

# Book Review

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*Cultural Frames of Knowledge*, ed. by Richard P. Smiraglia and Hur-li Lee. Würzburg: Ergon Verlag, 2012. 153 p. ISBN 978-3-89913-918-1, price: 25.36 US\$ (32 Euro); *Theories of Information, Communication and Knowledge: A Multidisciplinary Approach*, ed. by Fidelia Ibekwe-SanJuan and Thomas M Dousa. Berlin: Springer, 2014. 331 p. ISBN 978-94-007-6973-1, price: 139 US\$.

Let me start by saying that each of these books should be read by everyone in the field of knowledge organization. They each gather an impressive cast of scholars to investigate key issues in the field. This essay can only tease out some of the key themes.

It is ironic perhaps that a field that spends much of its time worrying about how KOSs can cope with the terminological ambiguity in the world and often assumes that terminological ambiguity is manageable within domains, has itself failed to clarify the meaning of its own core terminology. Each book (among other things) moves us toward clarity in terminology, though the path is rocky.

## 1.0 The Meaning of “Information”

The Ibekwe-San Juan and Dousa volume (hereafter ISD) focuses on the meaning of ‘information.’ Different authors provide different perspectives on this contested term. Cornelius notes that theories of information are frequently created and generally ignored in the field; yet research seems to carry on quite well without a shared understanding of the term. However, both Hjørland in this volume, and Smiraglia in the volume he co-edits with Lee (hereafter SL), aver that a field should understand the meanings of its core terminology. They thus echo the view of the editorial introduction to the first ever issue of this journal, recently reprinted, that space in the journal be devoted to a “terminology corner” that would “collect the terms used along with their definitions, thus ensuring that they can be especially judged for correctness” (“Gems” 2014, 466).

ISD highlights the fact that ‘information’ remains a contested term. Hjørland – who is more concerned here with defining the field than the word—suggests a way out of this conundrum: we might, as a field, focus on organizing ‘documents’ rather than ‘information’ (or indeed ‘knowledge’).

‘Documents’ is a term that we can more easily achieve agreement on. Having long favored myself the use of basic terms with shared understandings—which are usually terms that reflect things or processes that we can readily observe in the world—in our classificatory efforts, I might be inclined to agree. But unfortunately documents are just a means to an end: users only rarely desire a document for its own sake but rather pursue the ideas within. We should not lose sight as a field of the fact that we are generally trying to guide users to the ideas or “statements” contained within documents.

Cornelius takes the view that the purpose of defining ‘information’ is to aid information professionals in their work: “On this view, information is construed not as ‘the final retrieved objects in any enquiry’ but rather as ‘the logic that determines what type of statement would constitute an answer to the enquiry’ in question” (202). ‘Statements’ is a term that is perhaps less ambiguous than ‘information’ but more ambiguous than ‘documents.’ The critical thinking literature has usefully identified different types of statement: assumptions, conclusions, evidence, and many more. Our users are primarily interested in the conclusions of a work. They will then generally wish to evaluate the conclusions in light of the evidence and supporting argument provided. These are then the sorts of ‘statement’ (and thus ‘information’) that we should strive to identify when classifying a document.

As for the form of “statements” Dousa’s account in ISD of the work of Kaiser early in the last century is very useful here. Kaiser was one of many at the time seeking to index statements within documents. It should be recognized that Kaiser employed ‘statement’ in a more general sense than that described above: he saw statements as combinations of terms useful for the classification of the information within a text (Dousa does appreciate that there is a grammatical format to Kaiser’s statements; 312). The two key elements of Kaiser’s ‘statements’ were things (termed “concretes”) and processes (with a third element of places). Ibekwe-SanJuan and Dousa in their introduction connect Kaiser’s approach to several of the theoretical articles in ISD, as well as to Labour’s discussion of how to identify information units within films.

Furner and Floridi in ISD both discuss three attributes of information identified previously by Floridi (which

Cornelius doubts are of much practical use in our field). The first is “meaningfulness.” Though this term itself is contested, my sense would be that a statement has meaning for a user to the degree that it says something significant about something that the user has some interest in (where significant may mean novel or well-said, or surprising, or just reconfirming the user’s beliefs). The second, “data-ness” seems to imply that there is some justification for the statement (it also signals that a statement can be differentiated from others). The third, “well-formedness” implies that a statement is clear and comprehensible. If we accept the argument of the previous paragraph that we are trying to guide users to the ideas contained within documents, then the implication of this paragraph is that our focus should be on statements that are clear, are clearly about some thing or process, and are justified in some way.

Several authors debate the degree to which ‘truthfulness’ is also a necessary component of “information.” (I might note that “knowledge” is occasionally defined as “true information,” and so the field of knowledge organization can hardly escape the question of truthfulness.) Yet the one thing that almost all philosophers of science agree on is that we cannot prove or disprove any scientific statement. We can compile evidence and argument in favor of certain hypotheses in order to approach complete confidence, but there is always some potential counter-argument (however convoluted) with which one can dismiss the body of argument and evidence (as creationists and global warming deniers know all too well, though they generally fail to admit that this is simply a fact of life across the scholarly enterprise). So if we were to define “information” as “that which we know to be true,” we would have very little knowledge or information to organize.

We have avoided this fate by focusing as a field on terminology such as ‘relevance’ rather than ‘truthfulness.’ We have thus implicitly appreciated that there are degrees of truthfulness but that absolute truthfulness is beyond humanity’s reach. Yet we have not fully appreciated that an important dimension of relevance—subsidiary only perhaps to “what conclusions does a work reach?”—is what evidence is provided in a work for the conclusions proffered. Scholars particularly, but general users also, want to know how confident they should be in a particular line of argument. It is not the place of classificationists or classifiers to judge the ‘truthfulness’ of a statement. This is a job for users. We can and should, though, design our KOS’s to aid them in this task. We thus need (only) to know what sort of considerations inform user decisions about how much confidence to place in a particular result.

How can we aid users in determining relevance? I would suggest that we can best and perhaps only do so by indicating the theories, methods, data, and perhaps philosophical and rhetorical approach of a particular work. Users with

strong theoretical or methodological preferences can be spared the indignity of reading works from alternative perspectives. Users that appreciate that the best evidence for any hypothesis comes from juxtaposing different theoretical, methodological, and other perspectives can instead search for diverse approaches to a particular issue.

Zhang and Lee in SL discuss “genre.” They argue that this is now considered to reflect not just form but also situation. They also urge us to investigate genre within documents rather than just across documents. They identify empirically 41 key “functional units” of scholarly articles. Different disciplines place greater emphasis on some of these than others. Notably, two of the four categories into which they divide these 41 functional units are “methods” and “results.” The “introduction” section devotes attention to developing theoretical hypotheses. Both “introduction” and “discussion” serve mainly to elucidate the author’s motivations and articulate the article’s place in the scholarly conversation. The analysis of Zhang and Lee might be taken, then, as supportive of the idea that we should capture in subject headings for a document its results/conclusions, theory/hypotheses, methods, and elements of perspective and place in the scholarly enterprise.

Friedman in SL reviews semiotic analysis of “information” (among other things). Several authors in ISD also address semiotics. Buckland had used semiotics to distinguish document and information. Raber and Budd suggested we eschew ‘information’ for discussion of signifier and sign. Baiba found that “a document may have different representations depending upon the information it contains” (132). Though Friedman stresses that different authors have drawn upon semiotics to make quite different arguments within knowledge organization, many of these authors appear to support the idea of stressing both “documents” and the “statements” within these.

Both SL and ISD thus give theoretical support for the idea of classifying documents in terms of key statements. They both point to how this might be done. It can be hoped that these insights will be increasingly reflected in knowledge organization practice.

## 2.0 The Meaning of “Domain”

Smiraglia in SL addresses another key term in the field, “domain.” He notes that the term “domain” is not well defined in the knowledge organization literature. It is often assumed to be equivalent to discipline. But in fact the definition of domain is internal to the field of knowledge organization: “A domain is best understood as a unit of analysis for the construction of a KOS” (114). Domains should share an epistemology and ontology, and also share a culture and understanding of concepts. Importantly, Smiraglia stresses that “domain” is actually a matter of degree,

and thus of judgment: “The closer the agreement the higher the degree of ‘domain’ accordance” (113). A certain group, or the body of documents they produce, can thus be considered to be a domain if there is ‘enough’ shared understanding for the purpose of classification.

If we define “domain” in this way, then it becomes tautologically true that the field of knowledge organization should limit itself to domain analysis. It would make no sense to seek a common classification if there were not “enough” commonality in understanding. But the empirical question remains of exactly when enough ‘agreement’ exists for the purposes of a particular KOS.

In the introduction to SL, Smiraglia argues that the field of knowledge organization is increasingly empirical. He provides evidence of many types of empirical exploration. But where, I wonder, is the empirical exploration of “domain-ness.” How do we know what is the appropriate size of a domain? The equation of the term “domain” with the term “discipline” or “field” is a convention rather than an empirically established relationship. In an increasingly interdisciplinary academy we must avoid as a field assuming that we cannot easily facilitate cross-disciplinary explorations. (Smiraglia lauds both interdisciplinarity and domain analysis.) There is, in particular, no empirical evidence that I am aware of within the field of knowledge organization that a general classification employing similar terminology and structure across all fields is infeasible (but growing evidence from efforts to do precisely that that it is indeed feasible). “Evidence” from outside our field – from philosophy, literary theory, or even cultural anthropology—is occasionally cited but of course empirical conclusions about what is possible within knowledge organization should be primarily justified in terms of empirical investigation within knowledge organization.

Sadly, Smiraglia notes that domain analysis is more often urged than practiced. Excepting one special issue there have only been a handful of applications of domain analysis ever published in this journal, and the bulk of domain analyses found elsewhere pursue citation analysis (in order to identify domains) rather than any sort of epistemological investigation. This is a shame, for domain analysis can usefully inform not just domain-specific classification but likely general classifications as well.

Smiraglia celebrates the freedom that now characterizes the field to do domain analysis rather than focus only on general classifications. We should relish this freedom. But we should of course ensure that the pendulum not swing too far. We should (symmetrically) treasure the freedom to develop general classifications rather than be limited to only domain analysis.

### 3.0 Philosophical Reflections

ISD, and especially SL, speak to far more than just terminological issues. Smiraglia and Lee’s concluding chapter in SL stresses the postmodern orientation of most of the contributors to his volume, and perhaps the field as a whole. Leaving aside the dangers of associating the field with any one philosophical outlook (see the discussion of pluralism below), I would urge us to reflect on the type of postmodernists we should (most of us, anyway) be. If we accept that knowledge organization serves an important role in social life, then we are guided to pursue what Rosenau (1992) has described as “affirmative postmodernism” (which she contrasted with “skeptical postmodernism”). Skeptical postmodernists doubt the very possibility of enhanced human understanding; for them scholarship—and thus by extension knowledge organization—is just a game. Affirmative postmodernists instead recognize many biases within the scholarly enterprise but urge efforts to transcend these. The field of knowledge organization should value critique but not reify the act of critique; we should seek always to identify solutions to bias and especially abuse of power. I have elsewhere (Szostak 2007) outlined a set of postmodern attitudes appropriate to interdisciplinary inquiry and would recommend these also to the field of knowledge organization: proof and disproof are impossible but it is possible to increase our confidence in any statement by compiling diverse arguments and evidence; bias is endemic but science/scholarship is neither perfect nor impossible; all scholars should reflect on their biases; there is an external reality, though humans are limited in their ability to perceive this (a view recently pursued by John Budd in this journal); language is inherently ambiguous but there are strategies for reducing ambiguity; the world is characterized by open systems (that is, the phenomena studied by different disciplines influence each other), but causal regularities may still be identified among distinct phenomena; there are multiple standards by which statements can be evaluated; and it is possible to integrate across disciplines or cultures. These attitudes, I should note, are useful directly in our own scholarly practice, and indirectly in providing an understanding of the scholarship we aspire to classify.

At least some of these “Golden Mean” philosophical attitudes are exemplified by authors in both volumes under review. In particular, Ibekwe-SanJuan and Dousa recognize in their introduction to ISD that each of the four authors who seek a cross-disciplinary understanding of ‘information’ (Floridi, Nöth, Hofkirchner, and Brier), and most of the authors in the volume overall, recognize both some scope for constructivism in our understanding of information, but also that reality places limits on construction (while Leleu-Merviel appreciates that we can

share constructions of visual images). The editors urge greater efforts in the field to link objective and subjective understandings.

Cornelius (in ISD) worries that increased access to information has not obviously led to better decision-making in the world. This is an observation that merits considerable reflection in our field. But I would very much warn against the possibly pessimistic outcome of such reflection: we should not abandon efforts to organize knowledge because we doubt that it does any good. We should first of all question the casual empiricism at the heart of Cornelius's remark: while the world we live in certainly is characterized by injustice, misfortune, and many bad decisions, it is also characterized by many good outcomes and many good decisions (Szostak 2012). We should not be so enamored of perfection that we fail to appreciate that a world where 37% of decisions are good rather than just 36% is worth fighting for. And most importantly we should recognize that increased access to a mass of disorganized information is more likely to bewilder and depress than inform and stimulate. Only if our knowledge is well organized can we expect dramatic improvement in human decision-making. We should not assume away the possibility of such an outcome. Hjørland (in ISD) usefully reminds us that the purpose of knowledge organization is to help users find (documents containing) information which in turn will aid human progress and improvement.

Smiraglia's introduction to SL surveys the theories of knowledge organization associated with Dahlberg, Hjørland, Svenonius, and Wilson. Wilson identified two key activities (he called them "powers;" Smiraglia suggests "dimensions"): the "descriptive" activity by which humans attempt to organize our accumulated understandings not just in classification schemes but in encyclopedias and textbooks; and the "exploitative" activity by which humans attempt to develop new understandings. Wilson appreciated that any novel understanding must be a novel combination of existing understandings (an idea with much in common with the literatures on "serendipity" or "literature-based discovery"). For Wilson the key concept is "efficacy," the degree to which our descriptive activities facilitate exploitative activities. How can we enhance efficacy? Hjørland in SL also stresses "exploitation" but suggests that a document's exploitative potential reflects the purposes for which it was written. Yet the history of science literature, and the serendipity and literature-based discovery literatures, all note that documents often have impacts their authors never imagined. Rather than focus on the origins of a document, we should stress the sort of statements emphasized above when classifying it.

Neelameghan and Raghavan argue (in SL) that "The similarity of concepts in Indic cultures and art forms cut-

ting across domains" inspired Ranganathan (51). Though the authors hypothesize that this is a peculiarity of Indian culture, it could well be that cross-domain conceptual understandings are more generally possible. It would be highly useful to see more empirical explorations along these lines.

#### 4.0 The Advantages and Dangers of Pluralism

Both volumes can be applauded for a pluralistic approach. Though some of the individual authors may advance their views as of singular importance the general thrust of both volumes is to see advantages in looking at issues from multiple (philosophical or cultural) perspectives. Special note might be made here of the chapter by Fox and Olson in SL on feminist epistemologies: they describe three distinct types of feminist epistemology and how each might approach key questions in knowledge organization, concluding that each has something to say. Most importantly, while the three perspectives operate at different points along the objectivity/subjectivity continuum their insights are potentially complementary. Martinez-Avila's chapter on Foucauldian discourse analysis also (perhaps inevitably, given Foucault's "refusal to establish rules" (100)) also stresses plurality.

I am a big believer in pluralism (Szostak 2015). But the danger is that we become so celebratory of diversity that we never reach any strong conclusions about anything. As a scholar of interdisciplinarity I believe that we can and should harness diversity to the development of comprehensive understandings that are holistic but nuanced (Repko 2012). That is, we should seek to synthesize the best insights from diverse perspectives. This is a project that is shared explicitly by Brier and Hofkirchner, but eschewed by Nöth, Robinson and Bawden, and Furner in ISD, each of whom, in their own way, operates with a notion of irreducible pluralism.

#### 5.0 Concluding Thoughts

I have elsewhere (Szostak 2014) worried about the dangers of excess skepticism in classificatory practice. We may also at times be too skeptical about the contours of our field. Though consensus on the meaning of "information" (and by implication "knowledge") may still elude us (though there is progress there), there is scope for broad agreement on the nature of "documents" and the types of "statements" within these that we could aspire to classify. If we accept a definition of domain as "where there is enough agreement for classificatory purposes," then a clear empirical project of establishing degrees of domain-ness relevant for different classificatory projects beckons. We should most of all be affirmative in outlook,

confident both that we can better organize human understandings and that this is a very important thing to do.

I applaud the editors of these two volumes for advancing our discourse.

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