

A Science of Public Knowledge? Theoretical Foundations of LIS

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In this session, we examine several related aspects of the ongoing quest to map the intellectual structure of our field and to consolidate its theoretical foundations. The conceptual relationships between bibliometrics, informetrics and related fields are explored; the historical connections between classification and information retrieval researchers are examined; and the distinction between information science and information technology is analyzed both bibliometrically and from the perspective of social epistemology.

Introduction

Calls have regularly been made for the identification and development of a body of theory that may serve as a foundation for information science. To this end, Jesse

Shera popularized the notion of social epistemology; bibliometricians have proposed models of human document-processing behavior; Patrick Wilson and others have made strides towards integrating library science, bibliometrics, and information science in a broad science of public knowledge.

Concepción S. Wilson: On the foundation, history and future of bibliometrics

Bibliometrics is founded on several insights about text, including most generally a strong distinction between the form and the interpretation of the character strings which compose documents. The development of the field is described by following two trends: a computer-facilitated expansion in the amount of document text analyzed, from short traditional bibliographic fields through to all morphemes in the full text; and a shift in the interpretation

of strings, from unambiguous simple functions in scientific communication to more complex components of content. Three stages may be recognized in this development: traditional Bibliometrics, Citation Analysis, and Informetrics. A closer association with other fields which analyze text scientifically appears inevitable, leading to a science of public knowledge.

Shawne D. Miksa: Citation behaviors of lumpers and splitters: An analysis of classification research and information retrieval research, 1952-1970

This is a continuation of a citation analysis of the published works of the Classification Research Group (CRG) and the Center for Documentation and Communication Research (CDCR) during the years 1952 to 1970. Results from a co-citation analysis revealed four distinct groups of researchers that hint at a division between classification research (CR) and information retrieval (IR) research. By division is meant that research fronts neither communicated nor contributed to each other, despite having the same research goals. This presentation will report on the results of a bibliographic coupling analysis between the two groups as well as a comprehensive content analysis of a select set of works derived from the two citation analyses. These analyses will provide a comprehensive intellectual history between these two areas of research in LIS.

Specifically, questions such as whether or not there were "boundaries" where citing certain author's works were concerned and did the members of either group feel inclined or disinclined to cross those boundaries will be addressed. Did the citing behaviors of the CRG reflect the need to move away from the older ideals of classification research, i.e., were they citing more IR authors or were they remaining within their own small world of accepted classification writings? It is hoped that a comprehensive picture of the foundational similarities and differences between classification research and information retrieval research during this eighteen year time period will provide a structure for more efficient construction of organizational information systems, including classification systems and information retrieval systems.

Anita Coleman: Mapping the intellectual structure of information science and information technology: A study of geographic information science.

The literature of Geographic Information Science (GIS) is examined to distinguish information science versus technology. GIS is aptly suited for such a study. Also referred to as Geographic Information Systems, there is

discussion about it as tool versus science. We report a bibliometric and qualitative study of a GIS journal, *Computers & GeoSciences* (C&G). C&G began publication in 1975 and included complete "programs"; in the mid-1990s its focus moved away from GIS as tool and system to science. Statistical clusters based on citing relationships and qualitative clusters using indexing descriptors help show the changes and illustrate the history of GIS.

Julian Warner: Organs of the human brain, created by the human hand?" The social epistemology of information technology

A view of information technology as a radical human construction, indicated by the title's quotation from Marx (1973, p.706), has been introduced to information science but not widely diffused within it (Warner, 1999).

Attitudes to information technology within information science have often been conveyed by implication rather than explicit conceptualization. Information technology has been regarded as objectively given or as an autonomous development, particularly by the language of discussion. Traces of technological determinism can be found, most subtly and pervasively in the limited recognition of information technology as a human construction.

This paper considers evidence for these attitudes, treating the literature of information science, broadly understood, as a subject for social epistemological investigation. The view of technology as objectively given is contextualized in relation to the dominant, and analogous, understanding of mathematical propositions as discovered rather than humanly created. The reluctance to acknowledge information technology as humanly made is also related to the view of productive technology as artificial and threatening, embodied in the Frankenstein myth.

By recognizing and transcending these attitudes, information science can offer a historically specific and theoretically informed view of information technologies to other scholarly and wider public communities.

REFERENCES

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