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► **To cite this version:**

Steve Fuller, Birger Hjørland, Fidelia Ibekwe-Sanjuan, Lai Ma, Jens Erik Mai, et al.. Uncovering Epistemological Assumptions Underlying Research in Information Studies.. 76th ASIS&T Annual Meeting., Nov 2013, Montreal, Canada. pp.1-4. hal-00881819

**HAL Id: hal-00881819**

**<https://hal.science/hal-00881819>**

Submitted on 9 Nov 2013

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# Uncovering Epistemological Assumptions underlying Research in Information Studies

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## ABSTRACT

There have been several calls from LIS researchers for practical or applied research not to ignore the epistemological assumptions underlying the systems and artifacts they design lest they showcase only the dominant theory at a given time. Others have also deplored the “epistemological promiscuity” or “eclecticism” of the field, its incessant borrowing of theories and models from elsewhere (interdisciplinarity) and the fact that the field has largely neglected the contributions that philosophy and epistemology could have made in its research. This problem raises that of the boundaries of LIS and is all the more troublesome because boundaries between epistemological theories are fuzzy. Indeed, some epistemological theories share the same basic assumptions or are historically derived from one another (rationalism and positivism, for instance). Gathering a wide array of acknowledged theorists in philosophy of science and epistemology, this panel aims to examine how research work in the LIS field can clearly articulate the epistemological assumptions underlying that research and under what constraints this can be achieved. The topic is of prime importance to Information studies as a whole and to ASIST as the scientific flag bearer of information scientists worldwide.

## KEYWORDS

Epistemology, theoretical assumptions, scientific research.

## INTRODUCTION (FIDELIA IBEKWE-SANJUAN)

Several authors in Knowledge organization (KO) and in Library and Information Science (LIS) have deplored the fact that both fields have been driven primarily by practical applications and professional practices (Bates 2005, 2007). Yet others have stressed the need for research in the field to be more theoretically motivated, lest it continue to be perceived not as a scientific field but rather as a set of techniques used to solve practical KO and IR problems (Hjørland 1998, 2010; Bates 2005, 2007; Buckland 2012; Furner 2010, Bawden & Robinson 2012). Hjørland (2010) has recalled the fact that “epistemology is at the basis of the question *“what is the scientific method”*, that we are all influenced by epistemology whether we realize it or not and

has therefore urged scholars and practitioners in KO and LIS to make explicit the epistemological assumptions underlying research they are carrying out in the field. Hjørland (2010) also pointed out that there is a “limited number of methods for acquiring scientific knowledge which correspond to basic epistemological views such as empiricism, rationalism, positivism, historicism or pragmatism. When we develop a scientific methodology, we automatically fall under one of these epistemological theories.” Hence the necessity that practical or applied research in KO and LIS not ignore the epistemological assumptions underlying the systems and artifacts they design. For instance, KO scientists and professionals who design classification schemes in a given domain cannot ignore the competing theories in that domain, (e.g. in the field of Arts), otherwise, they run the risk of showcasing the dominant theory. Furner (2010) has also urged LIS scholars to incorporate philosophy into their curricula.

It is necessary however to distinguish between epistemological views and methods they inspire (Hjørland 1998: 163). A method is a protocol or way of carrying out a given piece of research to obtain knowledge, whereas an epistemological view is an account of how knowledge is acquired that can be advanced to justify the use of a method. As Dousa (2008: 242) noted with reference to KO, “this distinction is important, for it suggests that, on the analytic level, the use of any given method within a KO system can be dissociated from the epistemological position that provides its theoretical justification- that is to say, the methods used in constructing a KO system need not mirror, in all particulars, the specific epistemological commitments of its creator(s) and/or curator(s).” Likewise, Tennis (2008) has rightly observed that it is necessary to distinguish epistemological theories and the methods that they are invoked to justify because the latter may not necessarily embody precisely the same theoretical assumptions as the former and can even depart from them. On this view, a

researcher may subscribe to a given epistemological theory (or point of view), but, in the course of his or her research, employ different methods, some of which are based on epistemological assumptions that do not coincide with his or her own.

In practice, LIS researchers have tended to take the best methods at hand, without bothering much about the underlying epistemological assumptions therein.

On the other hand, it may not be possible for a researcher developing a method, a system or a professional service to assert "this is the epistemological family under which this line of research falls" or to claim "the epistemological assumptions underlying this research borrow solely from positivism or rationalism or empiricism or social-constructivism or historicism or hermeneutics", simply because the work may borrow from methods issuing from different epistemological theories at different stages of realization. This is all the more true as boundaries between epistemological theories are fuzzy because some of them share the same basic assumptions or because, as noted earlier, one historically derived from another (rationalism and positivism for instance).

The oft-proclaimed interdisciplinary nature of LIS with its attendant borrowing of models and theories from disciplines is increasingly being seen as a weakness (Buckland 2012, Cronin 2012) and the disciplinary status of the field has always been questioned. It is therefore important that LIS researchers articulate more clearly how they validate the scientific knowledge they purport to produce.

In answer to these calls, this panel moderated by Julian Warner, will illustrate the interplay between epistemological theories and methods developed in various areas of LIS research and engage the audience in trying to shed light on the following questions:

- i) Is epistemological purism possible in scientific research, i.e. is it possible for a given piece of research, especially empirical or applied, to derive its assumptions and methods from one and only one epistemological theory?
- ii) Is the fact that we often have recourse to several epistemological assumptions from different epistemological theories a result of the epistemological nature of the theories themselves? Do they exist in their "pure" form or are some of them intrinsically hybrid in nature?
- iii) From its very origins, information science has been involved with both technological and social problems leading to an epistemological duality. Can the different epistemological viewpoints underlying methods to these problems be reconciled/transcended?
- iv) What can be done to make this task easier? Can we incorporate some kind of *epistemological torch/roadmap* into our LIS curricula?

## **CLARIFYING EPISTEMOLOGICAL ASSUMPTIONS (BIRGER HJØRLAND)**

This presentation will emphasize that although "epistemological purism" is not attainable, eclecticism, on the other hand, is not the way forward: Some epistemological ideals are simply in mutual conflict. It is important that researchers develop a clear theoretical understanding of the field, and because information science is about the selection, description, mediation of use of knowledge and knowledge sources, our field has a much more direct connection to theories of knowledge (=epistemologies) than most other fields have.

A general lesson from pragmatism and critical theory is that knowledge is created by humans for some specific purposes and serves some interests better than others. Knowledge, documents, concepts, and theories are not neutral in their use, but should be examined in relation to their implications for the users they are meant to serve.

## **TOWARDS THE CULTURAL AND THE SOCIAL (JENS ERIK MAI)**

At an ASIST meeting a few years ago, Jonathan Furner (2011) asked: "what *ought* information science to be like?", the following year Michael Buckland (2012) asked: "what kind of science *can* information science be?", and recently Birger Hjørland (2013) asked: "is library and information science (LIS) an academic discipline?" These questions suggest that there is something uniquely troublesome about the state of information studies, which demands philosophical explorations of the nature of field. The end point for these three scholars' explorations of the field and their proposals for future directions of information research suggests an epistemological shift in information research; a shift that demands a re-orientation of the field towards the cultural and social – a shift from information as an abstract neutral notion as bits that can be managed, moved, sought, organized and used to a particularistic notion of information that means something to somebody, that impacts people's lives, that is right or wrong, true or untrue, useful or not. Towards a humanistic information science (cf. Feinberg, *et al.*, 2012). It could be argued that information studies should consider the notion of meaning to be crucial to understanding the nature of information studies and people's interactions with information. In this tradition, information is particularistic and tied to specific users and situations. Information is about something for someone in some context. In this understanding, information is like a semiotic sign – it is something that is used to facilitate the exchange and production of meaning.

## **THE GAP BETWEEN THE SOCIAL AND THE TECHNICAL (LAI MA)**

Information science has largely been concerned with what and how we may be informed. The construction of

information infrastructures and the collection, storage, organization and retrieval of information are social activities, and inevitably involve technical and technological knowledge. The social and the technical issues in the construction of information and information infrastructures, however, have largely been in different areas of study in information science. The separation is likely because of the common methodological divide between the scientists/engineers and the humanists. A communicative-pragmatic framework is suggested for bridging the social and the technical by looking into the ontological characteristics of information and information-related phenomena. It is also suggested that methods are not necessarily objectivistic or relativistic, but a consideration of their epistemological and methodological commitments is necessary for any study.

#### **EPISTEMOLOGICAL ASSUMPTIONS IN KO (JOE TENNIS)**

In the context of knowledge organization (KO), we construct our research paradigms around the design, study, and critique of knowledge organization systems and practices (Tennis, 2008). We do our research so that we might improve the organization and representation present in information systems, either through a basic understanding of their nature, or in more applied recommendations of work with or construction of indexes, classifications, or ontologies. The historical, epistemic, and ontological commitments in KO have been that if we are right about how we view the domain, its conceptualizations, and its users, we can build the right knowledge organization system (KOS). However, it seems that "judgements of what is right" is contingent on a number of assertions, which require us, the researchers, to argue for one justified true belief or another. Domain analysis is an example of a technique that works toward solving, what we call medium knowledge organization problems (Mai, 2010). In domain analysis we are establishing what is the right conceptualization of the domain, its conceptualizations, and its users so that we might build and implement the right KOS. Because we are seeking the right answer to the question: what does this domain contain? We must argue from an epistemically conservative position, namely a position where my statement of what this domain contains is knowledge, traditionally defined as justified true belief. This requires us to align our epistemological and ontological assumptions with our particular method of inquiry so that we form a coherent, and what is seen as a defensible, argument for why we are right. In this presentation, I will outline these assumptions, the questions that follow, and return to the question of justified true belief in the context of KO and KOS, with an appeal to intentionality as described by Buddhist philosophy (Harvey, 1995).

#### **TRANSCENDING EPISTEMOLOGICAL DUALITY (JULIAN WARNER)**

Information science has classically involved an epistemological duality, of scientific and mathematical methods and also of forms of understanding associated with the humanities and social sciences. The duality can be traced to the concern of information science with computational technologies and with human subjects. As such, inclusion of both elements seems inescapable within information science.

The division implied by the duality can still be transcended and an integrated viewpoint developed. The inescapability and value of the geometrical method for certain purposes can be acknowledged, while limiting its application to more directly human domains. For such domains, a contrasting emphasis can be placed on restricting the length of inferential sequences and on empirical rooting and testing of propositions at each stage in their development. An acknowledgment of the value of simplicity links both geometrical and human domains. A concrete example, for information science, will be given of the distribution of geometrical and more human modes of thought for information retrieval, with specificity obtainable from technological or machine transformations (a Google search) and combination or generic power reserved for human intervention and creativity.

#### **THE COST OF EPISTEMOLOGICAL PURISM (STEVE FULLER)**

'Epistemological purism' is an ideal that has been perhaps most persuasively presented in Thomas Kuhn's *The Structure of Scientific Revolutions*, in which a 'paradigm' is defined by a field of study that is unified in terms of a set of agreed theories and methods amongst field members. Epistemological purism enables peer review to run smoothly within the field as well as project a coherent image of the field's domain and research trajectory to those outside it. These benefits are not to be taken lightly, especially in today's neo-liberal academic environment, where it is increasingly important to be clear about exactly what you stand for, so that you are evaluated by the right standards (*aka* inserted into the right market). The cost of acquiring this state of unity is that your field will probably have to sustain some intense internal in-fighting about fundamental issues, the most likely outcome of which will be a purge of some members of the field (who may well set up their own paradigms, etc.).

A good way for library and information science to think about whether purism is worth the cost is to distinguish between two sorts of internal fights that the quest for purity might require: (1) how to take forward a common heritage (e.g. 'What is information (for)?'); (2) how to fill a generally recognised standing need (e.g. 'How to improve information provision?'). If library and information science

professionals see themselves primarily in mode (2) – i.e. as epistemic service providers – then epistemological purism is probably not worth the cost of infighting. However, if people who see themselves in mode (1), yet at the same time project radically different futures for the field in light of contemporary challenges, then the fight is probably worth having, even if it means that certain field members will end up being purged – or excluded from the new paradigm that emerges on the other side of what will have been a ‘scientific revolution’.

#### NOTE:

This panel session is sponsored by the ASIS&T Special interest Group for History and Foundations of Information Science (SIG/HFIS) and reflects its concern with history and theoretical foundations of Information Science *as a whole*. It is expected to be of interest to all SIGs (AH, BIO, CR, DL, virt, H/FIS, ED, CRIT, IFP, III, and USE, MET, STI,...). As such, it does not fall tidily into any single themed track.

The panel has two purposes: First, it offers a forum to articulate more clearly recent concerns on how the field is developing as a whole, on how builds its scientific knowledge and on what theories and models they are founded. A second goal of the panel is an attempt to engage ASIST membership and LIS researchers elsewhere in the constructive development of their field – in bringing to light the theoretical foundations of research they carry out with the hope that this will help to better recognize the fields achievements and contours (boundaries).

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#### ACKNOWLEDGMENT

The idea for this panel was borne as a result of a paper entitled “Is Epistemological Purism Possible in Library and Information research” by Fidelia Ibekwe-SanJuan & Thomas Dousa which will be presented at the 3<sup>rd</sup> Biennial ISKO-UK Conference, London 7-9 July 2013. Some of the introductory material of the panel was borrowed from that paper with the kind permission of the authors. The panel offers a wider platform to deepen investigation of the topic and engage discussion with LIS researchers worldwide.