

Paradigms as Guides for Library Science Research

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Librarianship is not consistently perceived as a scientific profession, neither from within nor from outside of the profession. Comparing some of the definitions given to ‘science’ in a number of publications, including *Wikipedia*, one may be reasonably assured that while perhaps Library Science would be considered one of the “fields not canonically science,” there are some ways other than for the “added aura of seriousness or rigor that the term implies”(Wikipedia contributors, 3/28/2007) in which the Library Science field could benefit from clinging to and even focusing more self-consciously on the implications of the designation. Definitions such as “the ordered arrangement of ascertained knowledge” (Walker, 1995, p. 967) are appropriate to librarians. Science includes “the methods by which such knowledge is extended and the criteria by which its truth is tested” not to mention “study and control of nature as is, or might be, useful to mankind. *Theoretical science* derives hypotheses and theories, and deduces critical tests whereby unco-ordinated [sic] observations and properly ascertained facts may be brought into the body of science proper.”(Walker, 1995, p. 967)

It might be easier to get a handle on a greater extent to which librarianship should be scientific by considering the use of ‘scientific method’, “an orderly method used in scientific research, generally consisting of identifying a problem, gathering all the pertinent data, formulating a hypothesis, performing experiments, interpreting the results and drawing a conclusion.”(Barnhart, 1986, p. 578) As outlined in the remainder of the paper, I test out the feasibility of adapting the scientific method to a situation present in the 21st century academy that may rightly be an appropriate domain for the puzzle-solving activity that is Library Science research. First, though, some further words on scientific thought.

As is true in Computer Science, librarianship suffers from

misappreciation of the proper role of scientific thought. Scientific thought more refers to a way of thinking than to what are the thoughts about....It is, that one is willing to study in depth an aspect of one’s subject matter in isolation for the sake of its own consistencyWe know it should be efficient and we can study its efficiency on another day, so to speak....but nothing is gained... by tackling these various aspects simultaneously. It is...the only available technique of effective ordering of one’s thoughts. --Dijkstra (1974)

Dijkstra (1974) insists that “moral, ethical, religious and sometimes even political concerns ...confuse the issue.... A scientific discipline emerges with the –usually rather slow!—discovery of which aspects can be meaningfully ‘studied in isolation for the sake of their own consistency’, in other words: with the discovery of useful and helpful concepts.” He goes on to conclude that

Scientific discipline separates a fraction of human knowledge from the rest: we have to do so, because, compared with what could be known, we have very, very small heads. It also separates a fraction of the human abilities from the rest; again, we have to do so, because the maintenance of our non-trivial abilities requires that they are exercised daily and a day —regretfully enough—has only 24 hours. (this explains, why the capable are always busy.)
(Dijkstra, 1974)

Kuhn’s elaboration of the function of paradigms helps us to understand how normal research can take place with the confidence that results will be cogent and not a random gathering of facts. A paradigm is

like an accepted judicial decision in common law, it is an object for further articulation and specification under new or more stringent conditions. To see how this can be so, we must recognize how very limited in both scope and precision a paradigm can be at the time of its first appearance. Paradigms gain their status because they are more successful than their competitors in solving a few problems that the group of practitioners has come to recognize as acute. (Kuhn, 1970, p. 23)

As the paradigm operates, practitioners are free to go about puzzle-solving activities with the conviction that they will yield solutions that are useful. When obvious, pervasive anomaly occurs, the paradigm dissolves. Scientists are highly disturbed when their paradigm is thrown into question because they don’t know what their job is anymore. “Lord Kelvin first pronounced [X-Rays] an elaborate hoax....(as) they violated deeply entrenched expectations implicit in design and interpretation of established lab procedures.” Thompson 1911 (as cited in Kuhn 1974, p. 59) I contend that we as the Library Science profession are, like Lord Kelvin, experiencing disturbance at the loss of our previously held paradigm. It is time for the thinkers among us to carefully set aside our anxiety for a clear-headed analysis of what research might be most useful for our continued role as scientists. And, as Kuhn (1970) declares, “there is no such thing as research in the absence of a paradigm.” (p. 79)

Let’s assume that the paradigm we had operated under was one where we were the subsidizing and organizing vehicle for content. Our activities involved facilitating access and

improving the breadth of our organized collections. Those activities were meaningful. Data could be collected and analyzed, improvements could be made based on data.

Today the academy as a whole values technology as a means of gathering and organizing data. We fail to coordinate our crucial decisions about purchasing and exploiting technology. We fail to pool our knowledge for figuring out best practices. I see this trend as our own rendition of the “proliferation of versions of a theory (which) is a very usual symptom of crisis.” (Kuhn, 1970, p. 71) Our institutions are marked by disjointed efforts of many offices and individual faculty doing the same thing in slightly different ways. Electronic Reserves are being replicated as faculty scan into course management systems, for instance. “Integrating library tools into course management system systems should be an obvious priority.” (Lewis, 2007, p. 9) This is only one example of how we need to be reaching out to others on campus and beyond to coordinate ease of access. The ideal situation to counter the tendency towards fragmentation is a “comprehensive research environment” such as the one referred to in the University of Minnesota Libraries study (as cited by Lewis, 2007, p. 21).

Let us consider how Prensky’s (2001) “Digital Natives and Digital Immigrants” offers a coherent, timely paradigm to shift into. Digital Natives are the users the academy increasingly serves.

Digital Natives are used to receiving information really fast. They like to parallel process and multi-task. They prefer their graphics before their text rather than the opposite. They prefer random access (like hypertext). They function best when networked. They thrive on instant gratification and frequent rewards. They prefer games to ‘serious’ work....But Digital Immigrants typically have very little appreciation for these new skills that the Natives have acquired and perfected....and so choose to teach ...above all, seriously....Digital Immigrants think learning can’t (or shouldn’t) be fun”(Lewis, 2001, pp. 2-3).

The content of what we convey, say through Bibliographic Instruction, may remain, he contends, but we “have to learn to communicate in the language and style of their students...going faster, less step-by-step, more in parallel with more random access”. (Lewis, 2001, p. 4) Given that Digital Immigrants do not know how to adapt to the needs of Digital Natives, getting to know what they do is vital. There is simply no other way as Digital Immigrants to gauge our usefulness, let alone assess it, without entering the Native Immigrant territory. The existence of Digital Natives along with the Digital Immigrants who serve them in the quest for knowledge acquisition is certain enough to serve as our new paradigm.

Lewis (2007) began his visionary article “A Model for Academic Libraries 2005 to 2025” with the following: “A crisis is a terrible thing to waste.” --Paul Romer (as cited in Warsh, 2006, p. 408). Paradigm shift is precisely what Lewis addressed implicitly. What he really did was provide the solutions to the crisis without explicitly identifying the guiding paradigm behind it. Lewis (2007) emphasizes in no uncertain terms that “rigorous and continuous assessment of practice” be the hallmark of everything we do. “By focusing attention upon a small range of relatively esoteric problems, the paradigm forces scientists to investigate some part of nature in detail and depth that would otherwise be unimaginable.” (Kuhn, 1970, p. 24) One simple study could get the paradigm into the test phase. We could follow Lewis’ advice by “repositioning in-person interactions so that they are used for the most complex and difficult interactions. Traditional reference desks, even when extended with chat and e-mail are probably not the best strategy.”(Lewis, 2001, p. 10) Instead of sitting for hours at a reference desk, perhaps reference librarians could be exploring everything the Digital Natives ‘play’ and learn with from MySpace to Second Life. We need to explore Facebook, know what our courseware systems are all about, use them, and collaborate with all centers that assist in student success. “In all cases there is a blurring of the boundaries that separate the library from the rest of the campus and the external information environment.”(Lewis, 2007, p. 13)

In the midst of our change, we librarians need to realize the level of anxiety experienced by our colleagues as the paradigm shifts. “In my view an explicit strategy, vetted by the campus, will be required. Drifting and incremental development will not be successful.” (p. 13). I look forward to being in productive culture populated by two very different Digital persons, the Natives and Immigrants, striving for a comprehensive research environment. All the while, librarians should be busy formulating hypotheses, conducting experiments, integrating results at least until the proposed paradigm falls apart.

References

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