

Book Reviews

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Book Review Editor

SZOSTAK, R. *Classifying Science: Phenomena, Data, Theory, Method, Practice*. Dordrecht: Springer, 2004. 286 pp. ISBN 1-4020-3094-0 (hardcover).

The book deals with mapping of the structures and contents of sciences, defined broadly to include the social sciences and the humanities. According to the author, the study of science, as well as the practice of science, could benefit from a detailed classification of different types of science. The book defines five universal constituents of the sciences: phenomena, data, theories, methods and practice. For each of these constituents, the author poses five questions, in the well-known 5W format: Who, What, Where, When, Why? – with the addition of the question How? (Szostak 2003). Two objectives of the author's endeavor stand out: 1) decision support for university curriculum development across disciplines and decision support for university students at advanced levels of education in selection of appropriate courses for their projects and to support cross-disciplinary inquiry for researchers and students; 2) decision support for researchers and students in scientific inquiry across disciplines, methods and theories. The main prospective audience of this book is university curriculum developers, university students and researchers, in that order of priority. The heart of the book is the chapters unfolding the author's ideas about how to classify phenomena and data, theory, method and practice, by use of the 5W inquiry model.

The introductory chapter of the book opens with a mention of the distinctions developed within philosophy of science such as nomothetic versus ideographic science, quantitative versus qualitative science, natural versus social science. Likewise, the chapter briefly refers to the Aristotelian distinction into three types of science: the theoretical, practical and productive. Despite the author's indication here to return to an in-depth discussion of such related work, the introductory references are not followed up. This is a major flaw of the book. The body of work on the history and ideas within philosophy of science about the classification of the sciences is substantial. Fur-

thermore, related work on science mapping, such as scientometrics, serve an instrumental purpose quite similar to the author's approach, namely to support disciplinary as well as cross-disciplinary decision-making and inquiry amongst researchers, curriculum developers and students. Indeed, current approaches of science mapping are mentioned in a chapter on Classifying Scientific Documents, yet the overall approach of science mapping is much broader and includes for instance inductive mapping of, for instance theories, researchers, topics and methods.

In lieu of a coherent in-depth discussion of related work, the author brings in fragments of references to related work in the chapters that unfold the 5W technique for each of the five suggested constituents of science. The reason for the author's fragmented presentation of related work might be that the related work does not constitute a coherent body of knowledge. Within Information Science, for example, the body of knowledge on empirically founded classifications is characterized by methodological experimentation and diversity, in their range from empiricist approaches like statistical analysis of user terms to critical-hermeneutical approaches like dialog research for participatory design of classification schemes. In such cases, a more contextual discourse about related work can be fruitful and warranted. The present book fails, however, to accomplish a contextual introduction of related work in the chapters about how to identify, analyse and classify the elements of science. Without due warning, for instance possible counterarguments from authors of related work, the author concludes each section of each chapter with the statement that his approach is superior. As the argument of superiority stands, without challenge from the arguments of the peer literature, then, the author's ideas remain assumptions. Thereby, the book fails to introduce a new theory about how to classify the sciences. This could, however, be regarded as being in line with the book's implicit instrumental objective: to introduce a simple model for analysing the users' needs for support tools in decision making within curriculum de-

velopment, studies and research. If that is the author's primary intention, then how does the book succeed in that endeavour?

First of all, a generic guideline like the 5W query model is inadequate as a singular static instrument to infer the users' needs. For analysis of user needs, the model should be based on an empirical basis and body of knowledge. An empirical foundation could, however, very well be initially investigated in a qualitative manner, which is guided by use of the 5W questions: Who are the prospective users? What are their needs? Where (in what context) do we find the users? When (in what situations) do the users want to apply the tools? Why would they apply the tools? – and How would they apply the tools and for what problems? Within the related field of systems analysis, Rasmussen et al. (1994) have developed similar questions for empirical analysis of user needs, based on the methodological framework of cognitive work analysis and decision theory, and an empirical foundation in the shape of a substantial body of knowledge about user needs, derived from field studies in a variety of work domains. In the tradition of qualitative empirical study and analysis, an initial inquiry model is developed further to comply with the conceptual diversity and dynamics of the studied domains. Secondly, for illustration of the application of a new inquiry model, it is fruitful to refer to case examples of actual empirical analysis of user needs, including plans for how to evaluate any new resulting tools. The present book does not introduce example cases of needs analysis for prospective users of the proposed classifications. Neither does it indicate how the proposed classifications could be empirically validated and verified. Because of the lack of accounts about the empirical foundations and work done by the author, the classificatory structures remain abstractions and normative suggestions. If the intent is to maintain a normative and abstract position for identifying, analysing and classifying science elements, then what does that entail for prospective users of the classificatory approach? Would the classificatory structures, if imposed on the user domains, ultimately function as normative and regulative frameworks for the users' understanding, decisions and behaviour?

In his *Discipline and punish*, Foucault (1979) introduces the notion of "panopticism" as the practice of authority in enlightened Western societies following the previous feudal and monarchical models of social control. Foucault used the metaphor of a prison, where the inmates are watched continuously

through surveillance in a prison-panopticon. The surveyor's view is internalized by the prisoner, and the prisoner unconsciously behaves according to the norms that underlie the design of the panopticon. As tools for administration of institutional or disciplinary knowledge and work, classifications can function as panoptica in a similar way, to direct the actors' unconscious perceptions, decisions and behaviour in decision-making. Such potentially regulating aspects of classifications have, for instance, been revealed by Bowker and Star (1999). In the preface to the present book, the author states that "the classifications developed by this book both encourage and facilitate the careful specification of key elements [clarity, utility, unity] of a research project. Moreover, they allow this to be done within the context of a common vocabulary. At the moment, scholarly communication even within disciplines, but especially beyond, is rendered problematic by the fact that different scholars attach quite different meanings to the same word. A common vocabulary should encourage interdisciplinary communication, and also communication to the wider public" (ref., p. xi). It is true that the proposed classificatory structures are cross-disciplinary. As such, the author's ideas could be fruitfully applied by, for instance, university administrators and teachers to share knowledge across curricula. However, there is a danger that pervasive knowledge sharing through the pantopticon of a predefined and non-contested common vocabulary will overly emphasize a singular view of, for instance curriculum development and scientific inquiry, to the exclusion of diversity, mutual inspiration and democracy in conceptual innovation within research and education.

Despite its methodological flaws and lack of empirical foundation, the book could potentially bring new ideas to current discussions within the practices of curriculum development and knowledge management as well as design of information systems, on classification schemes as tools for knowledge sharing, decision-making and knowledge exploration. I hesitate to recommend the book to students, except to students at advanced levels of study, because of its biased presentation of the new ideas and its basis on secondary literature.

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ROE, Sandra K. and Alan R. THOMAS (Editors). *The Thesaurus: Review, Renaissance and Revision*. Binghamton: The Haworth Information Press, 2004. 209 pp. ISBN 0-7890-1978-7 (hardcover) 0-7890-1979-5 (paperback).

It might be thought unfortunate that the word thesaurus is assonant with prehistoric beasts but as this book clearly demonstrates, the thesaurus is undergoing a notable revival, and we can remind ourselves that the word comes from the Greek *thēsauros*, meaning a treasury. This is a useful and timely source book, bringing together ten chapters, following an Editorial introduction and culminating in an interview with a member of the team responsible for revising the NISO Standard *Guidelines for the construction, format and management of monolingual thesauri*; formal proof of the thesaural renaissance.

Though predominantly an American publication, it is good to see four English authors as well as one from Canada and one from Denmark; and with a good balance of academics and practitioners. This has helped to widen the net in the citing of useful references. While the techniques of thesaurus construction are still basically sound, the Editors, in their introduction, point out that the thesaurus, in its sense of an information retrieval tool is almost exactly 50 years old, and that the information environment of today is radically different. They claim three purposes for the compilation:

“to acquaint or remind the Library and Information Science community of the history of the development of the thesaurus and standards for thesaurus construction.

to provide bibliographies and tutorials from which any reader can become more grounded in her or his understanding of thesaurus construction, use and evaluation.

to address topics related to thesauri but that are unique to the current digital environment, or network of networks.”

This last purpose, understandably, tends to be the slightly more tentative part of the book, but as Rosenfeld and Morville said in their book *Information architecture for the World Wide Web* “thesauri [will] become a key tool for dealing with the growing size and importance of web sites and intranets”. The evidence supporting their belief has been growing steadily in the seven years since the first edition was published.

The didactic parts of the book are a collection of exercises, readings and resources constituting a “Teach yourself” chapter written by Alan Thomas, ending with the warning that “New challenges include how to devise multi-functional and user-sensitive vocabularies, corporate taxonomies and ontologies, and how to apply the transformative technology to them.” This is absolutely right, and there is a need for some good writing that would tackle these issues. Another chapter, by James Shearer, skilfully manages to compress a practical exercise in building a thesaurus into some twenty A5 size pages. The third chapter in this set, by Marianne Lykke Nielsen, contains extensive reviews of key issues and selected readings under eight headings from the concept of the thesaurus, through the various construction stages and ending with automatic construction techniques.

Leonard Will addresses the topic of thesaurus consultancy with sensible remarks that relate to any sort of consultancy. He points out that the phrase ‘thesaurus consultancy’ is probably too narrow, as there is much deep investigation to be conducted, and decisions to be made in definition and planning before the actual building and implementation of any structured vocabulary should begin. Too many clients seem to believe that a thesaurus is some back-room tool to be built and plugged in when ready. In fact, the thesaurus (or any other authority file providing the values for metadata) should be an integral part of the overall information architecture, and its compilation should not be regarded as a trivial task. Will quotes some cost figures to support this view. In the following chapter, Leslie Ann Owens and Pauline Atherton Cochrane suggest that the seminal *Thesau-*