

A third and final consideration for knowledge organization is the distinction made between classification and categorization. Jacob (2004, 15) contrasted classification with categorization and defined “classification” in a restricted way that does not account for Ereshefsky’s “three general philosophical schools [of classification] [...]: essentialism, cluster analysis, and historical classification.” Although Jacob claims that Ereshefsky misuses the term “classification”, thus confusing “classification” and “categorization,” we might ask for textual evidence showing that Ereshefsky’s terminology is faulty. My own feeling is that it is not.

Conclusion

Ereshefsky (2000) has been cited once in this journal. The citation concludes (Gnoli 2006, 144):

To summarize what we have seen in various domains, classification can be based on two major principles: similarity, and common origin.

Gnoli here seems to have overlooked the fact that Ereshefsky (2000) discusses three major principles: logical division based on essential characteristics, cluster analysis based on similarity measurement and historical classification based on common ancestors. (He has also overlooked that Hjørland (1998 and 2003) discusses four major principles of classification based on, respectively, empiricism, rationalism, historicism and pragmatism.)

I believe that Ereshefsky’s book has much to offer to KO and that we really need to consider the literature of scientific classifications.

References

- Broadfield, A. 1946. *The philosophy of classification*. London: Grafton.
- Cooper, Rachel. 2005. *Classifying madness: A philosophical examination of the diagnostic and statistical manual of mental disorders*. Berlin: Springer.
- Ereshefsky, Marc. 2000. *The poverty of the Linnaean hierarchy: a philosophical study of biological taxonomy*. Cambridge: Cambridge University Press.
- Fleck, Ludwik. 1979. *Genesis and development of a scientific fact*. Chicago: University of Chicago Press. (German original 1935).
- Gnoli, Claudio. 2006. Phylogenetic classification. *Knowledge organization* 33: 138–52.
- Hjørland, Birger. 1998. The classification of psychology: a case study in the classification of a knowledge field. *Knowledge organization* 24: 162–201.
- Hjørland, Birger. 2003. Fundamentals of knowledge organization. *Knowledge organization* 30: 87–111.
- Jacob, Elin K. 2004. Classification and categorization: a difference that makes a difference. *Library trends* 52(3): 515–540.
- Mai, Jens-Erik. 2004. Classification in context: relativity, reality, and representation. *Knowledge organization* 31: 39–48.
- Mayr, Ernst. 1997. *This is biology. the science of the living world*. Cambridge, Mass.; London: Belknap Press of Harvard University Press.
- Müller-Wille, Staffan. 2007. Collection and collation: theory and practice of Linnaean botany. *Studies in history and philosophy of science part c: studies in history and philosophy of biological and biomedical sciences* 38: 541–62.
- Schuh, Randall T. 2003. The Linnaean system and its 250-year persistence. *Botanical review* 69: 59–78.
- Vickery, B. C. 1960. *Faceted classification: a guide to the construction and use of special schemes*. London: ASLIB.
- Professor Birger Hjørland, Royal School of Library and Information Science, DK-2300 Copenhagen S, bh@db.dk
- Rachel Cooper. *Classifying Madness: A Philosophical Examination of the Diagnostic and Statistical Manual of Mental Disorders*. Berlin: Springer, 2005. vii, 172 p. (Philosophy and Medicine, vol. 86). ISBN: 978-1-4020-3344-5 (hbk.). (Also available as electronic “Kindle” book from Amazon.com).

The author, Rachel Cooper, Senior Lecturer at Lancaster University, holds a Ph.D. in History and Philosophy of Science from Cambridge University. The title of her thesis is also *Classifying Madness*.

Classifying Madness: A Philosophical Examination of the Diagnostic and Statistical Manual of Mental Disorders concerns a particular classification system for mental disorders, the DSM, published by the American Psychiatric Association. The DSM is the classification system used most often in diagnosing mental disorders in the United States. Although the International Classification of Diseases (ICD) is a commonly-used alternative outside the U.S., the DSM still holds immense weight internationally. Today, the DSM has almost the status as a bible within

the psychiatric community and has been used to challenge the pervasive criticism that psychiatric diagnoses are unreliable and invalid. The first edition (DSM-I) was published in 1952. The DSM-II was published in 1968, the DSM-III in 1980 and the DSM-III-R as a revision in 1986. The current fourth edition, the DSM-IV was first published in 1994. A text revision known as DSM-IV-TR appeared in 2000. Work on a new fifth edition is underway.

Rachel Cooper structures the bulk of her argument in five parts: (1) What is Mental Disorder?, (2) Are Mental Disorders Natural Kinds?, (3) The Problem of Theory-ladenness, (4) The D.S.M. and Feedback in Applied Science, and (5) Conclusions. *Classifying Madness* also contains an appendix, bibliographic references and an index.

1 What is Mental Disorder?

Just as any system of knowledge organization is always, implicitly or explicitly, consciously or unconsciously, based on an understanding (or “theory”) of the domain it organizes, the DSM is based on an understanding of what mental disorders are. An important part of constructing or evaluating classifications is to examine such understanding.

This book shows how the assumptions behind a classification system can be examined and, in being made explicit, used fruitfully towards improvements in the classification of the domain. The chapter claims that the DSM is based on an incorrect understanding of disease, however (p. 41):

The account of disease used by the D.S.M. committee in practice, I suggest, was not far wrong. This being said, there may be reason to doubt the extent to which decisions to include particular conditions in the D.S.M. were influenced by accounts of disease.

The chapter provides fine arguments for an explicit and consequent account of disease and concludes (p. 43): “I have argued that whether a condition is a disease is in part a value-judgement. As doctors are not experts in making value-judgements, it follows from my account that it not appropriate for them alone to have a say in deciding which conditions are diseases.”

2 Are Mental Disorders Natural Kinds?

The problem of “natural kinds” is important for classification theory because it contains the idea that

classifications are not made for a purpose, but reflect an underlying natural order. Cooper writes (p. 47):

In recent years traditional essentialist accounts of natural kinds have come in for fierce criticism. A major difficulty is that for biological species, which are traditionally considered amongst the best examples of natural kinds, no plausible candidates for the essences can be found. Several different criteria may be employed by biologists seeking to determine species: morphological features, evolutionary lineages, the criteria of reproductive isolation, or genetic features. On examination none of these appears suitable candidates for being the essential properties of biological species.

One of the theories discussed is John Dupré’s theory of “promiscuous realism,” according to which classifications may reflect a real structure of nature (hence their “realism”), but that many different classification systems can be extracted from a given pattern without any one of them being privileged over the others (hence their “promiscuity”). Cooper has developed her own theory about natural kinds (p. 51): “I suggest that the right account of natural kinds claims that members of a natural kind possess similar important properties. These important properties are important because they determine many of the other properties possessed by members of the kind. For this reason I will call them ‘determining properties.’” On page 72 she provides a specific example: “Huntington’s Chorea is caused by a single dominant gene on chromosome four. Symptoms generally appear in middle-age and include jerky involuntary movements, behavioural changes, and progressive dementia. Plausibly Huntington’s Chorea is a natural kind of mental disorder; in all cases an identical determining property, the defective gene, produces characteristic symptoms.” The author warns, however (p. 74): “It should be remembered that classification systems should not only provide information about the entities they categorise, but also need virtues that will enable them to be used in practice. In some cases it may be best to reflect the natural structure of a domain, in other cases it will be better to employ categories that make sharp divisions where naturally there are none.” She concludes, that even if some mental disorders are natural kinds (p. 76):

There may be difficulties constructing a classification that reflects the natural similarities between types of mental disorders. In the next two chapters two potential sources of difficulty will be considered. These arise from the possi-

bility that observation in psychiatry is theory-laden, and from the fact that the D.S.M. is shaped by pressures emerging from the various ways in which it is used in practice.”

3 The Problem of Theory-ladenness

This important chapter concerns the theory-ladenness of observations, as well as that of classifications. For people without knowledge of this philosophical problem, it may be hard to accept that our observations are not direct reflections of a true reality, but are influenced by the theories we have. This chapter does a very fine job in presenting the problem in a clear way and could be assigned as required reading in classes on classification and knowledge organization.

Although Cooper discusses at length the kind of theory relevant in discussing the theory-ladenness of the DSM system, I feel that she does not present a clear picture of which different metaphysical theories may be the most relevant ones. My own view is informed by, for example, Danziger (2000). I suspect that psychiatrists tend to focus more on symptoms, methods and criteria related to metaphysical theories such as atomism, universalism and decomposability, while disregarding, for example, the roles of language and cultural objects and thus more holistic and relativistic metaphysical assumptions. The positivist researchers claim to be anti-metaphysical, but in reality use implicit metaphysical theories that limit their perspectives. Relevant theoretical issues may be uncovered by considering underlying positivist assumptions in psychiatric research.

DSM-I and DSM-II were strongly influenced by the psychodynamic approach to mental disorders, but with DSM-III, the psychodynamic view was abandoned and the biomedical model became the primary approach, introducing a clear distinction between normal and abnormal. The DSM claimed to be *atheoretical* since it had no preferred etiology for mental disorders. When DSM-III was first published in 1980, it embodied a radical new method for identifying psychiatric illness. The most central problem for a theory of classification is how it is related to theories in its domain, for a system cannot be neutral with respect to those theories. The next section goes into this question in more detail.

Chapter 3, Section 4: The Theory-ladenness of Numerical Techniques of Classification

At the end of Chapter 3, Cooper discusses the technique of cluster analysis and relates it to numerical techniques in general. This important section deserves a chapter of its own. The question here taken up could also be asked of research in information science and knowledge organization: are techniques such as bibliometrics and automatic indexing providing neutral, objective, atheoretical classifications?

Cooper says about this is valid. First, she finds that, although DSM is not based on cluster analysis to any extent worth mentioning, it succumbs to pre-suppositions implicit in the latter (p. 96):

The numerical taxonomy movement in biology made much of the supposed “objectivity,” “empiricism,” and “naturalness” of the classes produced. Similarly, the D.S.M.-III committee called for a rejection of theory-based classification on the grounds of the paucity of theoretical knowledge. Like the Numerical Taxonomists, they also aimed at a classification system constructed on empirical, atheoretical grounds.

Cooper’s most important conclusion is that one cannot select empirical variables for numerical techniques for classification without a basis in domain-specific theory. The arguments are mostly based on thought-experiments, however, and not upon empirical studies. I believe, nonetheless, that in this her reasoning is sound. Firstly, such techniques have been used very much (e.g. in intelligence research) and no clear pattern seems to have been established. Secondly, such studies appear to be based on unrealistic assumptions that disregard cultural factors.

4 The D.S.M. and Feedback in Applied Science

This chapter should prove the most stimulating for information scientists. It not only relates how the DSM is used in different kinds of practice and explains why the growth in use has been tremendous, but also investigates the impact of its application on the system. Its wider influence has also meant that psychiatrists have succeeded in controlling the ways in which other professionals such as psychologists and social workers see and do things. The pharmaceutical industry, as well as the insurance industry, has had much influence. Cooper shows how social

interests and pragmatic factors influence a classification that claims to be purely scientific.

Relevance for LIS

When a system becomes as powerful as the DSM has, other systems of knowledge organization come under pressure to adapt to them. For example, the *Clinician's Thesaurus* (Zuckerman, 2000), which is more like a handbook than a traditional thesaurus, was described as follows in the publishers advertising:

Clinician's Thesaurus helps mental health practitioners find the right words to describe their clients quickly and accurately. The new edition of this popular guidebook has been updated and expanded and is fully compatible with DSM-IV. It offers an exhaustive checklist of thousands of words and phrases in an easily accessible format—in effect, the whole language of the mental health professions. Enabling practitioners to quickly select the appropriate terms to describe almost every clinical situation, it makes constructing meaningful reports easier than ever before.

Similarly, the *Thesaurus of Psychological Index Terms*, 5th edition, claimed to reflect the DSM (Walker and Mulholland 1992, 48):

With the publication of the third revised edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III-R), all index terms in the psychological disorders area were reviewed. A major reorganization and reconstruction of index terminology for mood disorders, schizophrenias, psychoses, and anxiety disorders was completed. Most disorder terms now reflect changes in diagnostic categories represented by the DSM-III-R.

[This information was not given in the Thesaurus, American Psychological Association, 1988. In *PsycINFO News*, Vol. 20(3), p. 3, it is mentioned that the 9th ed. of the thesaurus has harmonized mental disorders terms with current DSM-IV terminology. Again, this information is not provided in the thesaurus itself or in any scholarly information source, but only in the more commercial-oriented documents. I believe that the *Thesaurus of Psychological Index Terms* runs into difficulties by trying to adjust their terminology to the DSM.]

“Scientific classifications” are clearly relevant for “bibliographic classifications”, thesauri and other kinds of knowledge organizing systems. This important connection is, however, often forgotten in LIS-contexts. One reason might be that the literature about scientific classification is too technical and difficult.

Knowledge-organizing systems are made to serve goals, interests and values. They can only do so properly with consideration of the kinds of problems revealed by *Classifying Madness*. This applies to the development of ontologies, which have become a strong trend: Cooper's book would be of equal interest to information and computer scientists developing ontologies of mental diseases. If information scientists are unfamiliar with these issues, they cannot influence their own systems in a conscious way. The DSM has formerly been considered within our field (e.g. Spasser, 1998).

Conclusion

The literature on the DSM is huge. However, *Classifying Madness* remains particularly clear and articulate in its analysis of the DSM's conceptual underpinnings. Furthermore, it is important in illuminating some core issues in classification theory as they present themselves in the case of mental disorders. Often books about classification in specific disciplines are very technical and difficult, but *Classifying Madness* is comprehensible, even to those without specialized knowledge in psychiatry or philosophy—although some philosophical background would probably provide the patience necessary to read through the complicated details of classification problems. This book is not too specialized for information science students, either: knowledge gained by *Classifying Madness* can be transferred and used to question other classification systems.

References

- Danziger, Kurt. 2000. Making social psychology experimental: A conceptual history, 1920–1970. *Journal of the history of the behavioral sciences* 36: 329–47.
- PsycINFO News, 20(3), 2000–2001. <http://www.apa.org/psycinfo/training/pin/00-01falwin.pdf>.
- Spasser, Mark A. 1998. Psychiatrists make diagnoses, but not in circumstances of their own choosing: agency and structure in the DSM. *Library trends* 47(2): 313–37.

Stamos, David N. 2004. Book Review of: *Discovery and Decision: Exploring the Metaphysics and Epistemology of Scientific Classification*. *Philosophical psychology* 17: 135–39.

Walker, Alvin, Jr. and Mulholland, Sarah N. 1992. The *thesaurus of psychological index terms*—A historical review. *Behavioral & social sciences librarian* 11(2): 39–57.

Zuckerman, Edward L. 2000. *Clinician's thesaurus*, 5th ed. New York: Guilford Publications.

Professor Birger Hjørland, Royal School of Library and Information Science, DK-2300 Copenhagen S, bh@db.dk