customer satisfaction*” (p.182) - but expressed as particular metrics (such as Sveiby's “Satisfied Customers Index”) arranged in a set, which are called “knowledge dashboards”; and

- (2) Associate those metrics with parsimonious subcategories of intangible capital, arranged in a (plausible-looking) taxonomy, so that their suggestions seem grounded in theory (and hence are persuasive). For example, Sveiby sees knowledge investments as being made in a combination of “employee competence”, “internal structure” (*typically patents, concepts, models & systems*), and “external structure” (*relationships with customers & suppliers, as well as brands, reputation, image, etc*).

However, even if IC practitioners do generally share this paradigmatic approach, the capital terminologies, taxonomies and structures they use to express and back up their claims seem, well, *heterogeneous* at best. In fact, by the time of David Skyrme's (1998) broad review of IC ³¹, he was able to point to over 15 distinct models for intellectual capital (like Saint-Onge's (1996)³²) and venture capital (like Roos & Roos' (1997)³³). These differ not just terminologically, but also by the inter-categorical relationships, etc. How is one to choose between them?

More recently, Pike *et al* (2001) claim that “[h]appily, in the last two years or so there has been a steady convergence in categorisation and language onto a single model”. The model they suggest decomposes Intellectual Capital into *Human Capital*, *Organisational Capital*, and *Relational Capital* (exactly as Sveiby had done a decade earlier) - though with the strong *caveat* that their model “can only be seen as indicative of the components of intellectual capital.” (p.3)

In my view, IC's numerous taxonomies (and structures, groups, families, etc) are not

³⁰ **Sveiby, Karl Erik** (1997) *The New Organizational Wealth: Managing and Measuring Intangible Assets*

³¹ **Skyrme, D.** (Ed.), (1998), *Business Intelligence report: Measuring the value of knowledge*.

³² **Saint-Onge, Hubert**(1996) *Tacit knowledge: the key to the strategic alignment of intellectual capital*

³³ **Roos, G., Roos, J.** (1997), *Measuring your company's intellectual performance*

about understanding *knowledge*: rather, they are simply the *parsimonious rhetorical means* by which IC theorists support their best practices models. Their numerous caveats point to an underlying lack of theoretical confidence (and justification): and so I consider IC theories to be unpersuasive accounts of knowledge.

2.4

NONAKA & TAKEUCHI

Just about every theorist sees the modern capitals described above as (somehow) interrelated (after all, they are all ways in which investment is made in knowledge), but the (hierarchical and/or categoric) nature of that relationship continues to be strongly contested - and not just within the IC literature. For example, according to Light (2001)³⁴ “*Becker (1996)*³⁵ *wants to add social capital to human capital; Bates (1998)* [actually 1997?]³⁶ *wishes to recognize human capital but exclude social capital; Bowles (1999)*³⁷ *argues that social capital is not capital.*” (p.8) - and so forth.

The shared presumption is that, in order for these various kinds of knowledge to be considered as *intangible capital*, they have to be invested in and owned, so that future returns from that knowledge can benefit the owner - whether an individual, a company, a community, or a society. Though many theorists (particularly in the IC literature) write about the structure of intangible capital *as though* they were describing the structure of knowledge (and a number of knowledge framework authors, reviewed below, reflect this conceit), these literatures are not so much about *knowledge* as about the *locus of ownership of knowledge* - and about diffusive mechanisms like *trust, delegation, teaching, training and learning*.

I argue that perhaps the most important (and probably the most heavily-cited) text in this

³⁴ **Light, Ivan** (2001) “*Social Capital’s Unique Accessibility*”. Journal of the American Planning Association. <http://www.by-og-byg.dk/eura/workshops/papers/workshop6/light.pdf>

³⁵ **Becker, Gary S.** (1996) *Accounting for Tastes*. Cambridge: Harvard University.

³⁶ **Bates, Timothy** (1998) “*Race, Self-Employment, and Upward Mobility*”. Baltimore: Johns Hopkins University.

³⁷ **Bowles, Samuel** (1999) “*Social Capital and Community Governance*“. Focus, 20: pp.6-10

whole tradition is Nonaka & Takeuchi's (1995) "The Knowledge-Creating Company".³⁸ Their central theme is that knowledge is held in one of two modes: **tacit** (implicit, and hence constructed at the point of use³⁹) or **explicit** (codified in a more formal language, as a logical relationship between symbols). Yet despite their section on the history of philosophy, the *idea of knowledge* is far less important to them than the practicalities of diffusing it through an organisation. Their account also privileges *knowledge diffusion* over *knowledge creation* - curiously (given their title), they remain somewhat silent on the latter.⁴⁰

Their SECI model (p.72) builds on this tacit/explicit categorisation, and derives a 2x2 "business school" matrix, subcategorising knowledge not only by its current mode, but also in terms of its previous mode: this yields four diffusion processes [which they call Socialization, Externalization, Combination, and Internalization - hence "SECI"], and four subtypes of knowledge [Sympathized, Conceptual, Systemic, and Operational].

		Tacit knowledge	To	Explicit knowledge
From	Tacit knowledge	(<u>S</u> ocialization) Sympathized Knowledge		(<u>E</u> xternalization) Conceptual Knowledge
	Explicit knowledge	(<u>I</u> nternalization) Operational Knowledge		(<u>C</u> ombination) Systemic Knowledge

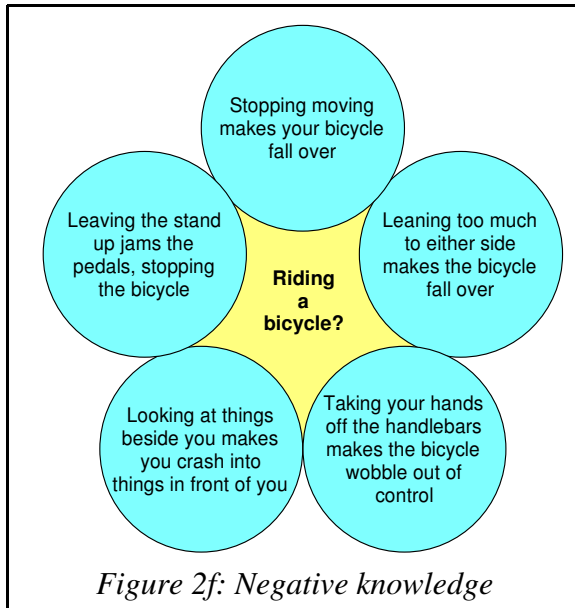
Figure 2e: Nonaka & Takeuchi's (1995) SECI model (p.72)

³⁸ **Nonaka, Ikujiro; Takeuchi, Hirotaka** (1995) "The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation". Oxford University Press, New York.

³⁹ Though note that Spender (1993, 1996) and many others have criticised tacit knowledge as a "portmanteau term, embracing many importantly different notions" [Spender (1998:243)]

⁴⁰ About as much as can be inferred is that their conception of 'knowledge creation' appears to revolve around unspecified reproductive acts performed by pairs of explicit knowledges. As Salman Rushdie asks "How does newness come into the world? How is it born? Of what fusions, translations, conjoinings is it made? How does it survive, extreme and dangerous as it is?" Satanic Verses, p.8

The many ambiguities and inconsistencies of Nonaka & Takeuchi's account have rightly attracted numerous detractors, particularly over what is/isn't "tacit": what I concentrate on here is whether we can understand tacit knowledge *beyond* its ownership dimension.



Tacit knowledge closely resembles "negative knowledge", commonly defined as '*knowing what doesn't work*'. A good (if possibly over-used) example is **riding a bicycle** - it seems that we accumulate a set of positive knowledges about *how to fall off* (basically, *how not to ride a bicycle*), and silently choose the best action to try to avoid all of them. This template matches many descriptions of craft skills ('*techne*').

By contrast, *positive knowledge* of how to ride a bicycle would involve such things as centre of gravity, balance, force and momentum, friction and acceleration, and spatial perception - clearly, it is easier just to spin the pedals and see what works for you.

I contend that this points to two quite distinct **internal** categories of knowledge, quite distinct from their (private/shared) ownership dimension: (1) (principle-based) positive knowledge, and (2) (exception-based) negative knowledge - and that Nonaka & Takeuchi's work assumes that there is a perfect correlation between knowledge's internal and external dimensions (i.e. positive \Leftrightarrow shared, and negative \Leftrightarrow private). But is this really true?

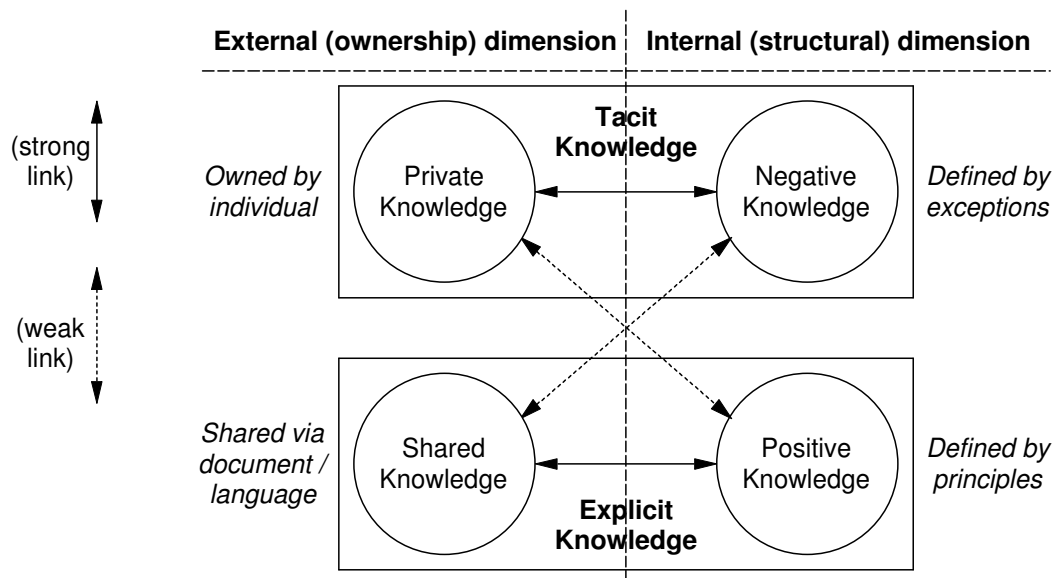


Figure 2g: Internal and external dimensions of knowledge

I strongly argue that, while **private/negative** knowledge and **shared/positive** knowledge match much of our daily business experience, **private/positive** knowledge and **shared/negative** knowledge are also common (though harder to articulate). For example, [for private/positive] someone may have a good physical way of positively tackling a problem, but not the means to access it other than through use: alternatively, [for shared/negative] “bug-lists” often explicitly describe ways to crash computer programmes (while the cause of the crash remains unresolved).

In these terms, then, it should now be clear that Nonaka & Takeuchi’s conception of knowledge actually has little to do with the internal structure of knowledge, and everything to do with the locus of ownership of knowledge - and thus the ambiguities inherent in the terms “tacit” and “explicit” serve mainly to blur the distinction between *ownership* and *structure*. Hence, ‘harvesting’ tacit knowledge (in the way that Frederick Taylor described) is much more about gradually **effecting the transfer of ownership** of knowledge from the workers on the shop floor to the company’s management than about changing the internal mode of that knowledge. Really, despite all the philosophers they cite, their theory is just as much about capital as any in the intellectual capital literature.

Though Nonaka & Takeuchi’s tacit/explicit distinction seems to refer both to the ownership and structure of knowledge, their work mainly addresses the former aspects. However, the new subdivision suggested here makes the (unstated) division between ownership and structure more apparent, and opens up the way for a broader application of these ideas (in the next section).

2.5

SUMMARY - KNOWLEDGE CAPITALS

Nonaka & Takeuchi’s typology has a great deal in common with the capital literatures, each of which typically focuses on one particular kind of owned knowledge. In fact, the new set of knowledge subtypes suggested above points to a coherent way of reconciling them all together. While it should be clear that **private/negative** knowledge relates to personal skills (and hence to **Human Capital**), and that **shared/positive** knowledge relates to investments in language (and hence to **Cultural Capital**), I think it can also be asserted that **private/positive** knowledge relates to understanding of rules (and hence to **Political Capital**) and that **shared/negative** knowledge relates to a shared understanding of what doesn’t work, enshrined in social taboos, etc (and hence to **Social Capital**, though this is the loosest match, perhaps because it is the most widely appropriated term).

	Private Knowledge <i>(Individual)</i>	Shared Knowledge <i>(Social)</i>
Positive Knowledge <i>(Rules)</i>	Political Capital	Cultural Capital
Negative Knowledge <i>(Inferences)</i>	Human Capital	Social Capital

Figure 2h: A 2x2 ‘Knowledge Capital’ matrix

It should be clear from this diagram, that as Nonaka & Takeuchi’s work assumes that knowledge is either tacit (private/negative) or explicit (shared/positive), the only types of capital their typology can comfortably represent are Human Capital and Cultural Capital.

This can be made more precise by including an extra dimension, based on Birner & Wittmer’s (2000) useful division between *instrumental capital* (the personal capital accumulated by an individual) and *structural capital* (the matching investment into infrastructure [similar to Nonaka & Konno’s (1998)⁴¹ concept of ‘Ba’]). This helps draw (for example) a micro/macro division between sociologists’ Social Capital (accumulated by an individual) and economists’ Social (‘Societal’) Capital (which crosses scale, but which can be thought of as measuring societal infrastructure more than the sociologists’).

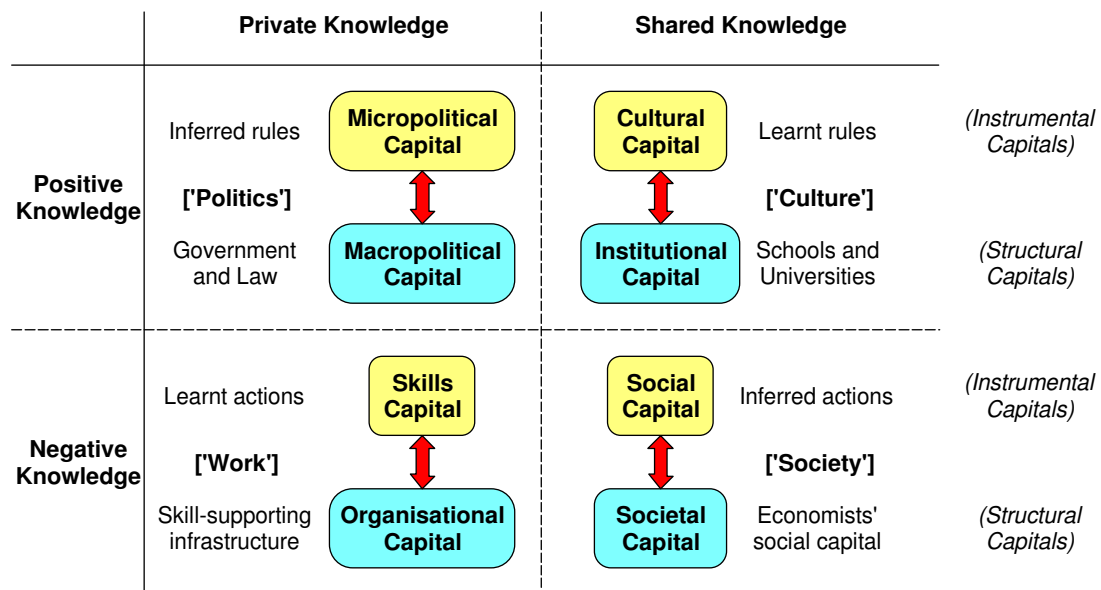


Figure 2i: A 2x2x2 ‘Knowledge Capital’ matrix

The whole point of this exercise is simply to demonstrate that the vast majority of modern

⁴¹ Nonaka, Ikujiro; Konno, Noboru (1998) “The Concept of ‘Ba’: Building Foundations for Knowledge Creation”, California Management Review, 40 (3) [1998]

theories of knowledge and capital are predicated on particular *ownership* worldviews localised to distinct fields of study, and are thus all **capitalist epistemologies** independently derived inside Academe's anxiously patrolled disciplinary boundaries.

I think it fair to conclude that though these capital literatures (and I include Nonaka & Takeuchi in this category) claim to reach out towards the structure of knowledge, they are all fatally hampered by the (incorrect) presumption that understanding knowledge's *external* (ownership) dimension would be sufficient to understand its *internal* (structural) dimension. In short, these accounts relate specifically to the **ownership and external diffusion** of knowledge, not to the **internal nature** of knowledge - even Nonaka & Takeuchi's account (which has arguably the greatest aspiration towards being a foundational account of knowledge) is limited by these same (capitalist) feet of clay.

However, this whole process has allowed us to look beyond mere notions of ownership to catch a glimpse of one internal dimension - the difference between positive (principled) knowledge and negative (eliminative) knowledge. We will explore this further in the next chapter: but first, we must examine the sociological aspects of Knowledge Management (KM) (which have long been in conflict with its capital aspects), to see the very different view of knowledge they bring to the table.

2.6

LITERATURE REVIEW - KNOWLEDGE MANAGEMENT

Since the relatively recent inception of KM, an ongoing debate has raged there over the underlying nature of knowledge – if you don't know what knowledge is, how can you manage it? Hedlund (1994)⁴² was not the last to have pointed out that 'Knowledge Management' was (and remains) not precisely defined. Proposed KM definitions of knowledge nearly all differ, both from each other as well as from other epistemologies

⁴² Hedlund, G. (1994). "A model of knowledge management in the N-form corporation" *Strategic Management Journal* 15. pp.73-90.

Furthermore, Snowden's (1997)⁴³ perspective (p.19) (essentially, that epistemology is not a productive exercise for KM, a view echoed by others like Davenport *et al* (1998)⁴⁴) can only have encouraged practitioners and theorists to steer clear of the whole area.

In practice, KM theorists have felt emboldened to use a wide variety of literatures as a 'smorgasbord' of potentially applicable ideas and concepts, rarely considering whether differences between them might later prove problematical. Though this kind of gung-ho appropriation is consistent with a multidisciplinary postmodernist approach, it also (when viewed from the outside) can seem somewhat intellectually lazy.

This breadth of influence has led many KM theorists to be ambivalent about the very nature of knowledge – that curious thing which the field claims to help manage. On the one hand, Information Technology (IT)-centric theorists see knowledge in terms of *storable information* (for example, a consulting company's library of past bids and research documents, which can [through IT investment] be audited, digitised, networked, and automated) and hence as a tangible, objective, explicit thing. On the other hand, sociology-centric theorists see knowledge in terms of a *diffuse culture and accumulated employee skills* (for example, viewing a company as a dense personnel network, which can potentially [through IT investment] be connected directly to customer needs).

These two diametric views of knowledge often amount to sharply-drawn battle-lines, over which the two armies of rival theorists fire their can[n]on. To try to reconcile these differences, KM has spawned a yet more specialised field (Knowledge Frameworks), which can be thought of as a kind of *non-philosophical epistemological research programme* - that is, a loosely collective enterprise trying to understand the *pragmatic roots of knowledge*, in order to be able better to manage it.

⁴³ **Snowden, D.** (1997) "A framework for creating a sustainable programme", in *Knowledge Management. A real business guide*, London: Caspian Publishing

⁴⁴ **Davenport, T.H.; De Long, D.W.; Beers, M.C.** (1998) "Successful knowledge management projects", *Sloan Management Review*, Winter, pp.43-57.

KM is a discipline that has grown strong through *appropriation* and *accretion*, but weak through *inconsistency* and *internal division*. The problem remains this: how can you manage knowledge if you don't know what it is? However, before we move on to the Knowledge Frameworks literature, we must review the Sociology of Knowledge literature, as this underpins many KM papers.

2.7

LITERATURE REVIEW - SOCIOLOGY OF KNOWLEDGE

The modern Sociology of Knowledge (“SoK”) tradition was initiated by Berger and Luckmann’s (1966) “The Social Construction of Reality”,⁴⁵ which grew out of the work of Scheler and Mannheim. Scheler’s ‘moderate’ conception of SoK aimed to “transcend the relativity of specific historically & socially located viewpoints” [p.19], and so viewed SoK as the study of how society selects the (external, pre-existing) ideas that define it.

Mannheim’s ‘radical’ idea of SoK, building on Marx, saw *ideology* as underlying *thought*, and proposed “the understanding that no human thought ... is immune to the ideological influences of its social context.” [p.21]⁴⁶ This stress on ideology was picked up by Theodor Geiger, who saw “ideology as socially distorted thought and maintained the possibility of overcoming ideology by careful adherence to scientific canons of procedure.” [p.24]. This same ‘Ideologiekritik’ was continued by Ernst Topitsch, “who has emphasised the ideological roots of various philosophical positions.” [p.24] But what is ‘ideology’? For Berger & Luckmann, “when a particular definition of reality comes to be attached to a concrete power interest, it may be called an ideology” [p.141] (though they do acknowledge that this is a narrow definition).⁴⁷

As far as *knowledge* goes, however, Berger & Luckmann think that “[t]o include

⁴⁵ **Berger, Peter L.; Luckmann, Thomas** (1966) “The Social Construction of Reality: A Treatise in the Sociology of Knowledge” Garden City, New York: Anchor Books. All [-]’s in this section refer to this.

⁴⁶ These themes were strongly picked up by the American sociologist Robert Merton, who (say Berger & Luckmann), saw Mannheim as “the sociologist of knowledge par excellence”. [p.23]

⁴⁷ Berger and Luckmann point to: **Lenk, Kurt (Hg.)** (1984) “Ideologie. Ideologiekritik und Wissenssoziologie.” Frankfurt am Main: Campus (though Terry Eagleton’s “Ideology” is more accessible).

epistemological questions concerning the validity of [all] sociological knowledge in the sociology of knowledge is somewhat like trying to push a bus in which one is riding. ... We therefore exclude from [SoK] the epistemological and methodological problems that bothered both of its major originators.” [pp.25-26]. By this simple rhetorical device (which seems to deny that their account could ever be reflexive), they bracketed epistemology from SoK, passing the buck for its study from sociology over to the social sciences – and thus founding the modern SoK literature on a *single rhetorical turn of phrase*.

Still, for Berger & Luckmann “ideologies generate solidarity” within groups and institutions [p.141], and they see multiple ideologies as the backbone of pluralism, which “encourages both scepticism and innovation and is thus inherently subversive.” [p.143] It is hard not to conclude that, for them, ideologies are (as for Mannheim) simply given *objects of reference*, but not (as for Geiger) *subjects for change*. This would seem to make the modern SoK research programme predicated on a *passive acceptance of multiple ideologies*, instead fetishising the *outward symptoms of power and culture*. This idea appears again in Burrell & Morgan’s (1979)⁴⁸ doctrine of “paradigm isolationism or paradigm apartheid” (which Lex Donaldson (1998)⁴⁹ criticises as “destructive” (p.269).⁵⁰)

Berger & Luckmann also usefully discuss *reification*, which is “the apprehension of the products of human activity *as if* they were something other than human products – such as facts of nature, results of cosmic laws, or manifestation of divine will. ... The reified world is, by definition, a dehumanized world. It is experienced by man as a strange facticity, an *opus alienum* over which he has no control rather than as the *opus proprium* of his own productive activity.” [p.106] This is precisely a sociological critique of the presumed “objectivity” of the modern scientific worldview – or, more exactly, of modern

⁴⁸ **Burrell, G; Morgan, G.** (1979) “Sociological Paradigms and Organisational Analysis: Elements of the Sociology of Corporate Life”. London: Heinemann.

⁴⁹ **Donaldson, Lex** (1998) “The Myth of Paradigm Incommensurability in Management Studies: Comments by an Integrationist”. *Organization*, Vol, No.5, May 1998, pp.267-272.

⁵⁰ Both quotes are taken from Donaldson (1998), who seems to adopt a broadly similar view to this work.

scientific epistemologies.

While I do use a softened version of their notion of ideology here (“*a particular definition of reality attached to hidden power interests*”), the three defining hallmarks of modern SoK appear to be: *denial of epistemology*, *passive acceptance of pluralist ideologies*, and *denial of objectivity*. Yet what grounds does it have for doing this? I think these rejections are implicitly ideological - so, to erect epistemological frameworks on top of this (as many theorists continue to, as we shall see in the next section) would surely be absurd.

Modern SoK was founded upon the notion that knowledge is an expression of ideology. However, it is now **not** about critiquing ideologies - it is essentially *pluralist*, accepting ideologies how it finds them, whilst also denying the existence of any kind of “gold standard” to compare ideologies against. SoK is therefore *anti-foundationalist*, and talks not about the *ideological nature of knowledge* but only about the *use of ideological knowledge*.

2.8

LITERATURE REVIEW - KNOWLEDGE FRAMEWORKS

The KM literature contains numerous papers reviewing different perspectives on knowledge: an excellent example is Gourlay (2000),⁵¹ which discusses “*empiricist, rationalist, autopoietic,⁵² connectionist, and situated cognitivist*” viewpoints. (p.1). However, what I am particularly looking for here is **knowledge frameworks**, which (implicitly or explicitly) propose more fundamental properties of knowledge as a way of differentiating epistemologies. For the sake of manageability (rather than rigour), I divide these literatures into three: an ‘attribute’ tradition (*frameworks that propose internal attributes or dimensions for knowledge*), a ‘behaviour’ tradition (*frameworks that divide*

⁵¹ **Gourlay, Stephen N.** (2000) “Frameworks for knowledge: a contribution towards conceptual clarity for knowledge management”. Knowledge Management: Concepts and Controversies Conference, BPRC, Warwick University, 10-11 February 2000. <http://bprc.warwick.ac.uk/km013.pdf>

⁵² For a lucid exposition of autopoietic ideas of knowledge, see: **von Krogh, Georg; Roos, Johan** (1995) “Organisational Epistemology”. Basingstoke: Macmillan.

knowledge up by looking at knowledge uses and behaviours), and a ‘discipline’ tradition (frameworks that divide epistemologies according to their academic locus).

(1) The ‘Attribute’ Tradition - What Is Knowledge Made Of?

Here, Gibbons *et al* (1994) distinguish between **Mode 1** knowledge (knowledge produced within traditional power structures, such as universities) and **Mode 2** knowledge (trans-disciplinary knowledge produced in order to solve problems framed in “the context of application”). Whereas Mode 1 knowledge is incremental, theoretical, domain-bound, and *means-driven* (think ‘methodology’), Mode 2 knowledge is discontinuous, empirical, domain-crossing, and *ends-driven* (think ‘problem-solving’). This also reflects Aristotle’s distinction (discussed in Barker (2000)⁵³) between art & science (in his *Nicomachean Ethics VI*), where “art is always pursued as a means to a further end, while a free science is pursued for its own sake.” In contrast, Despres & Chauvel (2000)⁵⁴ suggest four possible internal “dimensions” of knowledge: (1) **time** (referring to cognitive process representation, such as “(a) mapping, (b) acquisition, (c) codification, (d) storage, (e) application and (f) transformation of knowledge or its elements”, (2) **type** (tacit/explicit), (3) **level** (“referring to different levels of social aggregation”, i.e. scope), and (4) **context** (as “no knowledge element has any meaning outside of a given context”). However, reducing knowledge to multiple (non-exclusive) dimensions in this way fails to advance the present discussion, as *dimension is not structure* (structure is that logic which connects dimensions).

(2) The Behaviour Tradition - How Is Knowledge Used?

Here, von Krogh's (1998)⁵⁵ highly influential framework divides schools of thought into *cognitivist* (where knowledge = a representation of the world [*ie scientific data*]) and

⁵³ **Barker, Evelyn** (2000) “Aristotle’s Reform of Paideia”. 20th World Congress of Philosophy. <http://www.bu.edu/wcp/Papers/Anci/AnciBark.htm>

⁵⁴ **Despres, Charles; Chauvel, Daniele** (2000) “A Thematic Analysis of the Thinking in Knowledge Management”. In: Charles Despres and Daniele Chauvel (Eds.), *Knowledge Horizons: The Present and the Promise of Knowledge Management*. Butterworth-Heinemann.

⁵⁵ **von Krogh, G.** (1998) "Care in knowledge creation." *California Management Review*, 40(3), pp.133-153

constructionist (where knowledge = an internal process of construction or creation [*ie collectively held by a culture, but constructed (as needed) by an individual*]).

Alternatively, Cook and Brown (1999)⁵⁶ describe an **epistemology of possession** (knowledge as *thing*, knowledge as *object*) linked with an **epistemology of practice** (knowledge as *action*, or knowing as a *verb*): they see the pair as conjoined within a “generative dance”. By contrast, Kakahara & Sørensen (2002)⁵⁷ discuss (p.2) four separate conceptions of knowledge - (1) as *object*, (2) as *interpretation*, (3) as *process*, and (4) as *relationship*. For them, whereas (1) is *representationistic* (and corresponds to traditional mechanistic systems thinking), (2)-(4) are *anti-representationistic perspectives*. All three sources in this tradition are insightful, well-informed, and descriptive: yet I argue that to understand knowledge it is not enough to document the patterns of behaviour surrounding its use and definition - so these models also fall short.

(3) The ‘Discipline’ Tradition - Who Is Defining Knowledge?

Here, Richardson *et al.* (1987) questioned whether knowledge sprang from scientific data, whether it was socially constructed, or whether both views could be simultaneously true in some way. Building on this, McAdam & McCreedy (1999)⁵⁸ proposed (and critiqued) three “KM model classifications” (p.91) - **knowledge category models** (like Nonaka & Takeuchi's SECI model, [section 2.4]); **intellectual capital models** [section 2.3]; and **socially constructed models** (ie knowledge models built within the SoK tradition [section 2.7]). However, the KM theory their paper ultimately put forwards (based on Demerest's (1997)⁵⁹ theory) is, ultimately, less about the *structure* of knowledge than with its *embodiment, dissemination, and use* - and so the tension at the heart of

⁵⁶ Cook, Scott D.N.; Brown, John Seely (1999) “Bridging Epistemologies: The Generative Dance Between Organizational Knowledge and Organizational Knowing”. *Organization Science*, 10(4), July-August 1999, pp.381-400.

⁵⁷ Kakahara, Masao; Sørensen, Carsten (2002) “Exploring Knowledge Emergence: From Chaos to Organizational Knowledge”. In: Special Issue on Knowledge Management of *Journal for Global Information Technology Management*, 5, 2002.

<http://mobility.is.lse.ac.uk/download/KakaharaSorensen2002c.pdf>

⁵⁸ McAdam, R.; McCreedy, S. (1999) “A Critical Review of Knowledge Management Models”, *The Learning Organization*, 6 (3), p.91

⁵⁹ Demerest, M. (1997) “Understanding knowledge management”, *Journal of Long Range Planning*, 30(3), pp.374-384.

‘Knowledge Creation’ (between the ‘Scientific Paradigm’ and the ‘Social Paradigm’) remains unresolved.

The obvious ‘fault-line’ over which most of these accounts stumble is the split between *scientific (cognitivist)* and *social constructionist* views of knowledge. However, I argue that this difference is less about *epistemology* than about *ownership* and *control* (both quintessentially capitalist concepts) of **meaning** - for the cognitivists, *to know* something is *to own and be in control of its meaning* - whereas for the social constructionists, *to know* something is *to construct (dynamically) a bridge across to a socially negotiated meaning* (which is always “out there”, never “in here”). That is, the former is a (privately-owned) *internal construct*, the latter is a (publicly-owned) *external construct*. But (as with the capital literature) does the **locus of meaning** tell us much about knowledge itself?

Functionally, what sets Cook & Brown’s (1999) account apart is the “generative dance” which they depict knowledge performing (as it flows between *possession* and *practice*). In contrast, the other frameworks seem starkly *static*, as though they deny the possibility of different types of knowledge being related - as though *constructionists* and *cognitivists* were separated by some *inter-class taboo*. In short, Cook & Brown’s “dance” evokes a dynamic picture of conversion between knowledges - while the other accounts generally see knowledges more as *incommensurable*.

For now, I instead propose a classification between *theories* and *models*. By this definition, a (prescriptive) *theory* says how things *ought* to work (ie a possibilistic view), while a (descriptive) *model* says how things *appear* to work (ie a probabilistic view). My view is that all three traditions reviewed above propose descriptive *models*, in that they all *ethnographically* document different approaches taken to epistemology: I argue that even Gibbons *et al* (1994) is, in the end, post-rationalising the pre-existing Academe/Business (or Aristotelian art/science) division. This literature’s primary focus on models attracts the charge of its being an apologetic for recorded (both good and bad) knowledge

practice, with the exception of Despres & Chauvel’s discussions of the dimensions of knowledge (but note that they immediately use those dimensions to model “seven clusters of activity” in KM).

The knowledge frameworks reviewed here all strive to model different ways of classifying knowledge while remaining inclusive, thereby avoiding the academic ‘sin’ of prescription. The familiar fault-lines (between cognitivist and constructionist, between scientists and sociologists) remain: and so the gains to be had from this whole activity seem modest. Yet, what might a knowledge framework based on a foundational principle look like? This will become sharply relevant in the next chapter.

2.9

A PROBLEMATIC FOR KNOWLEDGE

While this chapter has reviewed many literatures, these form three strands (*Figure 2j*):-

- Capital-based accounts (which focus on the *diffusion of ownership* of knowledge);
- Sociology-based (which focus on the *ownership of meaning* of knowledge); and
- Knowledge Management (which tries to reconcile the other two strands)

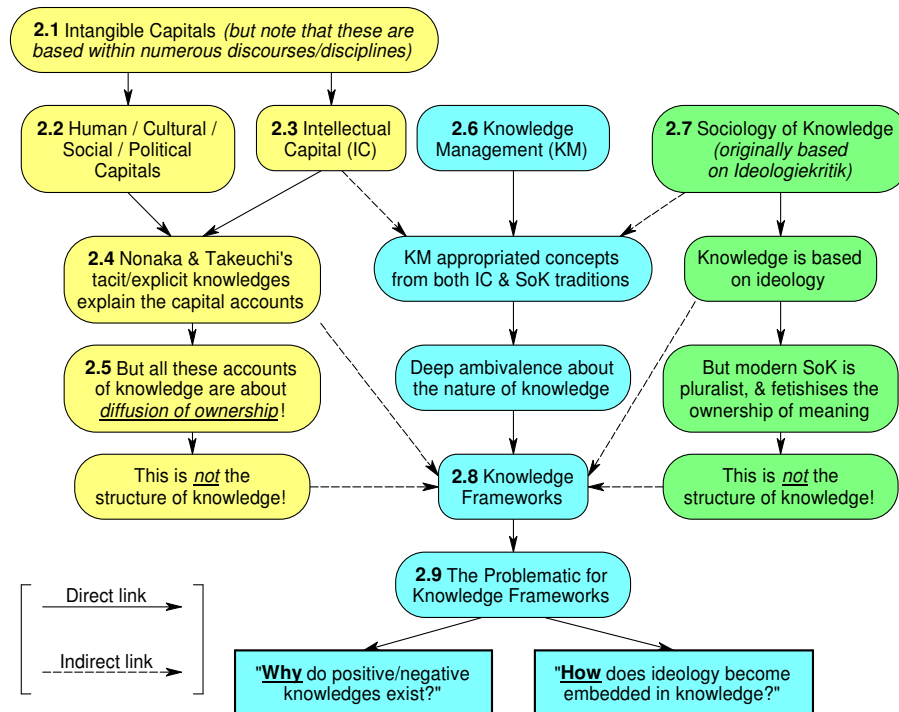


Figure 2j: the structure of Chapter Two’s argument

By now I hope it should be clear that there are many problems with the various literatures on knowledge. Philosophy's focus on *certain knowledge* has served to remove it from practice; the modern capital literatures' focus on *ownership of knowledge* has served to divert theorists' collective attention away from the structure of knowledge; while the sociological focus on *use of knowledge* and *ownership of meaning* has helped it become an apologetic for ideological pluralism. Simultaneously, the Knowledge Framework literature has been kept busy documenting (and modelling) all the different ways people build theories of knowledge. Meanwhile, KM theorists continue to widen their appropriative net, echoing Midgley's (1989) "slapdash pluralism" phrase (p.192) - and we remain none the wiser about what knowledge actually is in any useful sense.

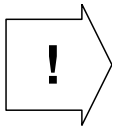
However, the close examination of Nonaka & Takeuchi's tacit/explicit typology has helped to identify an internal dimension of knowledge, with **positive** (principle-based) & **negative** (exception-based) aspects - but their account stays superficial, and doesn't ask **why do positive and negative knowledges exist?**

Furthermore, the Sociology of Knowledge literature is predicated upon Peter Berger's (1963) "first wisdom", that "things are not what they seem" (p.14) - the notion that knowledge is innately ideological and serves to maintain power interests, that it is a means for control. However, the big question here - **how does ideology become embedded in knowledge?** - is unasked by modern SoK writers, who are largely content to follow Berger & Luckmann (1966) and accept pluralism as an Inherently Good Thing.

Here, then, is our desired 'problematic' for knowledge - two open-ended questions which serve to define the field of enquiry. Fischer (1996)⁶⁰ contrasts "theory-bound research [which] begins with an assertion" with "problem-centred research [which] starts with a question" (pp.315-316): in response to this two-pronged problematic, the next chapter

⁶⁰ **Fischer, David Hackett** (1996) "The Great Wave", Oxford University Press, New York.

constructs a *theory* for knowledge, which Chapter Four then tests out.



The overriding message from this whole chapter is that to rely solely on capitalist/ownership *tropes* or passively to accept ideological infiltration of knowledge is to abnegate **responsibility**. I believe that any responsible account of knowledge should at least attempt to resolve these two basic issues.