**Metadata: Shaping Knowledge from Antiquity to the Semantic Web.** By RICHARD GARTNER. Pp. 114, ill. £20.99 : Springer. 2016, Price. ISBN 9783319408910

This slim volume aims to provide the reader with an overview of the history and development of metadata from the earliest times to the present day, and it offers a straightforward and readable account of metadata for the novice, or the non-professional. The content is more substantial than it might at first appear, since the text is very close set in a small font, but it is well supported by examples and illustrations which help to break up the otherwise rather dense page layout.

The title is perhaps misleading, since the major focus of the book is on more recent and contemporary understandings of metadata, and, in reality, the historical aspect of the book is relatively brief, moving rapidly from the ancient world to the contemporary in a very few pages. The historical account is also very selective, and serves mainly to give some examples of how documents were recorded and represented in different periods and cultures, rather than to present an integrated narrative showing progression and development. For the most part, the author steers away from the usual library and information science tradition and its literature. For example, it is surprising to choose the Bodleian Library's early categorization as indicative of classification in the early modern period, rather than Francis Bacon's classification of knowledge which, it is generally agreed, was a powerful influence on subsequent book classifications created by both librarians and booksellers, and on the early encyclopaedists. Similarly, Panizzi's rules for the British Museum catalogue are discussed, but not Charles Ammi Cutter's *Rules for a Dictionary Catalog* of 1876 which, along with his *Expansive Classification*, have been far more influential on the Anglo-American tradition of descriptive and subject cataloguing.

Just as the content is selective, the author is also idiosyncratic in his use of the vocabulary, and on the interpretation put on it. The language is sometimes dismissive (things are 'grandiose', or 'arrogant'), and the author adopts a moderately hostile attitude to classifications, referred to as 'the ossified structures of enumerative schemes'. It's not really true that the subordination of one class to another generally implies its inferiority, although it is the case with socially constructed classifications that the grouping and association of classes can produce that result (as when sexual orientation is subordinated to psychological disorders). But presenting, for example, France as a subdivision of Europe says nothing at all about their relative merits, any more than a zebra becomes an inferior kind of horse because it is a subclass of Equidae. The idea that a thesaurus is more flexible than a classification because it can use multiple broader terms to describe a subject is true only because a thesaurus is an indexing tool whereas a classification is a tool for linear arrangement which necessarily must find a single location for an item in a physical collection. This fundamental distinction between the retrieval and browsing functions of different knowledge organization systems is nowhere discussed, nor is the way in which the same system might be used pre- and post-coordinately for these different purposes. The representation of complex subject content must be handled differently according to the context, and to the task in hand.

I think it is a pity when the idea of discontinuity is emphasised, between earlier practice (in a print based world) and the current digital information environment. We should rather think of an evolution of understanding of the nature of information, and the accompanying growth of theory. Modern information architects and semantic web developers owe much to the

early theorists of library and information science. One might mention H. E. Bliss, the first to articulate the theory and philosophy of bibliographic classification, and to coin the term 'organization of knowledge', and who was a powerful influence on the young Ranganathan, or Paul Otlet, the founding father of the documentation movement, and of the discipline of information science, neither of whom get a mention here.

However, the value of the book lies more in the discussion of current practice, and of metadata relating to digital resources. These are more clearly explained, and there are good examples to support the text. The author deals briefly but competently with such topics as the semantic web, ontologies, RDF triples, linked data, citizen science, web 2.0, social cataloguing, and folksonomy. I did, however, still find some points of contention: SKOS, for example, is not an ontology, nor a method for constructing controlled vocabularies. Rather it is a web ontology *language*, designed to represent existing controlled vocabularies, such as classifications and thesauri, and their internal relationships.

It is suggested the work would be a useful introduction for students of library and information science, but it seems as if the intended audience is more likely to be digital library and digital asset managers. A small number of references is attached to each chapter, and I feel it would have been useful for a student audience to include a more extensive bibliography, providing the reader with access to the significant work in the main areas under discussion. It is interesting to compare the book with existing general works on metadata, such as those by Zeng & Qin (*Metadata* Facet, 2016) or Hider (*Information Resource Description* Facet, 2012), both more systematic and more substantial in their approach. Hider's book is broader in concept, with coverage of 'library' metadata schemes, but neither allocate space to historical examples of metadata, but I feel both are more useful as texts for students.

However, for a more general readership, one of the work's merits lies in the links it makes with the general idea of metadata as it occurs in a range of periods and cultures. There are some useful and interesting allusions to the idea of representing knowledge as it occurs in different disciplinary areas, and some nice examples of the perils and pitfalls of the enterprise. There is plenty here to intrigue and entertain for those wanting a lightweight introduction to the subject, at a very attractive price, and who will not be overly concerned about the precise use of technical language.

*University College London*                                                                                 VANDA BROUGHTON