The Study of Information Revisited:  
Chaos in the Emergence of Disciplinary Identity

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ABSTRACT
This research will develop time-series fractal maps of LIS and CIS. The maps will be used to trace the trajectory of Information Science from its beginnings in 1965 into the future. Following Machlup and Mansfield (1983), we plan to analyze the logical, methodological, and pragmatic relations among and between these two areas of study centered on information creation, access, distribution and use. Our goal is to facilitate understanding of the future trajectories of the discipline of Information Science, and thereby, those of LIS and CIS through systematic examination of past and present trends. Because these trends are neither linear in their progression nor take place in a vacuum, our analysis will be guided by the fractal theory developed by Andrew Abbott in Chaos of Disciplines.

Categories and Subject Descriptors
D.3.3 [Computers & Society]: Social issues – miscellaneous.

General Terms
Human Factors, Theory.

Keywords
Information science, disciplinary identity, history.

1. INTRODUCTION
In The Study of Information: Interdisciplinary Messages, Machlup and Mansfield (1983) identified more than forty disciplines and sub-disciplines engaged in the study of information between the end of the Second World War and the publication of the volume. They invited representatives of a variety of disciplines to “analyze the logical (or methodological) and pragmatic relations among the disciplines and subject areas that are centered on information” (p. 3). Included were sections on two different—although perhaps overlapping—disciplines bearing the name Information Science:

Computer and Information Science (CIS), and Library and Information Science (LIS), each having its origins in the early sixties. The authors of the two sections separately point to a common semantic quirk that sets these disciplines apart from the rest: each is coupled or “anded” to another “science.”

More than a quarter of a century later, the scholarly discourse generated by the book retains its vitality and interest. While the titles associated with the two disciplines have persisted, variations have been tested and discarded. Informatics, suggested by Gorn as an alternative to Computer and Information Science, had short-lived currency in each of the disciplines. Many of the academic units that house LIS programs have removed “Library” from their names, but their programs continue to focus, albeit to varying degrees, on libraries as institutions and librarianship as practice. Most recently, a relatively small interdisciplinary group (twenty-two institutional members as of April 2009) has announced its intention to form a new “iField.” Does this announcement herald a convergence, or will the iField become the next battleground in a seemingly unending turf war?

2. RESEARCH DESIGN
Our analysis will begin with data collected from a wide variety of sources using a mixed methods approach. Abbott’s analytic framework will be applied to clarify the nature of the evolution of these disciplines as Traditional differentiation, Fractal differentiation, or Fractal cycle. We will summarize and examine the outcomes of the research to determine how the information disciplines have evolved over the past 45 years with an eye to predicting their future trajectories.

The analytic framework will provide the predictive power needed to suggest whether the iSchools’ iField initiative will culminate in convergence or in an extension of the ongoing turf war. We will
combine content analysis, interviews, co-citation network analysis, MPACT metrics, and information visualization techniques to develop ten “snapshot” maps at five-year intervals to evoke the shifting terrain and identify the formation, dissolution and reformation of invisible colleges. The fractal maps of the disciplines of LIS and CIS for the period from 1965-2010 will be compared to the descriptions and trajectories suggested by the experts contributing to the two sections in Machlup and Mansfield (1983).


3. **ERAS**

3.1 **Conflict & Ingestion: The Development of Information Science, 1965-1980**

The year 1965 was selected to begin the analysis since it is usually recognized as the date when the term “information science” first became associated with the two academic disciplines under discussion. In that year, the American Documentation Institute changed its name to the American Society for Information Science. Taylor’s “Professional aspects of information science and technology,” published that year, includes the earliest definition of the term.

Using the analysis techniques outlined above, we will to develop four snapshot maps at five-year intervals (1965, 1970, 1975 and 1980) to evoke the shifting terrain and identify the formation, dissolution, and reformation of invisible colleges during this formative period. The results will be used to evaluate the predictions and conclusions drawn by the authors contributing to relevant chapters of The Study of Information, and will be concatenated with those for subsequent eras for analysis of trends over time.

3.2 **Mainframe/Library to PC: The Evolving Role of the Human Intermediary in Information Access 1980-1995**

The human role in the information access equation is expected to emerge as the defining characteristic of the period from 1980-1995, particularly as it relates to organizational change within the disciplines of LIS and CIS. Humans, processes, and context comprise organizations. Organizations reorganize and redefine themselves as a result of external pressure. Forces of external pressure include technological advancements, competition, economics, and politics. Cycles of change grow shorter as a result of the increase in developments in information technologies and the social and economic contexts of information. The advent of the Internet, particularly the World Wide Web, fueled a paradigmatic shift in the information production and access environments driving the information science professions into discontinuous change. In order to determine which of the mechanisms: traditional differentiation, fractal differentiation, or fractal cycle is operating in the evolution of the LIS and CIS fields toward an iField, we undertake a macro-analytical approach to examining changes in labels and descriptions of the organizations that educate information professionals in both disciplines and the research foci of their respective faculties.
To capture shifts in time, analysis will be partitioned into 3 5-year segments; 1980-1985, 1985-1990, and 1990-1995. Interviews will be conducted with the three surviving founding deans of the iSchools movement to provide historical perspectives on the forming of the iSchools consortium. Content analysis of archived and current school and professional organization websites, postings to the Jesse listserve, scope statements of LIS and CIS research journals, and abstracts and papers from professional conferences the researchers will be conducted to identify how human decisions have shaped organizations. Changes in school names, repositioning of organizational philosophy as evidenced through restatement of organizational missions, shifts in faculty expertise as expressed through job vacancy announcements, and evolution of ideas through research method and scope will be examined. Of particular interest is the intersection or differentiation of the concept of information as defined by the LIS and CIS disciplines in the context of the iField movement.

3.3 Place/Library vs. Virtual Space/Digital Libraries: The Internet and Disciplinary Identity, 1995-2010

For the period from 1995-2010, we will continue the analysis of information science by examining the social and technical implications of the Internet on the development of disciplinary identity of LIS and CIS. The year 1995 was chosen because it marks the beginning of the “dot.com bubble,” during which stock market values in many Western nations, and particularly in the US, increased rapidly from growth in the new Internet sector and related fields. The emergence of the Internet and the World Wide Web enabled expanded applications in these dotcom businesses, allowed remote presence, invoked the existence of digital libraries, and brought upon more challenging roles for databases, human computer interaction and integrative programming. In addition, 1995 marks the emergence of information technology degree programs within LIS and CIS. More recent changes, such as the emergence of Web 2.0 and social networking tools further complicate the disciplinary identity formation process for both CIS and LIS. Three fractal maps of the disciplines of CIS and LIS will be developed for the period from 1995-2010, to illustrate the changes in disciplinary identity and compare these to those of the earlier periods. To depict change over time, analysis will be partitioned into three 5-year segments; 1995-2000, 2000-2005, and 2005-2010. We will determine which of the mechanisms: traditional differentiation, fractal differentiation, or fractal cycle is operating within each time segment. In examining the evolution of LIS, we pay attention to the developments within each discipline and its affiliated professional organizations to determine the effects on information science education. Using document analysis and interviews, we scrutinize the formation, dissolution and reformation of these professional organizations in response to the corresponding technological and social challenges faced in each segment.

In addition to examining professional organizations, we will examine the emergence of the iSchool movement, and determine its convergence and divergence from LIS. We will investigate the formation of the iField in response to the corresponding technological and social challenges faced in each segment. Aspects of examination will include changes in school names, repositioning of schools’ missions and visions, changes in the need for faculty expertise, and evolution of ideas through research method and scope. Page Numbering, Headers and Footers Do not include headers, footers or page numbers in your submission. These will be added when the publications are assembled.

4. REFERENCES
