

Constructs in Knowledge Organization Systems: Rhythm in Time, Intention, and Form¹

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Introduction and the Descriptive Turn

In the context of the International Society for Knowledge Organization, we often consider knowledge organization systems to comprise catalogues, thesauri, and bibliothecal classification schemes – schemes for library arrangement. In recent years we have added ontologies and folksonomies to our sphere of study. In all of these cases it seems we are concerned with improving access to information. We want a *good* system.

And much of the literature from the late 19th into the late 20th century took that as their goal – to analyze the world of knowledge and the structures of representing it as its objects of study; again, with the ethos for creating a *good* system. In most cases this meant we had to be *correct* in our assertions about the universe of knowledge and the relationships that obtain between its constituent parts. As a result much of the literature of knowledge organization is *prescriptive* – instructing designers and professionals how to build or use the schemes *correctly* – that is to maximize redundant success in accessing information.

In 2005, there was a turn in some of the knowledge organization literature. It has been called the *descriptive turn*. This is in relation to the otherwise prescriptive efforts of researchers in KO. And it is the descriptive turn that makes me think of context, languages, and cultures in knowledge organization—the theme of this year's conference.

Work in the descriptive turn questions the basic assumptions about what we want to do when we create, implement, maintain, and evaluate knowledge organization systems. Following on these assumptions researchers have examined a wider range of systems and question the motivations behind system design. Online websites that allow users to curate their own collections are one such addition, for example Pinterest (cf., Feinberg, 2011). However, researchers have also looked back at other lineages of organizing to compare forms and functions. For example, encyclopedias, catalogues raisonnés, archival description, and winter counts designed and used by Native Americans.

In this case of online curated collections, Melanie Feinberg has started to examine the *craft of curation*, as she calls it. In this line of research purpose, voice, and

¹ This paper is based off of a keynote address given at the 2013 ISKO-France conference in Paris. I would like to thank Widad Mustafa El Hadi, Michèle Hudon, and separately the board for inviting me to discuss my ideas with *francophonie*. I have tried to lay out some of my ideas, translated into French, in *Études de communication* 39. I build on that work in this paper.

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rhetorical stance surface as design considerations. For example, in the case of the Pinterest, users are able and encouraged to create boards. The process of putting together these boards is an act of *curation* in contemporary terminology. It is describing this craft that comes from the descriptive turn in KO.

In the second case, when researchers in the descriptive turn look back at older and varied examples of knowledge organization systems, we are looking for a full inventory of intent and inspiration for future design. Encyclopedias, catalogues raisonnés, archival description, and works of knowledge organization in other cultures provide a rich world for the descriptive turn. And researchers have availed themselves of this.

Hur-li Lee at the University of Wisconsin-Milwaukee has presented to the Anglophone world insight into the imperial Chinese form of bibliographic classification. In doing so she has begun to open our eyes and minds to the intention, forms, and contexts of classification and organization.

Below we see the broad classes of the *Seven Epitomes*. This imperial classification was based on Confucian (Classicist) conventions. This is philosophically particular and complex.

Epitome (Class)	Object of concern
Six Arts	The supreme wisdom (i.e. <i>dao</i>)
Masters	[Fragmented approaches to] the supreme wisdom
Lyrics & Rhapsodies	[Poetic writings connecting to] the supreme wisdom
Military Texts	Military affairs
Divination & Numbers	Divination
Formulae & Techniques	Medicine and personal hygiene

Table II.
Objects of concern by
class in the *Seven Epitomes*

An analysis of the Seven Epitomes from Lee (2012).

The first hint of this can be found in the relationship between the name of the system and the number of main classes. There are only six classes in the *Seven Epitomes*. From this observation about naming, the extension of the classes (that is what is present and what constitutes an example of that class) we see we have much to *describe* before we can say whether or not this is a *good* classification scheme.

In the context of Native American communities, both contemporary and historical, we have equally complex systems. The winter counts, among a myriad other instruments of recordkeeping, are forms of knowledge organization systems. Cheryl Metoyer works with these and other forms of native ways of knowing (Metoyer, 2010). Ann Doyle also works with the cultural interface to describe how native designers and native students interact with classification (Doyle, 2013). And again, the descriptive turn allows us to ask about context and purpose *before* we evaluate and before we assume particulars.

Philosophy and KOS

And with this kind of research we can return to our traditional forms of knowledge organization and ask about their philosophical grounding and how that affects our creation, implementation, and evaluation of them. S. R. Ranganathan is the author of some 60 books and 2000 research papers. His name is synonymous with facet analysis, and he is characterized by Birger Hjørland as a *rationalist*. And here we see where philosophy and knowledge organization are intimately related. Further, we see how the descriptive turn can help us understand our work in knowledge organization.

Hjørland analyzes Ranganathan's work for its philosophical perspective. This is important, because Hjørland situates the ability to evaluate a knowledge organization system in a committed, and correct, philosophical stance (Hjørland, 2004). The substance of Hjørland's argument is that facet analysis is biased because it does not rely on testing its assumptions of subjects and the relationships between subjects. It also implies that facets persist indefinitely.

I have argued against Hjørland for both of these points. I claim he is a *postulational rationalist* at the least (Tennis, 2008). Which provides us room to evaluate schemes built on facet analysis differently from Hjørland's route. Important in this distinction is the real fact that we must account for revisions to our systems.

If we follow Hjørland, and following him strictly, then we have to guarantee our subjects (or parts of subjects) are eternal and do not require empirical verification. There is an onus on the designer and the system to *never be wrong*. And many of us are uncomfortable with this philosophical stance because we have seen schemes change. And if things change, then we cannot use something that is purely and only rationalist. We could not justify the effort.

Casting facet analysis as a postulational rationalist stance allows us to use facet analysis in a contextualized way, guided by a particular purpose and intent, and situated in a particular time. There is no need to be eternally right in this latter case. And rather than commit to an action in a naïve way, we can move forward with design, implementation, maintenance, and evaluation with intention.

It is this recontextualization, of facet analysis, borne of thinking drawn from the descriptive turn that compels me to look at time, intentionality, and forms in knowledge organization. For it is in these three things that we can ask philosophical questions that have practical implications in our instruction and implementation of systems. And in doing this we also learn about knowledge organization itself in a *liberal* way, free from practice.

I should say that my work is work that results in *constructs* – that is new conceptualizations of analysis for KOS. These conceptualizations can be used to do

The second set of data were gathered using Z39.50 protocol, harvesting MARC records from 572 catalogues that both (1) used EUGENICS as a first subject heading (in the 650 field of the MARC record, the subject added entry for topics) (Library of Congress, 2007), and (2) used the DDC in the 082 field of the MARC record. After removing duplicate records we were left with 477 records. These records are evidence of cataloguer decision-making. We are now able to compare the data gathered from the editions and the data gathered from the Z39.50 protocol, and begin to make some statements about how scheme change effects cataloguing (see Figure 2).

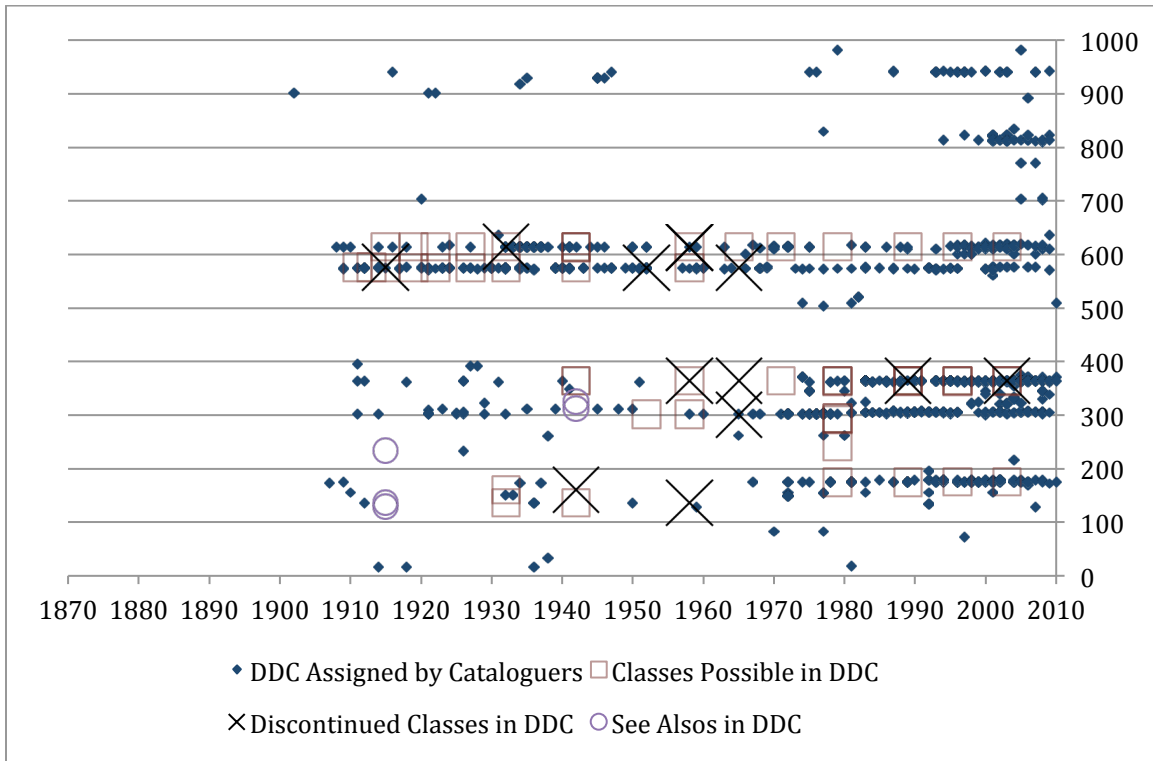


Figure 2 Possible Classes and in the DDC from 1911-2004 for the topic EUGENICS with unique cataloguer decisions marked

Figure 3 below is a visualization that illustrates the degree of agreement among cataloguers. The larger the circle the more books were classed identically. This is provided only to give us a sense of the level of agreement and possible to show us outliers, that is unique decisions that are unique in placement in the scheme, but also in that no one else, or almost no one else classed the same book in the same place.

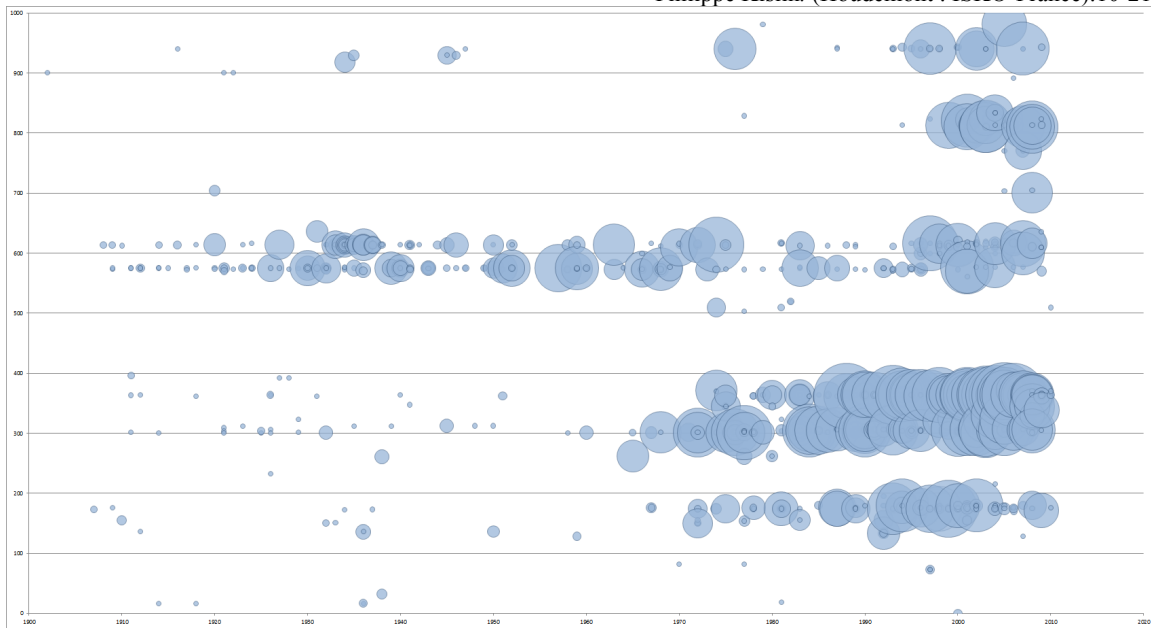


Figure 3 Density of agreement among cataloguers classing books in DDC from 1911-2004 for the topic EUGENICS

This empirical work resulted in some theorizing about subjects, and subject classification. For example, how do these findings relate to Langridge's conception of subjects (Tennis, 2013a)? I also was able, through this research and supporting literature reviews, to identify at least three metaphors of time in information systems. I presented those at CoLIS this summer (Tennis, 2013b). That is, I was able to ascertain that when we consider the temporal context of our KOS we have a range of views to choose from with regard to the permanence of our work, the directionality, speed, and impact of semantics on our work, and the integrity of classes in schemes. If all of these are variable, then we must also consider our intentions when we design and implement KOS.

Intentions and intentionality are tacit and implied our textbook literature of knowledge organization. We assume access is, if not unproblematic, a well-understood problem. I do not argue with this, *per se*. However, given the issue of change and temporal context in KOS, we must ask what our intentions were and what they can be with regard to creating *correct vs. useful* KOS. These are two operationalizations of *good* KO.

I took some time in *Études* to discuss this issue. There I was especially concerned with intention at the intersection of language and action, two of the major components of any knowledge organization system. Toward the end of that paper I argue we need an antifoundationalist stance on KOS. And I arrive at that point because of the philosophical and practical implications of adopting a foundationalist stance to language and action. To quote that part:

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“For foundationalist thinkers, intentionality is not required of the KO researcher to consider. For them we can see the reality of concepts and we can faithfully represent those concepts in our KOS, “and intention is elided because we are simply offering up reality. We do not intend to do anything but that, so there is no need to persevere on actions. All of the weight is in language, whereas the antifoundationalist sees weight in the actions – specifically ethical actions,” (Tennis, 2012b).

And it is these ethical actions that constitute the forms of knowledge organization which is my last topic.

Simply because we have intention does not mean anything manifests. We have to make that visible. The process of knowledge organization makes visible otherwise assumed or invisible names and relationships. These names, relationships, and categories are forms.

Elsewhere I have looked at feminist stances in relation to hierarchy and the intentionality manifest in these forms (Tennis, 2012c; Tennis 2012d). Forms make visible what is otherwise invisible. Recognizing that we have agency in this creation we have an ethical mandate that comes with it. When we discuss the context, language, and culture of KO we are concerned with how we know what to manifest (make visible), and once it is manifest whether it is useful in organizing knowledge.

As mentioned before, historically we thought that if the representation written into the forms of knowledge organization systems were correct, then it would be the most useful, (cf., Richardson, 1901; Hjørland, 2002). However, since the introduction of both the linguistic turn as well as poststructuralist and allied thinking into knowledge organization, we no longer agree as to what is correct. This is because we now realize that our assertions of what is correct is conditioned by our language and our perspectives as men, women, white, black, indigenous, etc. Further, we have received an ethical mandate that goes with this recognition of our dependence on language and context. This means whatever epistemic stance we take should reduce harm, rather than increase it.

Therefore in this context the construct of form is helpful to us in our evaluation of our work. We must concern ourselves with a new definition of useful specifically in regard to knowledge organization systems. We must ask: What do we give form to? How do we know what is useful? It is the forms we create and use that allow us to reflect on our intention in the context of time, context, language, and culture. And it is this that we must focus on a philosophical level so that we might take practical action – action with integrity.

Concluding Remarks

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If we take KOS as part of our object of study, and if we take one of the purposes of KO to be to make *good* systems, we are compelled to reflect at the philosophical level on our intentions. And our intentions manifest in a particular contexts, for particular purposes, and at particular times.

We need a set of constructs to help us compare across these, and to clarify our thinking. In this talk I have presented a few constructs useful to me in conceptualizing our work at a philosophical level. We build them for society to use, and we must act with intention.

And because of this we cannot think we are building an edifice that will last forever, and have no need for revision. We will have to scaffold our KOS – and this is a good thing. We'll renegotiate the contract we have with our users and our domain. And with a focus on intention we will better understand the role of language, context, and culture in knowledge organization and knowledge organization systems.

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