SLIS Alumni News

Information Research at SLIS: Magazine Feature Part 1

(Note: This piece has been reprinted from the Spring 2008 issue of SLIS Network, our semiannual alumni magazine.)

Introduction by Debora Shaw
Interviews and Summaries by Julie Harpring

SLIS's high rankings in research productivity and impact reflect the contributions of many faculty members. In the fall issue of SLIS Network we considered the school's contributions to social informatics. Now we turn to information research that focuses on the general properties of information and collections.

Faculty leadership in library and information science research enriches classroom experiences because students are introduced to contemporary practice within a theoretical context that enhances understanding and provides support for the next stages of their professional careers. Faculty involvement in research also helps to connect the school with alumni; SLIS graduates' encounters with real-world challenges have prompted discussions and even investigations that suggest new research paths and extend our understanding. How does the research being conducted currently by SLIS faculty members affect the everyday work of practitioners and the greater public?

SLIS faculty contribute to information research in several areas: the philosophy of information, complex systems, scientometrics, informetrics, scholarly communication, citation analysis, serials and journal ranking, discourse analysis, quantitative methods, evaluation and outcomes assessment, teaching and learning, and information seeking behavior. The following vignettes illustrate our school's contributions to information research.

Philosophy of Information

Major Themes
How do we define "information" and related terms, and why do we need to define them? The way we conceive of "information" shapes the discourse of academic research as well as our social conversations about libraries, journalism, entertainment, business, and other realms of public and personal life.

Example of Faculty Research

Elin Jacob: Tracking the Use of "Information Architecture"


Faculty member Elin Jacob and doctoral student Aaron Loehrlein conduct an extensive literature review and describe the various ways that practitioners and academics define "findability" and "information architecture" in a recent paper submitted to the Annual Review of Information Science and Technology.

In addition to this research, Jacob is particularly interested in issues of organization and representation and has recently worked in the areas of metadata and faceted classification structures.

Ron Day: The Importance of Defining "Information"


(The following was written as an in-depth look at the philosophy of information by Ron Day for SLIS Network. -Ed.)

Ludwig Wittgenstein thought that one of the most important jobs for philosophy was to help clarify linguistic meaning. The question of "what is information?" seems to me to be an exemplary instance of a question in need of such clarification, for confusions about the word "information" have led to some of the most absurd, but intractable, problems in the theory and even the practices of Library and Information Science and have led, repeatedly since the Second World War, to claims that "information" is the cornerstone for all science and human life. In reality, the term "information" means many things. In the same way as we wouldn't want our heart surgeon in the operating room to interpret the drawn symbol of our heart for the poetic meaning of love, we also need to be vigilant about the tendency to collapse all the meanings and ways of speaking about information into one unifying concept or determining to be information one object or event which we then might suppose could be managed or represented in a single or common manner.

Using a useful distinction of the philosopher Rom Harré (after that of John Locke), we may recognize that information is not a "real essence," but rather that it is a "nominal essence." What does this mean? If we take iron, for example, this "essence" or being has the same properties and chemical relations whether we call it "iron" or we call it by the French word "fer" or we use some other term (say, the chemical symbol for iron, "Fe"). However, information isn't the same type of essence or being. Rather, it is a word whose meaning is understood only by the way and context in which it is used (it is a "nominal" essence—that is, its essence is determined by the act of naming). This means that what information is is whatever we, as speakers of a language, decide to call a thing to be "information." For example, documents may be taken as information, directions to the gas station may be taken to be information, and the early natural philosopher Francis Bacon even spoke of nature as informing us. Each of these ways of using the term...
"Information" is, what Wittgenstein, termed "grammars"—or regularities—for the use of the term, and these are largely learned by learning a language (say, English, the language of librarianship or information professionalism, etc). Historically, there was a discipline called documentation that was well established before the discipline of information science began after the Second World War. Arguably, "documentation" provided a clearer, less metaphysical way of describing a large majority of the actual practices and materials in librarianship and allied professions than "information science."

It needs to be mentioned, as well, that there seems to be an historical tendency in the 20th and into the 21st centuries to think of information as if it were an empirical thing (one with intrinsic value, as well as the quality of being countable) and/or as if it were a referent somehow connoting factuality. However, earlier uses of the word in English used it as much to designate affects (e.g., Bacon, above) and possible knowledge, as well as to characterize statements of fact. In other words, there seems to be an increasing reification of the term "information" in English and Western European language use (and with this, an increasing confusion of the term as referring to a real essence). This is greatly harmful, not the least because it adds to the mystification and improper analysis of the social values and uses of information technologies and to the collapse of distinctions between various types of information. It also sometimes leads in Information Science to the mistaken application of empirical methods of research in studies of "information use."

In short, instead of beginning with the question, "what is information?" we might be better off starting with asking, "how is the word 'information' being used in a given situation?"

**Complex Systems**

**Major Themes**

How do we create models or simulations of the complex systems that occur in nature and society so we can study them more closely? How else can we represent or explain complex systems effectively? SLIS faculty members are researching ways to help the general public, scientists, and businesses gain a greater understanding of the inner workings of complex systems through new types of representation.

**Examples of Faculty Research**

Katy Börner: Visualizing Classification and Organization


"Complex systems are inside and around us," Börner says. "We need tools to study these systems, to understand and utilize/sustain them. Visualizations help to communicate and make sense of complex structures and dynamics."

The taxonomy visualization explained in Börner's article, which displays the United States Patent and Trademark Office patent classification scheme, is used to illustrate how the taxonomy visualization and validation tool created by her and her colleagues works. The patent visualization is one of 34 maps that have been on display in Börner's "Places & Spaces: Mapping Science" exhibit, which has been housed at the New York Public Library and, most recently, the American Museum of Science and Energy in Oak Ridge, Tennessee. Other maps in the exhibit display a wide variety of information visualizations on topics ranging from activity in Wikipedia to DNA development, providing powerful new ways to think about potentially overwhelming concepts.

More information about the exhibit can be found at [http://scimaps.org](http://scimaps.org), and summaries of more recent work of Börner and her team is available at [http://ella.slis.indiana.edu/~katy/gallery/07-openhouse/](http://ella.slis.indiana.edu/~katy/gallery/07-openhouse/).

**Scholarly Communication**

**Major Themes**

How do the economics and copyright practices of scholarly publishing affect the dissemination of new and important research to the academic community and society at large?

**Examples of Faculty Research**

Dean Blaise Cronin and Lokman Meho: Reflecting on the Field


It is almost thirty years since Latour and Woolgar provocatively described the scientifically complex activities performed at the Salk Laboratory as "the organization of persuasion through literary inscription." Almost overnight, academic writing ceased to be a straightforward, after-the-fact activity; it had been, to use the vague term, "problematized". To understand science and scientists, one needs to understand the material and discursive practices of those doing and reporting the science. And these days reporting is more often than not a collective activity. In almost every field of scientific endeavor, co-authorship is commonplace. "The author is dead, long live the contributor!" has become the fashionable cry. Sometimes the numbers involved are modest, sometimes massive. As a result, authorship, too, has been problematized. Who precisely is the author, and what exactly does authorship entail when literally hundreds of names appear on the byline? The issues (e.g., trust, oversight, ownership) are many and varied. One thing is clear: what holds for writing holds for authorship. As Biagioli observes: "scientific authorship, whatever shapes it might take in the future, will remain tied to specific disciplinary ecologies." There are at least as many kinds of writing and as many conceptions of authorship as there are disciplinary cultures and sub-cultures.

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Posted April 25, 2008

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