

A PROPOSED MODEL FOR PARADIGMATIC RELATIONS WITHIN AN EMERGENT DISCIPLINE*

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Resumen: Este artículo sirve de vehículo para la propuesta de un modelo que describa los cambios progresivos relacionados con el desarrollo de disciplinas y paradigmas. Este tipo de cambios depende directamente del grado de consistencia alcanzado por los grupos teóricos. Consistencia, en este caso, equivale al predominio de teoría y de paradigma. Los presupuestos en que se basa nuestro modelo son aportados por la tradición del interaccionismo simbólico. El análisis de este modelo se realiza mediante su comparación con las teorías de Thomas Kuhn. La historia reciente de la Enseñanza de la Biblioteconomía y Documentación en EEUU sirve como contexto y como ejemplo sobre el que aplicar este modelo.

Palabras clave: Cambios de paradigma. Teoría. Cambio disciplinar. Interaccionismo simbólico. Enseñanza de la Biblioteconomía y Documentación. Teoría de las Revoluciones Científicas de Thomas Kuhn.

Abstract: This article is the vehicle for purposing a model for mapping the processual change associated with disciplinary and paradigmatic development. Change of this sort is contingent on the degree of consistency achieved within theory groups. Consistency, in this case, is equated theory and paradigm dominance. The symbolic interactionist tradition supplies the assumptions on which the model is grounded. Examination of the model is accomplished by contrasting it with Thomas Kuhn's theory. The recent history of library and information science education in the U.S. serves as context and exemplar for application of the model.

Keywords: Paradigmatic change. Theory. Disciplinary change. Symbolic interactionism. Library and information science education. Thomas Kuhn's paradigmatic revolution.

INTRODUCTION

The purpose of this paper is to examine -the issues surrounding disciplinary change and the degree of disciplinary maturity as it applies to library and information science (LIS). A model and a theory of the development of the of library and information science discipline will be proposed and discussed. The theory will then be applied to the growth and development of the discipline of LIS in the U.S. However, before such a theory can be articulated the reader needs to have some familiarity with the general

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context of the problem as background and the assumptions that ground the author's perspective and serve as the foundation for the theory will be discussed.

We begin by examining the context and assumptions associated with a model for mapping a theory on disciplinary change and development in LIS. Among the key contextual variables is the role of library and information science education. Therefore, any model of a library and information science must also include consideration of the graduate professional education component.

1. BACKGROUND AND ASSUMPTIONS

In the course of discussing terms such as discipline, paradigm, and theory, the role of the individual tends to be overlooked. The terms become reified, taking on a life of their own, independent of the individuals and groups that create, articulate, and implement them. Without individuals, there would be no disciplines, paradigms, or theories. In everyday life, the creation and maintenance of these concepts are the result of interactions and negotiations by and between individuals and groups. Disciplines, paradigms, and theories are social constructions.

The concept of social construction is grounded in the symbolic interactionist tradition and is linked to the negotiation and interpretation of differing cultures and sub-cultures that comprise the multiple societies that form the global village of which we are all a part. The same assumptions that ground symbolic interactionism also are understood here as the prior conditions to understanding the processes of the social construction of disciplines, paradigms, and theories.

Prior conditions to "knowing" transcend the formal demarcation of disciplines and paradigms. They are also an elemental component of any model or method that purports to yield previously unrecognized or undeveloped strategies for accumulating information and potential future knowledge.

Hazelrigg (1989) addressed the question of "prior condition" by what he calls "epistemological relativism". He describes its basic thesis as:

"... a claim to know is contingent on something that is prior to utterance of the claim, and its prior thingness or condition is determinative of the locution or 'propositional content' of the claim to know; therefore, the 'truth value' of a claim to know is relative to the presence of that prior condition." (p. 149)

The model and analysis presented -in this paper is not excepted from, but in fact contingent upon, the epistemological questions of "prior conditions," "knowing," and "thingness." Therefore, there are a number of epistemological assumptions that serve as "prior conditions" which inform this analysis. The tradition that serves as the cornerstone from which these assumptions are grounded is that of symbolic interactionism.

These foundational basic epistemological assumptions on which this work is based will be at least briefly explored. Blumer (1969) defined symbolic interaction as "...activity in which human beings interpret each other's gestures and act on the basis of the meaning yielded by that interpretation" (pp. 65-66). Central to Blumer's definition is the role of interpretation. Social activity and meaning are mediated by individual and

collective interpretations. Interpretation is the bond that binds the self and behavior together.

Interpretation for an individual involves a process of internal interaction which Blumer termed "self-indication" and is similar to Cooley's (1962 [1902]) concept of the "looking glass self". "'Self-indication' is a moving communicative process in which the actor notes activities, assesses them, gives them meaning, and decides to act on the basis of the thing's meaning" (Blumer 1969, p. 81). Conscious human action, then, can be said to be constructed through the processes of self-indication. Social action is the process of individuals fitting "... their respective lines of action to one another through a process of interpretation..." (Blumer 1969, p. 84). As a result, negotiated and shared social meanings are of vital importance as the basis on which interpretations are constructed. Consequently, understanding the significance of meaning relating to any given context is critical. Conscious human action is, therefore, not merely the result of external forces but is a consequence of the dialectical activity of the process of interpretation in which the actor's experience, while simultaneously employing previously agreed upon societal meanings, serves as a basis for the process of socially constructing new meanings and altering pre-existing meanings.

The basic assumptions about man and society employed here are based on the centrality of the individual as the unit of analysis. This concept is evident in the terminology referring to the social role of human agency as actor rather than reactor. It assumes human beings to be activity or action oriented. By viewing society in the context of agency action, the roles of power and social structure are recognized as critical elements in understanding individual and group action. The concepts of power and structure are viewed here not as fixed social relations but as dynamic processes constructed by individuals and /or groups. There tend to be site and time elements that condition and contextualize the field for individual action.

Disciplines and paradigms are frameworks in which collective activity takes place and is conditioned by elements such as social structure and culture. The collective activity that emanates from and is contextualized by the current and evolving disciplines and paradigms are the product of the social constructions of individuals or group interpretations of the everyday activities in which they simultaneously participate, observe, and interpret. According to Blumer (1969), "...organization and the changes in it are the product of the activity of acting units and not 'forces' which leave such acting units out of account" (p. 87).

A key step in the process by which conscious change takes place is one in which actors, whether they be individuals or groups, interpret the actions of others. Accordingly, actors develop and fit their actions and behaviors together in terms of these interpretations to form group action. In this sense, actors "...define' each other's actions" (1969, p. 79). This process of assigning definitions includes the concepts of intentionality and transformation. Consequently, conscious social change can be understood as the intentional transformation of interpretations into action.

The key element that grounds transformative activities is power. The power to influence choices, the power to structure interactions, the power to construct, the power to decide, the power to mobilize resources. Understanding that power occupies a key role

in the development of paradigms or disciplines, attention to its formative character is necessary to appreciate its impact as a conditioning element that is site-specific, time-specific and, agency-specific. This formative aspect of power is characterized by the concept of causality as found in the writing of several authors (e.g., Clegg 1989; Harre and Madden 1975), refer to as "causal power." "Causal power" eventuates "under certain standing conditions'...[and] will be manifested to the extent that not only certain structural conditions prevail but also there are no impediments" (Clegg 1989, p. 121). Hence, disciplines and paradigms are developed within the bounds of the structure of processual practices and conventions which are causal by nature.

2. INTRODUCTION TO MAPPING DISCIPLINARY DEVELOPMENT AND CHANGE

Disciplines, paradigms, and theories are no more than their proponents. That is, the influence and power of a paradigm is contingent on that which their proponents can generate and wield. If this is the case, as is posited here, that the proponents are the paradigms that they advocate then the means of analysis for understanding the mechanics of paradigmatic relations would be the same as those employed in understanding social relations in general, i.e., the social sciences. However, theoretical development and change is linked to the work of individuals and groups, although frequently an individual undertaking. As a result, it is necessary for researchers to access individual interpretations, definitions of situations, and other social science categories such as context and power. Such access is consistent with the methods of symbolic interactionists.

In addition, it is important to keep in mind that paradigmatic and theoretical change is not a regular, predictable process. Oliver and Marwell (2001) notes:

"In the real world of social theory, however, theories not only come and go or rise and fall, but they may transmute into truncated or distorted collections of ideas that are only loosely grounded in the original statements; they may become embedded as crucial parts of 'other' theories..." (p. 292).

Those that write and do research on the nature of paradigmatic change tend to find themselves caught in a level of abstraction that makes analysis difficult. Most prominent of this group in the last quarter century is Thomas Kuhn (1962, 1970 rev.). Kuhn's model has been the standard for examining disciplinary change. Hence, it will be his model that will be used as a point of departure for construction of a more complete model.

When a topic as abstract and ambiguous as disciplinary and paradigmatic change is to be examined some basic working definitions will be constructed in an attempt to avoid as much unnecessary ambiguity as possible. One reason the social construction of meaning is such an important step in this analysis are the problems Masterman (1970) found in the first edition of Kuhn's *The Structure of Scientific Revolutions*. Masterman (1970) identified 21 different ways in which Kuhn used the term "paradigm." In an effort to avoid the problems of ambiguity Kuhn encountered in his definition of "para-

digm,” the following definition has been selected as supplied by Glazier and Grover (2002):

A paradigm is “...described as a framework of basic assumptions with which perceptions are evaluated and relationships [and values] are delineated and applied to a discipline or profession” [Grover and Glazier, 1986, p. 234] (p. 5).

Kuhn's work (1962, 1970 rev. ed., 1977) on paradigmatic revolution has been recognized as the model for defining the nature of disciplinary maturity. Kuhn argues that a different concept of science emerges when the historical record of scientific research activity is examined. He argues that the natural sciences operate under a set of paradigms on which consensus has been established overtime by other scientists. For Kuhn, “paradigm” can be characterized, as defined in the 2nd edition, as achievements that are sufficiently unprecedented to attract an enduring group of proponents away from competing modes of scientific activity. In addition, a paradigm must be sufficiently open ended in order to leave room for undefined problems for the group to resolve. Acquisition of agreement on a paradigm is a sign of maturity in the development of any given scientific field. This is what Kuhn called normal science -- a period of relative normalcy.

It is during the times of normal science that knowledge is accumulated. Kuhn further argues that during periods of normal science, research work is predominantly directed toward solving puzzles, not testing new, potentially dominant paradigms. For Kuhn, paradigm testing occurs only after persistent failure to solve noteworthy puzzles that have given rise to a paradigmatic crisis. Testing occurs only as part of the competition between rival paradigms in order to ascertain dominance. These are times when consensus does not exist. Without consensus, knowledge accumulation cannot occur. According to Cole (1983), “...consensus is a necessary condition for advance, the scientific community will reject ideas which will “prematurely” break down the consensus” (p. 135). Paradigms guide research -- not just random activity. Transformations in science take place during scientific revolutions in which transformation in the form of transitions from one paradigm to another via Kuhn's “paradigm revolutions” are the usual pattern of development of mature science rather than the exception.

According to Kuhn, times of paradigmatic revolution occur when a discovery of such magnitude is made that long standing theories and paradigms, once thought immutable, are suddenly overturned. Emergence of a new paradigm affects the structure of the group that practices in the field through the formation of specialized journals, the foundation of specialist's societies, and a strong claim for a special place in the academic curriculum. Paradigms gain status because they are more successful than their competitors in solving problems that practitioners define as important.

Difficulties found with Kuhn's model extends beyond the terminological problems discussed above. Kuhn's theories of paradigmatic change and maturity is at best an uneasy fit for many disciplines, particularly those in the social sciences. Bernstein (1976) argued that Kuhn's influence on the social sciences “...has been a confusing and obfuscating one” (p. xvi). Bernstein later points out, “...the fault lies primarily with the

way in which his themes have been ap-pro-priated by students of politics and societ-y" (p. xvii).

Hazelrigg (1989) suggests that Kuhn's initial formulation of his view of scientific revolutions as progressive is perceived as heretical by some critics (e.g., Laudan 1977) because of his use of social science factors outside of the realm of natural science to examine its history. Gould (1989) has traveled a similar road by challenging the traditional scientific perspective by viewing history as process and challenging the accuracy of Darwin's theory of evolution. Laudan (1977) argues that science would be best served if each of its achievements were examined by "a subtle analysis of the actual case" (p. 127). For Laudan (1977), Kuhn's method of describing the progression of the history of science as a discipline by considering external factors such as "political factors" is inappropriate. Laudan (1977) seems to cast Kuhn in the role of cynic when he states that "scientific revolutions are regarded as progressive because the 'victors' write the history and they would hardly view their own successes as anything but progressive" (p. 138). The perspectives of these writers are notable for challenging much of Kuhn's work on the grounds that it tends to be overly abstract and ambiguous while viewing change in the scientific tradition as far too narrow.

3. A MODEL FOR EMERGENT DISCIPLINES

At this point, a model for understanding the nature of paradigmatic relations is proposed. The exposition begins with the argument that as a discipline develops, it begins with several externally divergent paradigms. The relations between divergent paradigms can be characterized as loosely coupled (Weick 1976), accompanied by a high degree of environmental ambiguity (McCaskey 1982), and a general lack of external consistency. These relations often reflect the internal structure of divergent paradigms.

As a result, divergent paradigms are often comprised of loosely coupled, disorganized, and often inconsistent theories. This is referred to as internal divergence. As research proceeds, the theories that make-up the paradigm are developed and become more consistent, more organized, and more tightly coupled. This is referred to as internal convergence.

It is important to keep in mind at this point that a paradigm is "a framework of basic assumptions with which perceptions are evaluated and relationships are delineated and applied to a discipline or profession" (Glazier and Grover 1986, p. 234). The danger of over-emphasizing the role of paradigms, as noted earlier, is its potential reification and development of "a life of its own." However, paradigms develop "a life" only in the sense that their proponents use them to orient and direct their work.

Internal, external, divergence, and convergence of theories and paradigms are not the result of "natural law" or mystical force. Theoretical and paradigmatic change and organization is the result of the work of individual researchers and teachers working collectively or individually. Collective activities such as disciplines are created between these loosely-knit individuals and groups through both formal and informal communication. As a result, many of the same principles that we apply to the study of organizations and other social collectives are applicable here. In this case, the organizations and co-

llectives are identified by the paradigms they employ. Dynamics such as power, resource allocation and dependency, socialization, environmental ambiguity, values, negotiated order, and dialectical relations are useful concepts in understanding the political and social aspects of paradigms as organizational entities.

The internal convergence of a paradigm is characterized by increased influence both politically and intellectually within the discipline based on its perceived degree of higher internal consistency and its ability to provide a framework to facilitate achieving intra-disciplinary consensus designed to explain a given state-of-affairs or set of variables. The increase in influence of a paradigm means an increase in the power of its proponents to control vital resources, set disciplinary norms, and provide the definition of disciplinary and paradigmatic boundaries. When this level of influence is achieved, a paradigm is said to be dominant in a discipline.

At this point in the developmental process of a discipline, the perception of the emergence of a dominant paradigm tends to coincide with a general external convergence of subordinated paradigms in the discipline around that dominant paradigm. Such a state of general convergence can be methodological, ideological or often both. Most subordinated paradigms within the discipline do not give up their own identities. They continued to work out their theoretical inconsistencies that are characteristic of a state of internal divergence until they are able to achieve internal convergence.

One means that can be used to better understand the preceding exposition is by viewing the discipline in organizational terms using DiMaggio and Powell's (1983) concept of institutional isomorphism as the basis for analysis. The discipline can be viewed as an organizational field and the various paradigms in the discipline can, in turn, also be viewed as the organizations in an organizational field.

DiMaggio and Powell contend that an organizational field can be structured in such a manner that the member organizations that comprise it come into conformity with the dominant organization because of the process of institutional isomorphism. Three types of institutional isomorphism are identified: coercive, mimetic, and normative.

When applied to a discipline, coercive isomorphism occurs when one or more paradigms in the discipline are forced into conformity with the dominant paradigm. This is based on a perceived asymmetry of power favoring the proponents of the dominant paradigm. This power differentiation can be the result of inequities in the distribution and control of resources as well as other perceived power structures favoring proponents of the dominant paradigm.

A second type of institutional isomorphism is mimetic isomorphism and occurs when one or more paradigms in a discipline come into conformity with the predominant paradigm because of environmental ambiguity or uncertainty within the organizational fields or in this case the discipline. Conformity occurs when other paradigms mimic the dominant paradigm by adopting similar methodologies and ideologies in order to receive favorable treatment in resource allocations or other institutional benefits. This leads us to the final type of institutional isomorphism, that is, normative isomorphism.

Normative isomorphism occurs when the values, norms, and standards of the other paradigms are in conformity with the perceived definitions of values, norms, and standards of the dominant paradigm. This is evidenced in the control of the processes of

socialization and education of a majority of the members of a discipline. Normative isomorphism is the process in which member paradigms in a discipline conform to the dominant paradigm's definitions of the appropriate values, ideologies, and individual boundaries.

Conformity is viewed as the external convergence of the various paradigms in a discipline. However, the dominance of any individual paradigm is not necessarily assured for an indefinite length of time. This is because other variables besides internal convergence affect the dominance of any given paradigm. Those variables can include the perceived dominance of one discipline over another, the amount of ambiguity and environment turbulence between disciplines, and the values acknowledged by disciplines. When shared definitions ceased to be shared, external convergence is likely to dissolve into external divergence between member paradigms.

Divergence will tend to remain until another paradigm asserts its dominance. Theoretically, all paradigms in a discipline could be convergent to such a degree that zero or substantially limited growth is being experienced by the paradigm or the discipline as a whole. Zero or substantially limited growth, however, seems highly unlikely because of the number of variables involved. It is conceivable that when a dominant paradigm is experiencing zero or near zero growth, yet remains in a strong position of dominance that the discipline, of which the paradigm is a member may itself begin to experience some degree of general divergence between member paradigms. If multiple, highly divergent paradigms continue to vie for disciplinary dominance, the structural conditions develop that require one to give way to the other, or more likely, one will split from the existing discipline to establish a new discipline.

4. CONTEXT: LIBRARY SCHOOL EDUCATION

To contextualize and provide an example of the previously discussed model, a brief examination of the discipline of library and information science will follow. The crisis that library and information science education is experiencing in the United States is a good example of the breath and dynamics of the vigor of a dominant paradigm as it related to a discipline as a whole. The education component is one arena that a dominant paradigm controls when at its pinnacle of power by placing paradigm proponents in leadership as well as in line faculty positions. One area that is impacted is graduate education and its implications for research agendas of both faculty and graduate students. In many ways the following quotation from John Stuart Mill epitomizes this author's view of the role of graduate education:

“Men are men before they are lawyers, or physicians' or merchants, or manufacturers; and if you make them capable and sensible men, they will make themselves capable and sensible lawyers or physicians. What professional men should carry away with them from a University, is not professional knowledge, but what should direct the use of their professional knowledge” (1867, p. 388).

Library education as well as the discipline of library and information science in the United States appears to be struggling with the uncertainty and ambiguity that has per-

meated the field raising questions regarding its status as a scholarly enterprise. The result has been a crisis in which several quality library and information science programs have been eliminated by various universities during the relative recent past in the United States.

Symbolically, the most significant of these schools to be closed is that of the school at Columbia University in New York City. This is the same school, then called Columbia College, where Melvil Dewey successfully established the first library school in the United States in 1887. The school was originally named the School of Library Economy. This early program of study was essentially a "curriculum which he [Dewey] based on the routine and typical day-by-day activities of a library and thus was essentially technical and clerical in content" (Gates 1976, p. 90).

Today, the curricula of many schools of library and information science in the United States continue to be dominated by technical and clerical course offerings designed to replicate the daily activities of traditional libraries. This is not a problem that has only recently been identified. More than sixty-eight years ago in a study of library education in the United States, Williamson (1923) reported:

The difficulty of supplying libraries with assistants who were skilled in handling such detail and possessed of enough general understanding of the significance and importance of care and accuracy seems to have led the first schools to shape their curricula to meet the needs of the time, which was natural and desirable. The unfortunate result is that an attempt has been made ever since, more or less unconsciously, to give to manual labor of purely clerical and routine nature the dignity and importance of professional work. This has made and continues to make library work unattractive and distasteful to men and women with the proper educational and general equipment for successful service in the types of work which are of real professional characteristic (pp. 3-4).

At issue, then, is the perception of others regarding the legitimacy of library science as a academic unit. This is the same issue, acerbated by tightened budgets, that is now being faced by many library and information science programs at universities across the United States. Far too often the perceptions of colleagues in other academic units on university campuses appear to question the legitimacy of library and information science as a scholarly pursuit or a viable academic unit. Many appear to define library science education solely as a vocational training program that produces clerical workers and technocrats.

CONCLUSION: LIBRARY AND INFORMATION SCIENCE AND THE DYNAMICS OF PARADIGMATIC CHANGE

While the concept of theories and paradigms are no more than their proponents who routinize and in time institutionalize them; it is not just the proponents but their activities that is of interest here. As has been argued here, the primary activity is the interaction between individuals. Interactions are structured by learned social norms and embedded in the context of negotiated environment and the definition of specific situations. Through this process of negotiation man creates and shapes his own organizations and their environments.

Individuals negotiate, whether as proponents of particular paradigms or disciplines but always for their own self interest, they are negotiating for resources, positions, and privileges. The process of negotiation most often in the context of asymmetric power relations between individuals and collectives. Such negotiation is referred to as negotiated order. The formal definition of negotiated order used here is one furnished by Freidson (1970):

"process of social interaction in the course of which the participants are continuously engaged in attempting to define, establish, maintain, and renew the tasks they perform and the relationships with others"... (p. 311).

Situations where negotiations are likely to occur tend to be characterized by change, uncertainty and ambiguity, disagreement, ideological diversity, newness and inexperience, and problematic coordination (Hall and Spencer-Hall, 1982). Examples of problem situations that are subject to negotiation within the context of disciplines, paradigms, and theories include movements toward specialization, as well as toward convergence and dominance. In these situations negotiations can be constraining as well as enabling (Altheide, 1988). Strauss (1978) points out that individuals and social order develop through process of negotiation as it relates to the processes of ordering and what roles each shall play. Limits on negotiation are imposed by ideological commitment and the nature hierarchy.

Within the context of the discussion of paradigmatic change, negotiation becomes the engine for change. It is frequently the only route available for those that hold ideologies contrary to the predominate paradigm. As noted earlier, paradigm dominance is a gradual, incremental process, contrary to Kuhn's notion of revolutionary change. New ideas become accepted as their theories become consistent as borne out through research. Examples include such paradigms as Saint Simon's and Comte's positivist perspective, Spencer's Social Darwinism and the influences of both on more recent social theory such as functionalism, critical theory, or symbolic interactionism. There are even different schools of thought within paradigms, for example, the Chicago school of symbolic interactionism, the perspective employed and discussed earlier in this work. This perspective is contrary to the Iowa school of symbolic interactionism which has an empiricist slant, relying predominately on quantitative as opposed to qualitative methods that are such a strong component of the Chicago school.

In the United State, a similar pattern of structural disciplinary development is occurring in library and information science. Dewey's approach to library education, alluded to earlier, which is often referred to as the "traditional school approach." At the other end of the spectrum appears to be Jesse Shera and Lester Asheim. Not to mention the international schools led by men such as Ranganathan and Hartwig. Now there appear to be remnants of the traditional school as well as the "information transfer paradigm" that can trace its lineage back from Roger Greer to Shera to Butler. There is also the technocratic group that represents the "information science perspective." The "traditional school" and the "information science perspective" seem to be the strongest paradigms currently subscribed to in library education. Neither is clearly dominant on a national level, although information science may have an advantage internationally.

Finally, library and information science education remains, in many instances, clerical and technically oriented to the exclusion of most theoretical approaches. A majority of Master's degree programs follow and support the status quo. Some doctoral programs appear to be moving slowly in the direction of developing paradigms and are beginning to contribute to a theory base for the discipline of Library and Information Science. However, many library and information science doctoral degrees are primarily administrative degrees and contribute little to the theory base of the discipline. In Kuhn's terminology, the discipline of Library and Information Science remains at the status of an immature discipline. It is, however, slowly emerging toward a higher level of convergence or maturity.

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