Acquiring Minds Want to Know/ Paradigms

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Acquiring Minds Want To Know

Column Editor: Joyce L. Ogburn (Yale University Library)

A GLIMPSE OF PARADIGMS
by Joyce Ogburn

The concept of the paradigm, as generally cited in the literature, derives from the work of Thomas Kuhn in the 1960’s. Kuhn, an historian of science, set out to explore how science, and scientists, actually worked. Kuhn found that scientific activity tends to be governed by a set of principles, a world view and a common methodological approach to problem solving. Kuhn names this commonality a paradigm. Paradigms define the practice of normal science and the problems which are to be solved.

Kuhn also noted that the education of scientists plays a crucial role in supporting and reinforcing the prevailing paradigm. Budding scientists are taught by example and with proscribed solutions to scientific problems. Competing methods are not taught. This educational approach allows new scientists to enter into the scientific community with the same methods and approaches of their colleagues. In other words, they are able to practice normal science.

In addition to explaining the practice of normal science, Kuhn attempted to understand how science changes over time, especially through so-called revolutions. He believed that science changes as anomalies accumulate through normal science, to the point where the paradigm is no longer applicable to the problems at hand. This change precipitates a crisis in the science, which is followed by a paradigm shift. During the shift, one paradigm is rejected and replaced with another. The shift should truly be a revolution, where there is a complete break in research traditions, and where normal science is radically transformed.

Since a revolution has occurred, the two paradigms (the previous and the new) are completely incompatible and, in Kuhn’s words, incommensurate. After the shift, scientists can no longer operate in the same manner as before and can no longer envision problems in the same light. Additionally, in this model, there is no cumulation or progress in scientific knowledge, though there may be overlap in terminology.

Kuhn stipulates the following characteristics for a successful paradigm:

1. The paradigm must serve to resolve the crisis.
2. It need not explain all anomalies, but it is usually an improvement on the previous paradigm.
3. One should be able to use the paradigm to make predictions.
4. A paradigm should be aesthetic, its explanation simpler than that of its predecessor.
5. Often a generation of change is required before a paradigm is accepted.
6. The choice of a paradigm is not always rational; it is not always possible to know what constitutes the better of two paradigms, and the choice of paradigm may be a leap of faith.
7. A paradigm need not be true. The concept of theory is different from that of a paradigm. Theories can be proved or disproved, while paradigms are not subject to proof or verification. Theories may also come and go during the duration of the paradigm, and a theory accepted under one paradigm may be subject to question under another.

A familiar example of a paradigm in the sciences would be that of evolution by natural selection. Although evolution as a concept was beginning to be adopted in the natural sciences before 1859, it was Darwin’s articulation of the mechanism of natural selection in The Origin of the Species that allowed evolution to become the backbone of scientific research and teaching in the biological sciences. It was also Darwin’s model that helped both to sever the ties between church and science and to put aside the notion of progress being inherent in change.

Kuhn explicitly states that the paradigm concept is not applicable outside of the hard sciences. A paradigm applies to scientific research activity. He saw disciplines outside of the sciences as preparadigmatic. In his view, the social sciences have no paradigms, as they are governed by competing ideas and an educational system that encourages divergent, rather than convergent, thinking. He argues that different modes of research and thinking compete within social science disciplines and that normal science, the process by which a paradigm is amplified and reinforced, is not practiced.

Kuhn’s work has received its share of criticism and praise over the years. Kuhn himself has written more detailed explanations of his original thesis. Criticism has centered on three aspects: 1) the vagueness of the concept of a paradigm, 2) the noncumulative nature of scientific achievement, and 3) the apparent “dullness” of normal science.

The philosophers and historians of the very disciplines Kuhn says are governed by paradigms have been the more critical and the less accepting of Kuhn’s work. Many have accepted the general idea of a paradigm as a world view, but have rejected Kuhn’s concepts of normal science and the noncumulative aspect of scientific work.

Social scientists have adopted the paradigm concept with vigor. Social scientists (and I include librarians in this rubric), often use the term paradigm as a convenient label to replace theory, philosophy, or methodology.

Library science arguably belongs in the social sciences. The original impetus for the subject of this column was the recent talk of a paradigm shift from ownership to access.

The reader may wish to examine the paradigm concept very closely before adopting this meaningful and powerful concept to trends in librarianship. At

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the end of this column is a bibliography of sources which may help illuminate
the problem of the paradigm.
Read a few and then ask these questions of yourself:

*** Can we reconcile Kuhn’s vision

with the practice of librarianship?

*** What if we conceded that
librarianship, as a social science,
an applied field and service
profession, could have a
paradigm?

*** What might the paradigm look
like and how would it operate?

*** Are changes in librarianship truly
paradigmatic, or changes along a
continuum?

The Kuhnian concept is so
compelling that it begs to be read in
the original works and this
condensation does not do it justice. I
urge you to read his works and then
decide yourself. You may choose to
reject Kuhn’s definition of a paradigm
and apply the paradigm concept to
explain general changes and
philosophies in librarianship. But ask
yourself whether by rejecting Kuhn’s
concept we have gained or lost
something in the process and whether

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system? Do they have to build
interfaces to the various VANs with
their mixed bag of requests? Or, can
they simply provide the basic business
data elements that work with any one
of the many off-the-shelf translation
software packages libraries can buy?

Realizing that the ILS vendors, book
wholesalers and serials subscription
agents are the key to implementing
EDI — BISAC and SISAC are holding
a hands-on, invitation-only workshop
for those folks at 2:30 p.m. on Friday,
June 25th in New Orleans. Invitations
are going out to those on our lists; if
you are in one of these categories and
don’t receive one, please call me at
212-929-1393. We hope that this frank
discussion of alternatives will provide
a better understanding of the
possibilities and expedite the
implementation of EDI in the library
community as a whole.

CONCLUSION

In the ever-chaotic world of
standards, I hope that this article
provided you with some insights into
the problems so that you may help find
the solutions. If you have ideas or
suggestions stimulated by the Chaos
described here, and want to air your
concerns publicly, send a letter to
Katina. Or, you can call me at 212-
675-7804 or fax me at 212-989-7542.
If you want to participate in a listerv
devoted to the Quasi-SICI and other
implications of publication patterns,
contact Joyce McDonough, Chair of
SISAC’s Great Expectations
Subcommittee at Internet —
jm86@unix.cc.columbia.edu. Bitnet
— jm86@unixf. Voice (if you have
a problem getting through) —
212-854-4764. As always, it won’t
work without your participation!
Thanks.

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up and people are waiting for you to
arrive.”

Maybe I gulped. Maybe I sweated.
Maybe my voice went up an octave. I
don’t remember. What I do remember
is that then and there I had a problem.
I had to go to the meeting as scheduled
and I had no shoes. Talk about caught
between a bare foot and a library.

So what happened? What did I do?
The final result was (to my best
guess) the first ever extensive
Approval Plan Profile review done by
a salesperson wearing a blue pin-stripe
suit, white button-down shirt, burgundy
tie, blue sox, and — flip/flops. True
story. No kidding. You heard it here.

There are hundreds (nay thousands;
what? millions) of stories to be shared
by the readers of Against the Grain. If
I don’t receive any I’ll have to either
continue telling tales on myself or
resort to sharing something else.
Readers, you really don’t want that to
happen. Write me . . . . .

Book Pricing Update
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press title. A true bargain, though, must
be wanted or needed, and at most
academic libraries, these books are
neither.

If titles don’t sell, publishers cannot
afford to produce them. In the February
24, 1993, Chronicle of Higher
Education, Harald Bakken and Mischa
Richter have a cartoon depicting the
rejection of a manuscript. Says the
publisher to the hapless author,
“Basically, we feel that it’s too popular
a treatment for the university presses
and too scholarly a treatment for the
mainstream presses. Our suggestion is
that you add a little sex and violence
and try Hollywood.” Failing that,
university presses may swing back
toward the traditional scholarly
monograph, for the traditional scholarly
market.