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The Intellectual and Curricular Spaces of Knowledge Studies

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As part of a larger study of knowledge in relation to inquiry and intellectual life, I have been examining the literature on knowledge and thinking about how best to approach the study of knowledge. What intrigues me is the effect of academic disciplines on the different brands of knowledge studies, because part of what defines a discipline is its approach to knowledge and reality. Contemplating this literature, it is apparent that many disciplines think about knowledge differently, and may even mean different things by "knowledge." To best study the phenomenon of knowledge as a whole, therefore, I suggest that we must reach for a new synthesis that remains outside all traditional disciplines while consciously attending to the way disciplinarity itself can structure knowledge (see Dabars, 2008; Becher, 1989). Later, I will describe the efforts of two eminent scholars from an earlier generation whose works point in the direction of such a transdisciplinary project on knowledge.

Knowledge is a particularly difficult subject to study because it is so unbounded. Everyone has some sense of what knowledge is, and the word and concept of knowledge comes into play all the time, because it is so integral to all behavior and activity. Knowledge is so ubiquitous and commonplace in our thinking, such an obvious factor, that it is hard to think creatively about it. What can we learn about it that we do not already know? Since it is at the surface it should be very visible, but it lurks in the background, taken for granted like furniture. Its essence is slippery and elusive. The subject of knowledge is hidden in plain sight in the university and in the library.

It is also an odd subject to select for investigation. In one of its many senses, the word "knowledge" more or less characterizes the intellectual content of all education. That is, it is the

substance of all disciplines, all subjects. Since all academic work is or relates immediately to knowledge, observing it as a containable category risks being paradoxical. In another sense, knowledge is idealized as the final product of academic work, the prize that justifies the effort. The aim of all study, research, and writing in academia is to contribute to knowledge. Knowledge in this sense is enlightenment, a lofty and ethereal accomplishment.

No individual discipline can own the subject of knowledge, since it belongs to all scholars and inquirers. Yet knowledge itself has been an object of study in several disciplines. How, under the circumstances, should the study of knowledge be handled in the curriculum, and what are its intellectual spaces? That is, what fields of academic discourse does it engage?

Questions about the ultimate nature, purpose, and value of knowledge are ultimately philosophical questions, so it is necessary to start with philosophy. Long before the advent of the modern university with its disciplines and departments, philosophers have been asking what it means to know, how we acquire knowledge, and how we know *that* we know. Philosophers study the basic and fundamental aspects of the meaning and justification of all knowledge. They have also privileged certain kinds of knowledge as the most valuable forms of knowledge (see Allen, 2004). The philosophical analysis of knowledge is about fact, truth, justification, evidence, doubt, external reality (including the existence of other minds), and cause and effect. Knowledge is seen as a special kind of belief, and a fundamental question is what criteria differentiate knowledge from other beliefs and opinions. While philosophers may probe the implications and consequences of real world situations from history, current events, or everyday life, their preferred method of advancing theory relies on the use of thought experiments, in which hypothetical and often improbable scenarios are analyzed for their logical plausibility and implications: if this is the case, then it follows that that must also be the case.[1]

A different and more recent approach to knowledge has been the sociology of knowledge, which focuses on institutional aspects of the construction, development, distribution, and perpetuation of knowledge. But what the sociology of knowledge looks at as knowledge may not be considered real

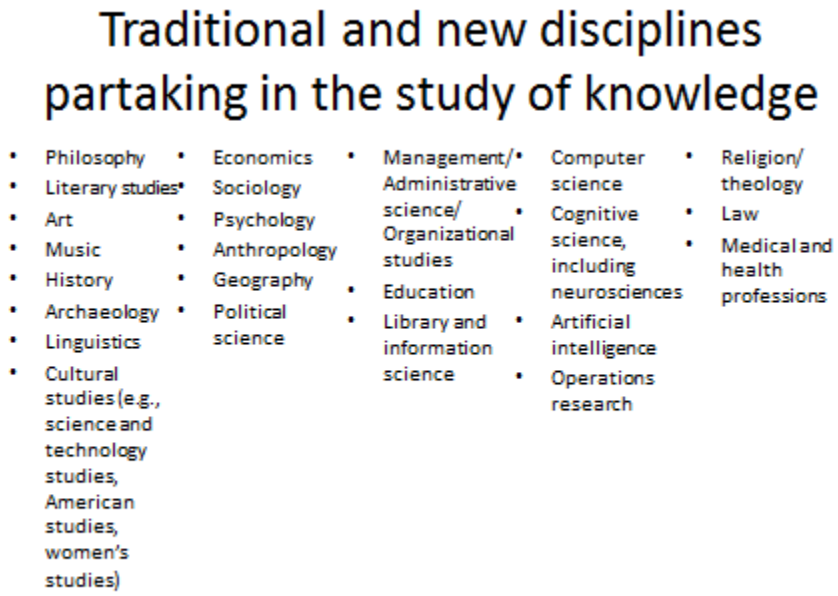
knowledge by philosophers, since the sociologists look at how beliefs are justified, upheld, and shared, without reference to how they are proved to be factual by logical and analytical methods. Truth is socially negotiated, and expertise is determined by social processes, through power, persuasion, and influence rather than by objective measures. Both the philosophers and the sociologists are concerned with certainty, but they mean different things by it. Philosophers ask how one can be certain of something. What are the proper, appropriate grounds for certainty? Sociologists ask what causes people to be certain of something in a particular situation. What criteria do people use to become assure them of certainty, to accept something as a fact? The question of how knowledge claims are evaluated is not the normative one of how knowledge claims *should be* evaluated, as it is for epistemologists, but rather an empirical one of how people in a given context actually go about evaluating or justifying a knowledge claim.

Emile Durkheim (1964), one of the first sociologists, coined the term and notion of a "social fact," and a claim of knowledge can be treated by a sociologist as a social fact, something accepted, treated, and used as knowledge by convention, whether or not it satisfies a scientific standard of validity. The concept of a social fact enables the sociologist to examine the premises behind such practices as fortune-telling, alchemy, and witch-hunting as modes of knowledge. Social facts, however, are not part of physical, biological, or psychological reality but inhabit a plane of reality all their own. Sociologists see knowledge as providing a sense of reality, even when it is only a social construct. For example, outside social conventions, there is no difference between a Sunday and a Monday. In the disciplinary division of scholarly space, it is not the sociologist's job to determine the reality of a claim in any dimension other than the social. But the nonchalant manner in which sociologists of knowledge shrug can off the responsibility to confront the objective reality or truth underlying knowledge statements infuriates the epistemologists. Sociologists of knowledge are divided over whether objective knowledge is even humanly possible. Topics in the sociology of knowledge include professionalization, certification,

expertise, linguistic, conceptual and social structuring of knowledge, secrecy and selective disclosure, codes, bureaucracy, status and roles, and prestige.

Of course, I have simplified the matter to suggest that all scholars trained as philosophers do one kind of analysis when they study knowledge while all of those trained as sociologists use a second, mutually exclusive framework. In fact, there is significant interplay between the philosophers and the sociologists, and an entire subset of literature in social epistemology works with problems in the border between the two fields, such as trust and the evaluation of testimony (see Goldman, 2002).

But what I am talking about is neither the philosophy of knowledge, nor the sociology of knowledge, nor even the dialectic between them, but rather, the advantage of place both concerns about knowledge in an even broader inquiry into knowledge that goes beyond epistemology and sociology. Does such a project exist? If we plunge deeper into the literature on knowledge, we find materials from many disciplines that connect only loosely to each other. Researchers in almost every social science and humanities discipline have contributed significantly to the literature about knowledge. [see figure below] The literature is scattered throughout the disciplines as well as the interdisciplinary fields, with the result that searching the literature leads outward in many directions with no sense of conclusively touching bottom.



Most of the recent literature about knowledge comes out of the burgeoning field of knowledge management (KM), with contributions from faculty in schools of business, management, administration, and policy studies, departments of organizational studies, and of course, professional managers and consultants. KM is not in itself the study of knowledge but rather a "set of processes that create and share knowledge across an organization to optimize the use of judgment in the attainment of mission and goals" (Townley, 2001, 45). As an emerging academic focus if not exactly a discipline, KM must have a formal approach to the meaning of knowledge (see Spender 1996, Blackler, 1995; Stenmark, 2001). KM aims to maximize the impact of knowledge (Holtshouse, 1998) but only for the benefit of shareholders, since it looks at knowledge as an economic product, a resource for the firm or organization. The knowledge manager devises tools to capture workers' knowledge and make it available to others in the firm, so they can use that knowledge to create better products.

The knowledge management viewpoint seems contrary in some ways to an educational or liberal arts viewpoint, approaching knowledge as a resource that needs to be elicited from knowledge workers for the benefit of the firm rather than a good in its own right.[2] In liberal arts, educational or scholarly

approaches, curiosity and interest motivate the quest for knowledge. The KM viewpoint, on the other hand, views knowledge as control over a system (see Bernstein, 2009). The fact that a business-oriented view of knowledge has arisen that does not consider the intellectual value of knowledge as an end in itself is not necessarily a problem, but one would like to find a common ground that can bring all perspectives on knowledge into a single conversation or at least have them connect on fundamental issues and a core agenda. Because the term "knowledge management" suggests a commitment to managerial priorities with an emphasis on the bottom line rather than education and scholarship, I suggest we use a different term, "knowledge studies" to include knowledge management that is informed by other approaches.

The knowledge management notion of knowledge relates knowledge to information and data. This notion has it that knowledge builds on and synthesizes information, adding value, and at the same time refines and filters it. It takes a great deal of information to get a small amount of knowledge. This view of knowledge as processed information is quite different from previous views of knowledge that idealized it as the product of learning and scholarship, a view promoted in traditional humanities and liberal arts educational programs. It is also different from the views promulgated by the epistemologists and the sociologists of knowledge. The new view basically stems from the priorities of administration, which is an applied rather than a pure field. In order to be managed, an individual's knowledge must be elicited, codified, and transformed into a sharable format, whether the product is called knowledge or information (McInerney, 2002, 1016).Knowledge is hard to specify, much less measure, but if it is described in terms of information it can be quantified, making it useful in administration for accounting and evaluation. Information, unlike knowledge, can be measured as inputs and outputs.

The knowledge management view of knowledge draws on the closely related fields of information science and cognitive science, relying on models of cognition as information processing (see Buckland, 1981; Kochen, 1974; De May, 1982, Gleick, 2011; Sowa, 1984). An even larger context of this work is the vast reordering of civilization that occurred during the Cold War, which included an explosion of scientific research and an awareness of the increasingly important role of knowledge in the

economy, as well as the rise of the knowledge worker. Besides knowledge, the word and concept of "information" rose to great importance beginning in this time period. After World War II scientific research exploded, accompanied by change in the way office work was handled because of the development of computers. Several social forecasters commented on this monumental shift in civilization, including Peter Drucker, a management guru, as early as 1959 in his book *Landmarks of Tomorrow* and later, the sociologist Daniel Bell in *The Coming of Post-Industrial Society* (1973) and the futurologist Alvin Toffler in *Future Shock* (1970) (see also Kumar, 1995). The intensification of investment in science and education was closely wrapped up with the Cold War and went into overdrive with the Soviet Union's Sputnik launch in 1957, unleashing a golden age of the American university in terms of expansion, prestige, and commitment of resources, which climaxed with the moon landing in 1969. This period saw the growth of information theory and the development of the notion that knowledge is based on information. The rise of information theory created the conditions leading to the "tendency to conflate knowledge and information" (Kenway et al. 2006, 16).

Many scholars in information science and knowledge management have advanced formulations about the connections and distinctions between knowledge and information, with most seeing knowledge as arising from information. But other possibilities have been put forward. To get a sense of the possibilities in conceptualizing the connection between knowledge and information, consider that Marcia Bates (2005) defined knowledge as information given meaning and integrated with other contents of understanding, while Jason Farradane defined information as the physical surrogate of knowledge. Fritz Machlup (1979), whose work will be discussed below, considered information to be the process of transmitting a message while knowledge was the intellectual content of the message. In a similar vein, Claire McInerney (2002) distinguished sharply between knowledge and knowledge artifacts.

A plethora of literature treats the relationship between knowledge and information. Knowledge and information are such common words in the English language that it is difficult to be technically specific about these distinctions, and thus confusion in usage persists. The notion that knowledge is

related to information is in keeping with the changes wrought by the implementation of computer technology. But knowledge and information have different conceptual links. Knowledge is related to concepts, ideas, facts, and certainty, while information is related to communication, messages, and vehicles of message transmission. Also, there has been backlash from the humanists, with some writers, notably Theodore Roszak (1994), rejecting vehemently the reduction of knowledge to information, or, to put it another way, the elevation of information to the status of knowledge. Roszak's work is a critique of experts who herald the information age and reliance on computers as something that will better society. In his words, information does not create ideas, and the mind thinks with ideas, not with information (Roszak 1994, 88).

The knowledge management view of knowledge as tied to information has the advantage of breaking down knowledge into a kind of developmental process from data to wisdom, but has the limitation of ignoring other ways of looking at knowledge. Knowledge management leaves behind the ivory tower of academic ideas about knowledge and goes out into the real world, but only a certain kind of real world, and a certain angle on that real world. In other words, it trades one kind of hegemony for another. Its standpoint from the management perspective, asking questions about what value knowledge can bring, has advantages and disadvantages. It seems to discount the notion of free inquiry for the purpose of satisfying an individual desire to know, particularly for those who are not affiliated with any organization. I suggest that the academic or student on the one hand and the manager or business executive on the other inhabit different worlds each with their own specific values and rewards, from which they generalize. These values and rewards need to be recognized, accounted for, and analyzed critically. In the final analysis, knowledge management as an incipient applied discipline provides one more paradigm or theoretical approach to knowledge but it is not sufficient to cover all the considerations involved in studying knowledge.

Because the subject of knowledge concerns and cuts across all scholarly and educational disciplines, a special kind of interdisciplinary effort is required to comprehend it effectively. I see the

need for a more unified and integrated transdiscipline of knowledge studies. Transdisciplinarity is a recent movement in higher education that seeks to move beyond the notion of disciplines altogether as structures that can hinder understanding of a particular problem (see, e.g., Evans, n.d.; Kreber, 2009; Madni, 2007; Montuori, 2012; Pop and Maties, 2008). The limitations of the existing disciplines we have inherited have become increasingly apparent as scientists and scholars feel traditional disciplinary approaches are insufficient to tackle problems in the present world, such as global climate change. New developments in science and technology, and the globalized economy, require new ways of thinking about education and knowledge production (Wersig, 1993). Transdisciplinarity seeks to reconstruct knowledge from scratch, recombining the content knowledge of the disciplines into new formations with an aim to see all the angles on a problem at once, analyzing the dynamics between multiple dimensions of reality, unlike traditional disciplines, which can only analyze phenomena from a single level (Pop and Maties, n.d., Wallerstein 2004). It is most commonly applied to technological fields such as nanotechnology, but I think the study of knowledge also calls out for a transdisciplinary approach. Transdisciplinarity would restructure the study of knowledge without framing or packaging it into traditional disciplines.

While institutional recognition for knowledge studies is scant, the notion is not unprecedented.[3] The notion of a core reading list on knowledge as a transdisciplinary subject brings me to the two authors whom I think should retrospectively be granted the status of founding fathers in the field, Fritz Machlup and Michael Polanyi. Both are canonical to the literature on knowledge management, and I feel that their projects, looked at together, point us in the direction of moving beyond knowledge management, which incorporates epistemology but has limitations of its own, toward an even more total understanding of knowledge needed in education. Coming from different directions, they set up a powerful basis for developing a project about knowledge that keeps a focus on intellectual life, cuts across disciplines, but not giving primacy to any single discipline, and that can be used to analyze all kinds of knowledge: scholarly, business, and ideally, everything else.

Both were emigrants from central Europe escaping the Nazi terror in 1933, with Machlup settling in the United States and Polanyi settling in England. They came to the study of knowledge after establishing themselves in distinguished academic careers in very different subjects. Their careers were instrumental in the rise of the conceptualization of the knowledge society.

Machlup's interest in knowledge developed over several decades and was only a small part of a distinguished career as an economist. He wrote about knowledge production from an economic perspective in a 1962 book in which he began articulating a typology of the kinds and qualities of knowledge, and he developed the ideas further in the four-volume *Information Through the Printed Word* in 1978, but it was really his last project, *Knowledge: Its Creation, Distribution, and Economic Significance*, that interests me because it is a study of the nature of knowledge that moves far beyond the economic questions that first stimulated the author's interest in questions about knowledge. Economics was only an entry point into his investigation, and it provided him with intellectual grounding. From there, he used all the tools at the scholar's disposal to explain knowledge not only as an economic phenomenon but also from every other valid angle: cultural, sociological, linguistic, psychological, etc. He brought together the insights from all disciplines as well as from his own thought experiments. Although knowledge on the whole is thought of as a philosophical problem, Machlup's approach was not properly philosophical, since he did not define knowledge in any analytical way. Instead, he incorporated the inputs of various disciplines, approaching his topic of knowledge as one would a more ordinary topic. Machlup advocated an open concept of knowledge and defined it as whatever people thought was knowledge, and did not consider questions of truth, justification, or evidence. His view of knowledge does not pass muster in disciplines that demand absolute verifiability, logical consistency, measurability, accuracy, and avoidance of error. Philosophers were not satisfied with his study, and do not frequently cite it. Yet his work was not properly sociological either, and the sociologists did not give it an enthusiastic reception. I would say he reached beyond both philosophy and sociology. His approach to knowledge is most acceptable to library science. It would be almost as accurate to say that he used no

disciplinary foundation as to say that he incorporated all relevant disciplines. But he did not push into the final frontier of transdisciplinarity by "reimagining disciplines" (Castan Broto et al. 2009). However, it seems to open a door to transdisciplinarity. Perhaps his most lasting original contribution was his taxonomy of the basic types of knowledge, all of which he subjected to full scholarly analysis: Practical knowledge, intellectual knowledge, small talk and pastime knowledge, spiritual knowledge, and unwanted knowledge. As we can see, his study seeks to give a full overview going beyond philosophy and sociology. His open model of knowledge comes close to the philosophy of librarianship, and his approach to knowledge as a broad cultural phenomenon and defining characteristic of civilization lives on in works such as Peter Burke's *A Social History of Knowledge* (2000-2012).

Michael Polanyi began his career as a physical chemist, and achieved great distinction before changing his field of interest in his fifties to social sciences, working at first on labor and employment. But he soon became occupied with big picture questions about knowledge and inquiry. He cites the major modern philosophers, and his work is recognizable as philosophy.[4] But what is most striking about Polanyi's work on knowledge is that he skips past the topics that have traditionally dominated philosophical epistemology and writes about the personal engagement with the world that characterizes discovery. Polanyi prioritizes the interests, motives, and thought paths of the individual knower or inquirer. For him, knowledge is acquired through engaged inquiry, through passion and commitment. The inquirer could be anyone, not only a professional, skilled, or certified expert. In contrast to approaches to knowledge that look at knowledge as an external phenomenon that must be apprehended by humans, Polanyi begins with the outlook and position of the individual inquirer or learner. This is a necessary obverse to the usual approach of beginning with already existing knowledge. In other words, he looks at the knowledge creation process.

His view of the scientist is humanistic and optimistic, even idealistic. This is in stark contrast to the negative, bleak, and anti-humanistic views about knowledge put forth by many sociologists of knowledge, especially those in the postmodernist and deconstructionist traditions (see, e.g., Mourad,

1995; Blum, 1971; cf. Gill, 2000). Knowledge for him was not a view from nowhere, depersonalized and objective. Rather, his approach relates to scholarly inquiry, and to the psychology of the inquiring mind. He looks at engaged inquiry: how people pursue knowledge through inquiry and discovery. Such an approach is applicable to science, education, and everyday life. It includes multiple kinds of knowing, down to sensory perception. The approach is more psychological than sociological, expanding on the insights of Gestalt psychology. This approach to knowing from the inside anticipates Abraham Maslow's work on positive psychology and Mihaly Csikszentmahalyi's work on flow (Maslow, 1966; Czikszentmahalyi, 1990). It is even phenomenological in that it refers to bodily awareness and practices, including attention, sensory perception, and involuntary movement of the muscles.

While Machlup looked at knowledge as the achievement of civilization, Polanyi looked at the process of knowing from an internal point of view. He saw knowing as an active comprehension of things known, requiring skill. He aimed to understand the processes by which one integrates various kinds of evidence into a meaningful mental structure. He looked at understanding, or making sense, grasping and integrating information to make it knowledge. Although he did not put it into those terms, he was interested in how information is mentally transformed into knowledge by seeing patterns in particular details.

Both of these scholars, Machlup and Polanyi, focused on knowledge in ways that exceeded the limitations of the disciplines. In this way, they are a model for us who want to develop an updated transdisciplinary study of knowledge. No one can expect books written as long ago as Machlup's and Polanyi's to answer the questions people have now about knowledge. The world has changed in so many fundamental ways. At the very least, we have already moved to a later phase of the postindustrial era described by the early prognosticators. More likely, we are at the beginning a new stage of civilization in our relationship to knowledge. In many respects, Machlup's and Polanyi's publications stand as historical documents of a way of thinking that flourished during the times they worked. But I think their

transdisciplinary and integrative approach, as well as their scholarly and moderate outlooks, set up superb models for what I hope will be a new generation of knowledge studies research.

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[1] Leading recent contributors to epistemology include Dretske (1981) Lehrer (1990), Pritchard (2009). See also Alcoff (1998).

[2] The role of knowledge in the liberal arts curriculum as promoting the good life has been stressed by Hirst (1974).

[3] See Reiner Grundmann and Nico Stehr's five-volume anthology entitled *Knowledge* (2005); Steve Fuller's core curriculum for an imaginary graduate program in knowledge policy studies, included as an appendix in his book, *Social Epistemology* (1988), and Wallace's (2007) survey of knowledge management, which goes far beyond the usual KM literature into much of what I would call knowledge studies. Cardiff University's Centre for the Study of Knowledge Expertise Science (KES), headed by Harry Collins, http://www.cardiff.ac.uk/socsi/research/researchcentres/kes/aboutkes/index.html is focused on knowledge studies, and Vanier College (Montreal) has a program of courses focused around the theme of knowledge. See http://www.vaniercollege.qc.ca/Auxiliary/Humanities/humknow.html

[4] Because the format of this conference presentation requires brevity, I can only mention here that Polanyi called attention to modes of knowledge not studied by previous philosophers of knowledge, in particular, knowledge which cannot be explicated about how to perform an action (e.g., riding a bicycle). The term he coined for this phenomenon, *tacit knowledge*, is the cornerstone of knowledge management, as re-interpreted by Nonaka and Takeuchi (1996).