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On Sameness and Difference

An Editorial

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1. What *is?*

Many of us equate the principle activity of knowledge organization with that of ontology, which at its essence is the revelation of the structure of a domain. Among the essential choices that must be made in the construction of ontology are those involving "IsA" relationships. "What *is a*" is the primary question that defines what belongs inside a set and what, therefore, does not. Employing Dahlberg's concept-theoretic is one approach to defining the elements that belong in a set, although there are many other approaches as well. Whatever method is used, once a set is constituted its members will be considered to be like each other in some way, in other words, they are thought to be the same in some manner, or to some degree. Which leads naturally to the question of how alike must two entities be to be declared the same? Or its correlate, how dissimilar must they be to be declared different?

Pondering this question led me to think about musical works that are of the genre "variations on a theme by X." In such works a composer uses a musical mnemonic—a melody usually—to draw listeners into the aural experience, and then, subsequent iterations all contain this original mnemonic but surround it or manipulate it in various ways. The result is always iterative but never boring because each iteration is subtly (or not so subtly) different from the last. And the technique allows the character of the original to be explored fully as well as for it to be reinterpreted by the current composer. In the end it is not so unlike, although a lot more interesting than, multiple citations by an author of another's works— say, like the way each time I cite Patrick Wilson it comes out a little differently. Same but different.

Sameness and difference turn out to be essential philosophical positions. Many of the philosophical points of view brought to bear on knowledge organization suggest one or more points of view about this essential question. Semiotics (for example) suggests that signs are always being interpreted anew, phenomenology suggests entities might appear differently as a matter of their individual perception. All points of view are useful because they all shed light on formerly dark corners of the essential questions in knowledge organization.

2. Collocation versus disambiguation

Of course, the practical reality is that systems must accommodate dual purposes when they declare entities to be the same or different. We wish at once to collocate or draw together everything that is alike, and at the same time to disambiguate the collocated set. So, the tension between the two purposes holds every system in balance. A set of collocated entities is thought to contain entities that are the same to some degree, but different enough to require an approach to sorting the elements of the set. It reminds me again of Wilson, who said of relevance that sometimes people just want something that serves as a means to some end. What does that suggest about sameness and difference? Perhaps that "more or less the same" or "a little bit different" reveals a sort of fuzzy-set, which opens the brackets around the set of equivalent entities that have been collocated. If so, then it means all the more that the differences, no matter how slight, need to be accounted for in the disambiguation.

Of course there is quite a lot of overlap among domains, especially among closely related domains. We can see that in the articles in the present issue of this journal. We have papers that have come from at least three domains, and yet they all treat of knowledge and its conceptual ordering. Yet there is little

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conformity among the works cited by these four papers. What does that tell us? Perhaps that different domains are a little bit the same?

3. A New Perspective: Theme and Variations

In musicology there is a factual reality that every sound you hear can be reduced to a sort of calculus that expresses its tonal and metrical relationships. Schenkerian analysis (Forte and Gilbert 1982) is one approach to this. In the end it reveals a singular truth, which is that music (like information) is essentially an ordered accretion of energy. The beauty of this type of analysis is what it reveals when large quantities of music are analyzed—it reveals sets of similarities that might never have been noticed otherwise. The music information retrieval domain has built its technology and its science along these lines.

So where does this leave knowledge organization? In the semantic Web and the magical kingdoms that will follow it, it will be necessary to make sameness-difference decisions of a different sort, to provide the ability to make heretofore unimaginable connections. Elsewhere I have asked when a funeral urn is like a ship's log: the answer is when the instantiation set has the same calculus in its scope, which tells us

that the two artifacts have approximately equal impact factors along some cultural or social trajectory. These are the sorts of questions knowledge organization can be able to answer if we can move toward a large base of empirical evidence to which similarity measures can be applied and from which new hypotheses can be drawn to direct investigation. Why have these questions not yet been answered? Because they have not yet been posed.

References

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