Epistemology, Theory, and Methodology in Knowledge Organization: Toward a Classification, Metatheory, and Research Framework

Joseph T. Tennis
The Information School of the University of Washington

Abstract
This paper proposes a preliminary classification of knowledge organization research, divided among epistemology, theory, and methodology plus three spheres of research: design, study, and critique. This work is situated in a metatheoretical framework, drawn from sociological thought. Example works are presented along with preliminary classification. The classification is then briefly described as a comparison tool which can be used to demonstrate overlap and divergence in cognate discourses of knowledge organization (such as ontology engineering).

1 Introduction
My task, in this short essay, is to discuss epistemology, theory, and methodology in the field of Knowledge Organization (KO). This is not an easy thing to do, because even a casual glance at the literature shows that epistemic, theoretical, and methodological concerns constitute the driving force behind argument and findings in much of the conceptual work of KO. Thus the rationale for considering this topic is prima facie, clear. What is less obvious is the need to define and organize these conceptions into a framework that allows us to get an overarching sense of the topic and offers us a preliminary evaluation mechanism.

1.1 Classification, Metatheory, and Research Framework
Though there are a number of ways to study how people organize knowledge one rubric I have found helpful has been the Information Organization Framework. For the purposes of comparison, knowledge organization is the process of ordering and representing documents. Information organization is the process of ordering and representing information, which comprises documents and other entities considered information, for example representations of genes in the Gene Ontology (2008). This construct not only accounts for the structures present in regimes of information organization (e.g., classification schemes, bibliographic records, etc.), but also the discourse that surrounds and the work practices associated with them (creation, maintenance, and use). The discursive analysis drawn from using Information Organization Framework analysis has provided insight into the epistemology, theory and methodology of KO (Tennis 2006).

Information Organization Framework is the result of a metatheoretical investigation, and the present discussion is a continuation of this work. Metatheory serves four purposes: (1) gain a deeper understanding of extant theoretical work; (2) provide an overarching perspective of that work; (3) serve as a mechanism for evaluation; and (4) serve as a prelude to future theoretical work (Ritzer 1991a, 1991b). Examining how epistemology, theory, and methodology manifest in KO is an example of (2) above, the second kind of metatheory that provides an overarching perspective on theoretical work. It can also serve, in some small part as a preliminary mechanism for evaluation, (3) above, if only in the way KO researchers think about the relationships between these three spheres of thought (design, study, and critique) and the presentation of their scholarship.

However, in order to provide an overarching perspective and a preliminary evaluation mechanism, this paper takes as its main purpose to create a naïve classification (Beghtol 2003), one created in order to demonstrate extant knowledge, with the hope creating new knowledge as a byproduct. The following work then, is a creative and over simplified discussion of the parts of epistemology, theory, and methodology that might manifest in the literature of KO. The bibliography is thus too short, and the work used is not exhaustive of the concepts or topics. Utility was my stopping point, and I hope I have reached it.

1.2 Definitions
Others in this special issue are addressing the definition of the field, and though they will do a more detailed job, I must start there, in order to proceed with my own task. KO, for my purposes, is the field of scholarship concerned with the design, study, and critique of the processes of organizing and representing

documents that societies see as worthy of preserving. This field, as stated, has three parts: design, study, and critique. Each of these parts has its own set of epistemologies, theories, and methodologies – all manifest in the scholarship carried out by KO researchers. Here we have the first facets of our classification.

01	Epistemology	04	Design
02	Theory	05	Study
03	Methodology	06	Critique

Along with defining KO, I also must define epistemology, theory, and method in order to address how these manifest the research literature. In brief, epistemology is *how we know*. Theory is a *set of propositions used to explain some phenomena, a narrative*, and methodology is *rules and procedures of research*. Each of these will be expanded below. First, we start with epistemology.

1.3 Epistemology

Epistemology is *how we know*. In KO we make implicit epistemic statements about knowledge of concepts, acts (such as representation), entities, and systems. In so doing, we create knowledge, and our epistemic stance dictates what kind of knowledge that is. Some common names of epistemic stances are: pragmatic, positivistic, operationalist, referential, instrumental, empiricist, rationalist, realist, etc. Each of these makes claims as to what kind of knowledge can be created through research, and how it is gathered and how it is presented. These epistemic stances do this work because they have a systematic view on reality, our knowledge of it, and the meaning we can ascribe to it. The KO researcher that claims a pragmatic epistemic stance has made a statement against rationalist stances about the meaning of reality and how we come to know it.

Hjørland offers us a number of epistemic stances for KO research; his own work moving from materialist through activity-theoretic, then into what some would call an implicit rationalist stance, and then to critical realist viewpoints (Hjørland 1992, 1997, 2002, 2004 respectively). He is not alone in identifying schools of epistemic thought in KO. And with the interest in this area we find there are almost as many definitions for these terms as there are writers. The variegations of interpretations of epistemology, epistemic stances, and their ilk, make the defining and using of epistemology a difficult problem for the KO researcher. There is the added burden of embodying your epistemic stance in your method and in your writing, which leads to a number of misunderstandings in scholarly communication. For example, many post-structuralist thinkers use prose to destabilize the position of stable knowledge, and they, as a consequence *play* in the language they use to deliver findings and interpretations from their work.

Epistemology is an important part of the KO armature because it reflects our assumptions about language, the primary material of KO systems. The still prevailing stance, what we might call the *common-sense approach* to language and representation, obscures the complexity and variety present in representing and ordering knowledge through language use. Epistemology is a tool used to present criticism to this common-sense approach. It addresses the concrete question of how we know what to present in classification, indexing, or other KO systems. This is linked to methodology as well.

Epistemological thought and its consequent epistemic stances and knowledge claims have changed over time. In some cases two or more stances have coexisted, while others have fallen out of favor, in their strictest sense. Svenonius has examined epistemological stances key to KO (Svenonius 1992, 2004). She describes Operationalism, Referential Theory, Instrumental Theory, and Systems Theory as in one way or another fundamental to KO. These stances have influenced research in KO since the beginning of the twentieth century. All of these make some statement about *meaning*, and precisely how we know what a word means, and as a result, we know how to build meaningful KO systems. As can perhaps be read from their titles, these schools fix meaning through operationalization, reference to an external source, through the use of the word, and finally in a systematic and contingent environment. Svenonius closes her 1992 talk with a statement about prospects and promises about classification specifically. I will return to her use of these epistemic schools in her list, updating it for today and incorporating the proposed classification I will have finished here.

One "radical" example of epistemic constructs and knowledge claims comes from radical liberation theology, and its reclamation of words, classification, and dictionaries. Mary Daly in cahoots with Jane Caputi (1987) conjured the Websters' First New Intergalactic Wickedary of the English Language. The purpose of this work was to remove patriarchal meanings from women's words, recast the organizational structure of word lists, and re-imagine a unique feminist sense of becoming through new definitions and new uses of terms. Words are given new meanings, and some are hyphenated to reveal their new intentions. This epistemic stance claims that words as currently defined limit the self-becoming of women, and so they must be newly crafted or redesigned from a women's realty. This radical list of word meanings fosters distinct knowledge claims about reality, how women know it, and what it means. Further, particular theory and methodology flow from this stance.

Epistemology in sum is, the claim on what knowledge is valid in research on organizing knowledge, and therefore what constitutes acceptable sources of evidence (presenting that knowledge) and acceptable end results of knowledge (findings from KO research). It allows us our insight and our blindness, and on a primary level cuts our research into what is acceptable and unacceptable. Epistemology in KO, results in an *epistemic stance* that outlines *knowledge claims*. In the case of KO we are concerned with assumptions about language, and how we can work with it in harmony with our conceptions of reality, how we know it, and what it means.

1.4 Theory

As we said above, theory is *set of propositions used to explain some phenomena; it is a narrative.* Theories are, in the most general sense, unifying narratives about phenomena. Such narratives can predict, while others recast our perspective or view on the world. Others are created to shift our views on social action fundamentally. The kind of narrative (predictive, perspective, or invoking a fundamental shift) depends on the epistemic stance. Bates and Mai have both addressed issues related to theory in KO. Bates defines two senses of theory.

> "The body of generalizations and principles developed in association with practice in a field of activity (as medicine, music) and forming its content as an intellectual discipline.... (Webster's Unabridged Dictionary) (b) A system of assumptions, accepted principles, and rules of procedure devised to analyze, predict, or otherwise explain the nature or behavior of a specified set of phenomena. (American Heritage Dictionary 1969). (See also Reynolds 1971.)… Theory, as defined in definition (a) above, can be thought of as the entire body of generalizations and principles developed for a field, as in "the theory of LIS." Second, and more of interest for this paper, is the concept of a single theory. A theory is a system of assumptions, principles, and relationships posited to explain a specified set of phenomena. Theories often carry with them an implicit metatheory and methodology, as in the "rules of procedure" in the (b) definition above. However, for most purposes, the core meaning of theory centers around the idea of a developed understanding, an explanation, for some phenomenon." (Bates 2005 2-3).

Speaking specifically about the scientific species of classification theory, Mai describes theory as such.

"An ideal theory of classification that follows the neutral, objective and positivistic line of thought should be able to prescribe how a set of documents should be organized and predict the consequences of the organization. The theory should furthermore apply to all kinds of different settings, users, and document types. Flyvbjerg sums up the requirements of an ideal theory based on his readings of Hubert Dreyfus and Pierre Bourdieu. Flyvbjerg finds that ideal theories have six characteristics:

- Explicit. A theory needs to be laid out in such detail that any reasoning human being is able to understand it. The theory must not fall on interpretation or intuition.
- Universal. The theory must apply at all times and in all places.
- Abstract. The theory must not require reference to concrete examples.
- Discrete. The theory must be formulated with context-independent elements; it cannot refer to human interests, traditions, institutions, etc.

- Systematic: The theory must constitute a whole in which the context-independent elements are related by laws or rules.
- Complete and predictive. The theory must be complete in the sense that it covers its whole domain and it must be predictive in the sense that the theory must specify the effects of the elements," (Flyvbjerg 2001, 38-39).

When comparing these two ideas of theory (Bates's and Mai's), we see two sides of the theory coin. Mai provides a *committed* definition of theory, specifically linked to the scientific agenda that such theory is to support. Bates's definition, in its two parts, is not so committed, but describes a wide range of explanatory power. The type of explanatory power a theory has is often divided into two extremes: *nomothetic* and *idiographic*. Nomothetic is concerned with establishing general laws that underlie phenomena, and idiographic is concerned with individual and often unique cases. Bates comments on nomothetic and idiographic theory.

"The first approach is the one that is fundamental to the sciences. Science research is always looking to establish the general law, principle, or theory. The fundamental assumption in the sciences is that behind all the blooming, buzzing confusion of the real world, there are patterns or processes of a more general sort, an understanding of which enables prediction and explanation of the particulars. The idiographic approach, on the other hand, cherishes the particulars, and insists that true understanding can be reached only by assembling and assessing those particulars. The end result is a nuanced description and assessment of the unique facts of a situation or historical event, in which themes and tendencies may be discovered, but rarely any general laws. This approach is the one that is fundamental to the humanities. (See an excellent discussion of these science/humanities theoretical differences in Sandstrom & Sandstrom 1995; see also discussion in Bates 1994)." (Bates 2005, 11-12).

Though, unlike Bates, I would not advocate linking one approach to the sciences and another approach to humanities, we can use these distinctions (nomothetic and idiographic) and the concept of *committed* and *uncommitted* characterizations of theory in our classification. I can now look at the parts of theory.

Since theory is defined as set of propositions and also as a narrative, we want to define these as well. Propositions are parts of theory, as are constructs. Phenomena manifest from the lens of our epistemic stance. These are the objects of study, and propositions are the statements we use to explain them – placing them in interrelationships. Constructs refine and extend our understanding of phenomena. An example of this would be the propositions and constructs used in semiology, the Peircean view on the study of signs, informed by a particular pragmatic epistemic stance. Peirce has been used by KO researchers, as have a number of thinkers in semiotics (a related body of theory to semiology). In this case the phenomena are signs. The constructs are the different types of signs (icon, index, and symbol) and different parts of signs (object, interpretant, and representamen) (Sonesson 1998a, 1998b). The propositions are, in this case, the coordination of the phenomena and the constructs, that once assembled in a particular order, tell the story of different types of signs, according to Peirce. Mai, interested in this theory, took the Peircean constructs, and applied them to the indexing process (Mai 2000, 2001). In so doing, he constructed a story about that process, that we could expect to find unlimited semiosis in it. This is an example of the narrative provided by theory in KO.

Narratives are stories. Stories layer on stories, and we develop a sense, through narrative, how knowledge is organized, or how people interact with organized knowledge. Theory is built on the primary level of research, epistemology, but floats above it, and when in concert with it, assumes a consistent stance in regard to phenomena and research approach and outcomes. The Mai example above rests on a Wittgensteinian pragmatism (Mai 2000), even if Peirce's did not. His approach and research outcomes follow this pragmatism, and we can see how he benefits from its stance, and where this epistemology may hurt his research: in the ability to create committed theory, for example. This is partly because of the knowledge claims laid out by this kind of pragmatism, one based on Svenonius's Instrumental Theory, and committed to situational knowledge and working within the rules of contextual language.

Theory, as the result of research endeavors, comes in a number of stripes. Much of it in KO is written to create, shift, or denounce narratives.

Creation Narratives
Creation narratives often surface when a researcher wants his or her audience to see KO in a new light, separated from any other theories.

Shift Narratives
Shift narratives move constructs about, keeping the source narrative in place, and not questioning the thrust of the source narrative. Broadfield's work might be seen as a shift narrative (shift theory) (Broadfield 1946), as is Furner's reconceptualization of Shera's theory of social epistemology (Furner 2002).

Denouncement Narratives
Denouncement narratives claim the entire premise of the narrative is problematic and needs to be replaced by a different theory. Hjørland has talked about blind alleys in much of his work (1998). Part of this is epistemic, and part of this is theoretical. In much of his argumentation he was to dissuade researchers from following a particular path in favor of another.

Narratives in our literatures are often supported by theories or constructs (parts of narratives) from outside KO and Library and Information Science. Semiotics, cybernetics, activity theory, genre studies, and various feminisms have shaped the narratives researchers have created in KO. Each of these grew out of an epistemology and was shaped by them. Likewise, epistemology also shapes methodology.

1.5 Methodology
Methodology is the combination of epistemic stance and the methods of investigation. Methods of investigation, what I will call *techniques*, form a practice that carries with it the knowledge needed to have a result faithful to the chosen epistemology.

The presence of epistemology in both theory and methodology lies in the importance of labeling the kind of knowledge claims made through research narrative or research techniques. As we have described above and even if it is often not stated, research carries an implicit epistemic stance. What is more complicated is that researchers require a mixture of epistemic stances in many cases. This is because method or the acceptable results of research may be in conflict with sources of evidence or what knowledge of reality means. Methodology is the machine used to create knowledge. But the operation of the machine does not guarantee the acceptability of the findings. The nature of that newly created knowledge: its validity, veracity, trustworthiness, reliability, or utility is rooted in and manifest in epistemology.

An assertion similar to this has led some researchers to question the epistemic approaches of other writers rather than their methods (cf. Frohmann 1990; Hjørland 1998). These discussions highlight the importance of lining up epistemology, theory, and methodology. The arguments made in these polemics point to the limits of knowledge claims that one epistemic stance has with regard to another. For example, Frohmann claims that Beghtol's approach is mentalism (1989), and that a Wittgensteinian approach would be more appropriate. He does this through what some have called logical argumentation, but what I prefer to call writing.

1.5.1 Writing as Technique
The majority research in KO is done using writing as the technique. Richardson (2004) provides a general discussion of writing as a research methodology. Usually this writing is supported by texts of various sorts (publications, archival materials, and often social acts read as texts). However, though we can point to sources of evidence, claim to outline the procedures we will engage in when reading and gleaning pollen for our blossoming ideas, writing as a technique is not well understood in the larger Library and Information Science community. This may be because it is explicitly linked to a family of epistemic stances and knowledge claims, drawn from the tradition of textual criticism, and founded on the belief that the power of rhetoric and perspective can shape action. Specifically for KO, this means design and evaluation of processes and systems. This is different in kind from studying how users interact with systems (Carlyle, 1989), observing how indexers and cataloguers do their work (Korotikin 1965; Šauperl

2004), or studying the structure of disciplinary division of labor (Hjørland 2002). Examples of this technique can be found in Wilson (1968), Broadfield (1946), Langridge (1989), and Bowker (2005).

The matrix below shows the area of study and their central components.

	Knowledge Claims	Narratives	Techniques
Epistemology	x		
Theory	x	x	
Methodology	x		x

And we can expand our classification thus:

01	Epistemology	024	Idiographic
011	Epistemic Stance	025	Propositions
012	Knowledge Claims	026	Constructs
013	Assertions about Reality	027	Narrative
014	Our Ability to Know Reality	0271	Creation Narratives
015	What Knowledge of Reality Means	0272	Shift Narratives
016	Acceptable Sources of Evidence in Creating Knowledge	0273	Denouncement Narratives
017	Acceptable Findings	03	Methodology
		031	Techniques
02	Theory	032	Contingencies to Epistemology
021	Committed	04	Design
022	Uncommitted	05	Study
023	Nomothetic	06	Critique

1.6 Metatheory

Above I reflected on three parts of research: epistemology, theory, and methodology. As a result, we are getting an overarching view of KO research, and in some small way, drafting a framework that can be used to compare research among KO researchers as well as those that work in cognate areas like ontology engineering and information architecture, just to name two. By reflecting on KO scholarship like this and for these purposes I am working toward metatheory, a common research tool in Information Science (e.g., Cronin 1998; Dervin 2003; Hjørland 1998; Metcalfe 1957; Olson & Schlegl 2001; Vickery 1997; Vakkari & Kuokkanem 1997), that unfolds with varying degrees of adherence to a Ritzer's definition of metatheory (Ritzer 1991a, 1991b). What they all have in common is their intention of providing a narrative about theory. Our intent is to craft that narrative, about how the hitherto discussed three parts of KO research manifest and shape our scholarly literature. This will then serve in systematizing via classification, the identification of these components of KO literature. And it is here where we can begin to speciate the KO literature, at least into broad categories. The following three categories respond to the question: what questions are asked in KO and what types of research grow out of those questions?

2 Design, Study, and Critique

How do I build KO systems? What is going on in the process of building and using these structures? What do such structures and processes mean? The design, study, and critique of KO systems answer these questions. Each of these spheres, while perhaps pulling on the same epistemic stance, and perhaps even theory, manifest a different methodology with regard to these questions. And though this will be a short discussion of these types of research, the intent is to use them as ideal types to extend our classification. We will start with the category of design research in KO.

2.1 Design

Much of KO research concerns itself with the design of indexing languages, catalogues, and other descriptive apparatus. Key thinkers in the field, like S. R. Ranganathan, have contributed a great deal of

thought to the design of, in this case, schemes for classification. Design research operates in a small and particular set of epistemologies, and a diverse set of theories and methods. The fundamental question addressed in this sphere of research is *how do I build a KO system?* I will provide two examples of this work below. Their names are meant to be indicative of the epistemic stance and methodology manifest in the sphere.

2.1.1 Pragmatic Rationalism (Postulationalism)

S. R. Ranganathan and the CRG in their approach to classification theory postulate basic categories and methods for interpreting and representing categories. To postulate categories, in this case, is to create what Ranganathan called fundamental categories (or ideas in some cases). For him they are Personality, Matter (later called Matter-Property), Energy, Space, and Time, abbreviated as PMEST. Ranganathan, in what can be characterized as a pragmatic rationalism, claimed that all categories of subjects could be reduced to these five. All distinct components of any subject could be represented as, for example, the personality or time of a subject. So, to use one of his examples, the prevention of disease of the rice plant in the Cauvari delta during the dry period is made up of time (dry period), space (Cauvari delta), energy (prevention), matter (disease), and personality (rice plant) (Ranganathan 1967, 12-13). The Classification Research Group approached classification from this same perspective during the middle of the twentieth century. Members of this group suggested different sets of categories, but Mills' proposed Standard Citation Order has received general acceptance (e.g., Bliss Classification Association 2007). However, Ranganthan in his unique style of design research firmly postulated the categories (in a way rationalist), and claimed they existed until proven otherwise – linking the ontological status of his PMEST to a more pragmatic concept of usefulness.

The epistemology, theory, and methodology of this design discourse starts from the assumption of utility based on purpose, not on a rational realism of constantly existing things called categories. When we read Ranganathan, we can see that knowledge of facets is not permanent or fixed. We are told:

> "One may ask 'Why should the Fundamental Ideas [Categories] postulated be five? Why not 3? Why not 6?' It is possible. There is absolute freedom for everybody to try it out. A person may be fond of six. He must classify on the basis of some thousands of assorted articles. If they produce satisfactory results in arranging the subjects of the articles along a line, that postulate may be accepted," (Ranganathan 1967, 398).

This is not a strict rationalist stance, but more of a pragmatic, if not neo-pragmatic epistemic stance and method (cf. Rorty 1982, 1999). Try it, and if it works, if it is useful, don't worry about real or true. For Ranganathan utility was the final judge. His fundamental categories were used to classify in order to save time for the reader.

This interpretation differs from others', but is an attempt to align an implicit epistemic stance with the technique of writing in order to design a system.

2.1.2 Single Source Focus

Another sphere of research present in KO is single source focus. Its tenets look something like this: If we cannot create adequate, let alone good, KO systems *ex nihilo*, we must find the valid evidence for designing such systems. If we find the valid evidence, we have found the key to design, and the problem of representation or ordering documents an easy next step. Scholars in KO have argued for different valid sources: in the macro-social discourse (Hjørland 2002), in the triangulation of documents, decisions (micro-social discourse), and macro-social discourse (Mai 2005), and in requests and users of documents (Fidel 1994; Soergel 1974). Some posit that writers are the best valid source and point to documents themselves as the chief source (Langridge 1989). Still others have looked to philosophy and philosophical texts to pin the valid source of a domain on a larger picture of knowledge (see discussions in Gnoli and Poli 2004). Single source focus commits to identifying *the* source of valid evidence for act of indexing and the act of indexing language design. This is an epistemic stance as well as a description of purpose; that we can know this and it is the job of KO research to investigate this. This is not to say that single source focus research is not revised or rethought. It is often revised, expanded, or jettisoned. But the thrust of the work

is in designing methods where one can look for the single source of valid data for organizing knowledge. Often this design imperative comes from or is inspired by another sphere of research: study.

2.2 Study

In order to inform and understand the ramifications or shortcomings of design, KO researchers have also studied information organization frameworks. They have done this empirically and analytically. The analytical work has examined statements about KO systems, or taken cases at hand in order to make an argument about that case. Wilson's work is an example of this. His argument in his 1968 work demonstrates the limits of our ability to carry out particular types of description and knowledge organization (Wilson 1968). Other examples are surveys and fieldwork. Fieldwork has primarily been idiographic – studying one situation (Jeng 1996; Krarup and Boserup 1982), though some larger studies have been carried out (Šauperl 1999, 2004; Korotikin 1965; Oliver et al., 1966). New systems also elicit empirical study, like social tagging/social bookmarking (where users tag their online content and share it with others in the same tagging system). KO researchers want to know how they compare to familiar structures (Kipp and Campbell 2006), and searching studies figure in here as well (Fidel 1994). Where study is both analytical and empirical in its approach, committing to one family of epistemic commitments, critique, the third sphere of KO, frames its work in the power of language to comment on identity and work politics, and thereby inform study and design.

2.3 Critique

Critique is not a unified sphere, though much of what I see in this sphere is research done in a post-structuralist or critical-theoretic vein. At the forefront of this work are studies on work and identity politics as they interface and shape KO systems. Olson (2002), Beghtol (2002), Bowker and Star (1999), and Furner (2007) are examples of KO thinkers who have looked at the role identity plays in KO systems. Their critiques have asked for designers to expand their conception of the power classification has, and by extension KO systems. Through analysis of texts and an interpretation of social milieu in which KO surfaces, they offer criticism that ask us to rethink out assumptions about the tools we use. The wider social context of identity politics and the often hidden power struggles serve as a yardstick, and reveal how they manifest in the seemingly utilitarian systems we design and study.

Work is also a backdrop on which KO researchers have carried out critique. Bowker and Star's work can fit here as well (1999), along with Day's (2001) analysis of professional work in the post-modern knowledge economy. In this piece Day sees a shift in labor within the context of the shift to an online economy. He explores what happens to the category of knowledge work drawing on Italian Marxist and critic Antonio Negri (1988, 1999, 2000) to further his argument.

Finally, scholars engage in critique when KO seeks to bridge the gap between the assumed canonical texts, contexts, and problems and new inquiries arising out the now every-day need to organize knowledge in order to mediate information overload, help systems interoperate, and localize systems for information management. An example of this type of critique is Campbell's work on analyzing the discourse of the semantic web (2006). In this work Campbell is looking at the discourse and structures that manifest from KO work at the intersection of familiar practices in KO, semantic web development, and emerging social tagging structures and practices. Feinberg (2006) also makes connections using Wilson's (1983) conception of cognitive authority and lays this alongside the discourse of social tagging.

At this point we have a classification that looks like this:

01	Epistemology	017	Acceptable Findings
011	Epistemic Stance		
012	Knowledge Claims	02	Theory
013	Assertions about Reality	021	Committed
014	Our Ability to Know Reality	022	Uncommitted
015	What Knowledge of Reality Means	023	Nomothetic
016	Acceptable Sources of Evidence in	024	Idiographic
	Creating Knowledge	025	Propositions

026	Constructs	05	Study
027	Narrative	051	Analytical Study
0271	Creation Narratives	052	Empirical Study
0272	Shift Narratives		
0273	Denouncement Narratives	06	Critique
		061	Critical Theory and Post-Structuralist Critique
03	Methodology		
031	Techniques	0611	Identity in KO
032	Contingencies to Epistemology	0612	Work and Labor in KO
04	Design	062	Discourse Analysis at Interstices of KO and Cognate Research
041	Contingencies to Epistemology		

This classification is provisional, incomplete, and over-simplified. It is offered here as an outline for reflection on KO. Further refinement is required. However, as a cadre of concepts drawn from KO, I believe it does begin to provide an overarching perspective on this research landscape. As a framework it might serve as a point of comparison with regard to similar problem spaces emerging in the context of ubiquitous and driving desire to organize information in order to get by in the today's world. I hope it is the first small link in a chain connecting the many disciplines in this problem space.

3 Elenchus in KO

An elenchus is a chain. It is the Latin form of the Greek word elenchos, and is used in some scholarship for Socrates' method of questioning in order to elicit the truth. Given the architecture of epistemology, theory, and methodology described above, and the spheres of research in KO, we can talk about the connection between these (minimally) six and the variety of approaches to the problem of organizing knowledge. The components of this elenchus are not anything unique to KO, but the characteristics and outcomes of our research are. And research on organizing information has blossomed with the advent of the almost ubiquitous presence of digital information creation, dissemination, and storage systems. With this comes the problem of organizing information, and we are now in a multidisciplinary environment, of which KO is only one discipline of many approaching this problem. For example many of the best minds in philosophy and biology are turning their attention to ontology engineering, and crafting research which appears similar to KO work, but when compared against the classification above demonstrates a starkly different perspective with regard to common epistemic stances in KO and as a result the theories and methods applied to the problem of organizing knowledge about genes and cells (Smith 2005).

Our elenchus is unique, and by acknowledging what is and what it is not, we can see how our work interfaces with myriad research initiatives and the legion of new techniques, tools, and systems of organization. In so doing we can offer our special approach to these problems. We are working in a time that requires us to organize knowledge organization. As a consequence I believe we are necessarily comparativists. I hope this preliminary work helps those interested in exploring comparative work.

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