

project next to CrissCross, but not part of it, called RESEDA (for Representation of Semantic Data) - FRSAD's adaptability and appropriateness in an environment of heterogeneous and distributed systems and made some suggestions for further improvement.

All in all, the 12 contributions provide a good insight into the state-of-the-art of interoperability applications and their possibilities in future cases of comparing, mapping, and combining KOS of all sorts. They are certainly of great relevance and need for both information science and library science. They are a necessary step forward for all the ongoing Linked Data ambitions, especially also regarding the Semantic Web.

References

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This collection of articles, originally special edition 34(4) of the *Journal of Information Science*, chronicles the development and achievements of the information science (IS) discipline and outlines its current challenges and research directions. The authors are pre-eminent researchers, many of whom have been involved in their field since inception. Many of the chapters will be of great use to students or those wanting to better understand a topic, as they provide rich references to key studies, centres and individuals that have helped shape the knowledge base.

Although not all of the topics covered sit squarely within the scope of this journal, most are of interest and some provide crucial overviews of past and present work in the organisation of knowledge.

The volume can be loosely divided into those dealing with analysis of the discipline as a whole, those summarising and evaluating work on a strand of information science, and those describing applications of information science approaches in a particular domain. Space prevents all chapters being covered here, but I will try to do justice to the spirit and flavour of the whole.

In "Fifty years of UK research in information science," Jack Meadows looks at the *Journal of Information Science* and the *Journal of Documentation* in order to derive the dominant themes in the published research. He concludes that the major thematic areas of information retrieval, library and information services, information seeking, bibliometrics and communication emerge from the collected articles. He goes on to flesh out these themes with some dominant historic areas of focus and emerging trends such as impact and scientometrics research within bibliometrics. He also notes areas of permeability between these IS-claimed topics and those of other disciplines, such as between information seeking and communications and between information retrieval and computer science. Usefully, Meadows also points to changes in funding regimens to help explain shifts in focus over the years, and particularly notes the trend to shorter projects and funder-driven agendas. Meadows finishes by accepting the submergence of IS into informatics, while recognising the validity of its contribution to date.

David Bawden continues an analysis of the IS contribution to knowledge in "Smoother pebbles and the shoulders of giants: the developing foundations of information science." Bawden digs a little deeper into IS's basic theoretical structures, its validity as a science and its relation to practice. He outlines the work of IS founding fathers such as Brookes and Farradine in scoping what IS should be and do, whilst pointing to quite fundamental variance between them as to the concept of information – a physical surrogate of knowledge (Farradine) or as a cognitively represented, but more fragmented entity than knowledge (Brookes). Bawden moves on to the relationship between IS research and the information professions, highlighting historic tensions but concluding that the role of IS remains to inform reflective practice and create a body of knowledge around information. Like Meadows, Bawden sees opportuni-

ties in the dawn of the informatics era for IS to make its insights felt beyond its traditional borders, with a key role of IS to maintain a focus on invariant principles of information in order to help us understand and exploit rapidly developing new technologies.

A clear illustration of this informational-technological “pace layering” outlined by Bawden is provided in the chapter “The last 50 years of knowledge organisation: a journey through my personal archives” by Stella Dextre Clarke. Dextre Clarke presents a rich anecdotal journey through the history of information classification from card files through early computers to modern techniques, showing how proven underlying principles have only been strengthened through the capabilities of new technologies. This chapter is useful reading for those coming to classification now and seeking to situate it historically, as Dextre Clarke does a good job of joining up early methods such as optical coincidence cards (where light shone through overlaid cards reveal resources meeting the search criteria) with the emergence new electronic approaches to metadata, ontologies and the semantic web.

Whilst Meadows and Bawden try to stress the contribution of IS to science more generally, Blaise Cronin approaches his engagingly written chapter “The sociological turn in information science” by situating the discipline within the prevailing research climate of past decades and acknowledging the influence of fields such as sociology and cognitive science on research directions and methodologies. Along with a better appreciation of user needs and behaviours, he notes how context, task and agency appreciation is increasingly considered in information retrieval along with “harder” quantitative methods. He is also convincing on the need to appreciate the social dimension to bibliometric studies. He closes with noting the embodied turn, influenced by activity theory, which foregrounds practice in the generation of knowledge – perhaps thereby providing a response to concerns of a disconnect between IS research and information practice.

Further chapters provide similar historical overviews of information retrieval (Stephen Robertson's “On The History of Evaluation in IR”) and information seeking behaviour (Tom Wilson's “The information user: past, present and future”). Both student of IS and the seasoned academic can benefit from these rich summaries of the state of the subfield and the links given to milestone discoveries, publications and events. In their separate ways, the authors attempt to bridge research and practice, with Robert-

son pointing to the limitations of a controlled approach to IR research in contrast to the messy world of the user, and Wilson calling for more action research to better understand real-world information use.

In other chapters, authors give useful overviews of IS research directions in cheminformatics (Peter Willet), health informatics (Peter Bath), visual information retrieval (Peter Enser), electronic and open access publishing (Charles Oppenheim). Such chapters serve to illustrate the added value provided by information science to which the opening authors had alluded, and reveal the extent of sophistication of the methods applied in different domains. It is Bath perhaps who best explicates this, by showing that information science addresses not only explicit information needs, but also implicit ones – through understanding the application domain, IS can add value by anticipating and extending knowledge through the appropriation of increasingly sophisticated tools. Interestingly, it is also Bath who personifies the blurring of the IS disciplinary boundaries, as his chapter strays some way into ground more traditionally associated with computing and information technology.

This tendency is further illustrated in “Social informatics and sociotechnical research—a view from the UK” by Elisabeth Davenport. The research described here all comes from key studies perhaps more associated with the other IS—Information Systems—and represents in part the recognised need for the information systems field to rebrand and reinvent itself for the new millennium, but also an effort to scope the traditions and concerns that informatics can in part be founded on. Coupled with Wendy Warr's chapter on Web 2.0 and social software, this is also a recognition of the extension of informatics beyond the organisation and into global networks.

Armed then with tools and techniques often applied to the structural analysis of other scientific fields, this volume frequently sees researchers turning this lens on themselves and ranges in tone from the playfully reflexive to the (parentally?) overprotective. What is in fact revealed is a rather disparate collection of research areas, all making a valuable contribution to our understanding of the nature of information. As is perhaps the tendency with overzealous lumpers,¹ some attempts to bring these areas together seem a little forced. The splitters help draw attention to quite distinct specialisms, IS's debts to other fields, and the ambition of some emerging subfields to take up intellectual mantles established elsewhere. In the end, the multidisciplinary nature of in-

formation science shines through. With regard to future directions, the subsumption of IS into computer science is regarded as in many ways inevitable—though there is consensus that the distinct infocentric philosophy and outlook which has evolved within IS is something to be retained.

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Note

1. See http://en.wikipedia.org/wiki/Lumpers_and_splitters