
Identifying Opinion Leaders and Elites: A Longitudinal Design

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ABSTRACT

The term *longitudinal design* refers to a flexible research approach that can be applied to a wide range of topics involving change over time. Longitudinal refers to both the data collected and the methods of analysis used, and project designs can combine several data-gathering and analysis methods within a longitudinal framework. Longitudinal research demonstrates several features that permit the observation of process and change and facilitate identification and evaluation of the underlying factors. Several library and information science studies demonstrate the application of a longitudinal approach to both prospective and retrospective research questions. This article draws primarily on a longitudinal study of leaders who emerged in the archival profession during the 1980s when archivists developed the first set of descriptive standards (MARC AMC) in response to trends in the automation of library cataloging. The study identified a core group of leaders whose influence drove the archival profession to move in a specific direction. The identification of opinion leaders and elites, and the factors that led to their status, has significant implications for understanding patterns of decision making and communication within organizations.

INTRODUCTION

The terms *longitudinal design* and *longitudinal analysis* apply to a wide range of research studies conducted within many social science disciplines. The concept of longitudinal research relates to both the nature of the data and the methods of analysis. Because researchers can use a longitudinal approach in combination with other methods, as well as by itself, the lon-

gitudinal nature of a study is not always obvious. Research that focuses on process, adaptation, or change is often longitudinal, whether or not that element of the design is clearly articulated. The common denominator in all cases is time; in longitudinal research a span of time provides the crucial insight into the questions being studied.

This article examines longitudinal design and analysis as a research method, reviewing ways in which researchers have defined and applied this approach. Examples of longitudinal studies in library and information science (LIS), broadly defined, provide context for understanding why researchers choose this method and its strengths and weaknesses. These examples illustrate the kind of problems for which a longitudinal design is appropriate.

The article also focuses on a longitudinal research study by the author that analyzed changes in the archival profession during the 1980s, a period that experienced rapid change within archives and the adoption of the first set of descriptive standards, that is, the US MARC format for Archival and Manuscript Control (MARC AMC) (Davis, 2003b). The study sought to identify the opinion leaders within the profession and to understand how they were able to persuade and mobilize archivists to undertake what was viewed as a radical change in outlook and practice.

DEFINITIONS AND CHARACTERISTICS

The terms *longitudinal design* and *longitudinal analysis* have been used to describe a wide range of research using many different approaches. In fact, one of the strengths of longitudinal design is that it can serve as a framework for research that combines a longitudinal approach with other methods of data collection and analysis. Menard says that “longitudinal research must be defined in terms of both the data and the methods of analysis used in the research” (2002, p. 2). Following that line of reasoning, the term describes not one but a variety of methods that demonstrate the following features:

- Research covers a span of time in order to document process or identify change
- The direction of the research can be prospective or retrospective
- Data can be qualitative or quantitative
- Data should encompass multiple units of analysis
- Data collection should occur more than once

Researchers have elaborated on these points in their discussion of the method and its potential application to different kinds of research questions. Kimberly says: “Longitudinal organizational research consists of those techniques, methodologies and activities which permit the observation, description and/or classification of organizational phenomena in such a way that processes can be identified and empirically documented” (1976,

p. 329). He goes on to point out that the researcher defines the length of time for the project, as well as the research objectives, number of data collection periods, duration of time between collection periods, method of analysis, and unit of analysis. Venkatesh and Vitalari, who applied longitudinal analysis to information systems research, stated that “longitudinal research examines the behavior of processes and change in critical variables over time” (1991, p. 2). They also point out the benefits of using multiple methods to collect data in a variety of forms. According to Janson, “a ‘longitudinal study’ can be any diachronous study or a study of a process of change” (1981, p. 20). *Diachronous* refers to looking at changes over time, in contrast with *synchronous*, which is the analysis of factors existing or arising at a single point in time. This time span aspect is the primary factor that distinguishes longitudinal research from other approaches.

The basic definition does not specify whether the chronological direction is forward or backward. The majority of longitudinal research is prospective, however, because it is easier to plan to collect specific information in the future than it is to derive it after the fact. As King stated:

The main difference between prospective and retrospective designs is the length of the recall period. In prospective designs the recall is generally closer to and captured as the phenomenon unfolds, while retrospective designs require the participants to recall events that have happened in the past. Intervening experiences and events can interfere with the accuracy of data in recalled events. (2001, p. 10)

However, the risks are lessened through careful and probing questions from the researcher. In addition, not all retrospective data result from interviews; one can also tabulate data from secondary sources.

The definitions also do not specify whether the data collected and analyzed are quantitative or qualitative. Longitudinal research is frequently quantitative in nature, although it can combine both qualitative and quantitative approaches. Ruspini (1999) suggests that research based on longitudinal data can build bridges between qualitative and quantitative research traditions. The terms *qualitative* and *quantitative* can apply to both the data and the analytic techniques.

Whatever data is collected should encompass a number of units of analysis, and the data should be collected on those units at more than one point in the study to allow comparison over time. Janson (1981) limits longitudinal research to studies that collect data on the same individuals or units at multiple points and that also use data on several of those units. He suggests that longitudinal analysis is sometimes treated as synonymous with cohort analysis, where the term *cohort* “has a very wide meaning of any subpopulation of individuals (or other units) with a common characteristic” (p. 21). Researchers also contrast longitudinal research with cross-sectional research where measurement occurs only once for each subject or variable.

Within those definitions, research design and data collection can include a range of methods, including panel and cross-sectional designs, interviews, and survey research. Longitudinal studies have been undertaken within the fields of anthropology, community studies, education, psychology, health, and criminology and can focus on transitions, changes, and adaptations, as well as the impact of events and circumstances (Holland & Thomson, 2004). Longitudinal research has many advantages and is particularly appropriate for studying social change and the diffusion of innovations. Menard suggests that “For many, longitudinal research is touted as a panacea for establishing temporal order, measuring change, and making stronger causal interpretations” (2002, p. 1).

Researchers frequently examine organizations from the perspective of process. In doing so, they look at the interaction among variables, but that interaction is not static. Important questions and issues evolve dynamically, making it important to be able to assess the same variables at different points in time as well as any cumulative effects on those variables. Ruspini (1999) emphasizes longitudinal design’s heuristic potential because the data allow analysis based on duration, as well as the measurement of differences among variables across time.

Longitudinal studies frequently use historical sources, especially when the data are gathered retrospectively. Longitudinal design, however, differs from historical methodology in the ways in which the data are analyzed. Historical research involves the description and analysis of past events designed to reconstruct and understand how and why those events occurred and the roles of various players in those events. Historical research does not require that the data cover a span of time or that consistent variables be identified and measured more than once.

As attractive and flexible as longitudinal design may appear, it is not the answer to all research questions, even those looking at change over time. Identifying multiple, consistent units of analysis, for which retrospective analysis at specified points in time can occur, is not always possible. Research requires a framework of developing action that allows for the segmentation of activity for analysis. Prospective designs are frequently elaborate and costly, and there is always the risk of attrition among research participants, which can call the project’s conclusions into question.

RESEARCH STUDIES AND LIS

Researchers in the library and information fields have utilized a longitudinal approach. Below are examples of some studies that illustrate the diversity of possible study designs, data collection, and data analysis. In each of these cases, the authors have labeled their studies as longitudinal. Two of the study designs collected data prospectively, one using a qualitative and one a quantitative approach. Three of the studies focused retrospectively, again with a mixture of quantitative and qualitative data and analysis.

Prospective Designs

Preece, Schoberth, and Heinzl (2003) looked at changes in the activities of online communities over time, with the goal of identifying enabling and inhibiting factors. Their first step was to develop a conceptual framework with which they could describe the development of communications activity, and they tracked 33,000 participants over a three-year period—a prospective approach. To conduct their longitudinal analysis they divided the period of observation into equidistant intervals and used quantitative methods to analyze their data. Their units of analysis were the individual users, and they determined the time periods that organized their data collection and analysis.

In the late 1980s and early 1990s, Kuhlthau undertook a series of studies investigating the search process of high school and college students. She developed a six-stage model of the search process and sought to understand how users moved through that process in the course of their work (see, for example, Kuhlthau, 1991). The stages she identified constituted the time frame for the repeated data collection. The design was prospective in that she mapped student progress through the stages using a combination of interviews, questionnaires, process surveys, and flow charts and looked at both demographic and cognitive factors. Kuhlthau's articles documenting her research are widely cited and serve as a basis for many other studies on information-seeking behavior. The longitudinal aspect of the research, based on qualitative data gathered prospectively, made the data particularly rich.

Retrospective Designs

Julien and Duggan (2000) used qualitative and quantitative analyses to assess the literature on information needs and uses. Their goal was to examine the development of research in this area of LIS over time, and they identified two time periods (1984–1989 and 1995–1998) as a basis for data collection and analysis. They also compared their findings to research already done for the years between their two defined time spans. Their variables included degree of interdisciplinarity evident in references cited and whether the research was concerned with users' cognitive processes and systems design use. The authors also identified the research methods used. Their study identified longitudinal trends, including the indication that such literature was increasingly appearing in scholarly versus professional journals.

Wang and colleagues (White & Wang, 1997; Wang & Soergel, 1998; Wang & White, 1999) studied changes in relevance judgments over time, defined as the duration of a research project. They focused on judgments of usefulness of literature in a preliminary literature search, during the project, and at the writing for publication/citing stage. They gathered data synchronously at the literature search stage and retrospectively about

three years later to gain information about the use and citation stages. The projects had been completed by the time of the second interview. They asked similar questions at each stage about relevance judgments and the factors affecting them and were able to follow bibliographic items judged relevant initially through subsequent stages. This research is a good example of a project that was not intended as a longitudinal one, but, by building on the original research, the authors were able to compare judgments and factors at different stages.

Mustonen-Ollila and Lyytinen (2004) analyzed three organizations' adoption of information system process innovations (ISPI) over a period of four decades. They describe their work as a qualitative case study using a longitudinal vertical research design. They looked at a retrospective sample from over 200 ISPI adoptions and identified significant differences based on computing era, type of innovation, and organization. They divided computing into four distinct eras (early computing, 1954–1965; mainframe, 1965–1983; office computing, 1983–1991; and distributed applications, 1991–1997) and distinguished among four types of ISPIs (baseline technologies, tools, description methods, and managerial innovations). Through a combination of semi-structured interviews and archival data, Mustonen-Ollila and Lyytinen (2004) found that many adoptions were outcomes of internal learning, more ISPIs occurred during times of prosperity, and most innovations took place at the project management level.

IDENTIFICATION OF OPINION LEADERS/ELITES

The remainder of this article will describe my study in which I used a longitudinal design to explore the development of the archival profession during the 1980s. Specifically, the study was designed to identify the opinion leaders who led the activity, acting independently and/or on behalf of their employing institutions and professional associations. The study focused on the development and adoption of the first set of descriptive standards (MARC AMC) as the single critical event that most changed the archival profession. Description occurs in all repositories, regardless of size or sponsorship, and it represents a fundamental archival function in that it demonstrates the way in which archivists connect resources and researchers. Thus, changes in description and the implementation of standards dramatically affect the work of archivists in any institutional setting.

The study was based on the assumption that every profession wants to enhance its status and jurisdictional control and that effective leadership is a factor in achieving that goal. The study of a particular profession provides an opportunity to examine more closely the interaction of individuals and groups and the exercise of influence and power in advancing agendas over time. While the research evaluated influence on the part of both individuals and organizations, the emphasis lay more in identifying individual leaders who drove the activities that spurred the changes. Kadushin (1968) suggests

that decision making is a way to identify elites and leaders, beyond position and reputation. Thus, the research questions called for an approach that would identify the individual opinion leaders and elites who influenced the rest of the profession.

Elites is a term used by sociologists, among others, to designate individuals within larger groups who possess characteristics that set them apart, usually implying a level above the masses. In Bottomores's classic work on the topic, he proposed that the term be applied to "functional, mainly occupational, groups that have high status (for whatever reason) in a society" (1966, p. 14). Researchers focus on elites and opinion leaders for many reasons, including efforts to understand trends and shifts within society and organizations. These issues are significant, as elites and opinion leaders have the ability to convince others to adopt innovations, to change course in an organization or association, and to undertake a wide range of tasks and activities. Their behavior often sets a standard for others to follow. For the purpose of this article, the terms *elites* and *opinion leaders* are used interchangeably. The identities of elite members of a group are not always obvious since they may not relate to formal positions within a formal hierarchy; opinion leaders may not be the elected officials or the titular heads of organizations. Instead, one must look at a variety of factors within an organizational history and structure to determine the variables that distinguish members of a group who assume such leadership roles.

The process of adopting descriptive standards took more than a decade; thus, the research questions were best served by a longitudinal approach that facilitated the analysis of change across time. During that period (1977–1990), individuals emerged who were responsible for leading a series of projects in three stages that resulted in dramatic changes for the archival profession. The longitudinal design of this study identified these elites by looking at a series of variables at specific points in the three chronological phases of activity.

The status of descriptive standards was clear at the outset of this activity (1977) and again at the end of the period under study (1990). But the developments occurred incrementally as individuals participated in grant projects, committees, and task forces. Because it was longitudinal, the study was able to show both developing activity and changing relationships among individuals. While the data gathered were largely qualitative, quantitative methods were used to validate the conclusions reached through the qualitative analysis. This method for identifying the emergence of elites over a period of years has significant implications for the discussion of decision making, communication patterns, and diffusion of ideas within an organization, institution, or profession.

The analysis in this study focused on three different units of social organization within the chronological framework. First, the study looked at the archival profession as a whole in terms of its structure and dynamics

and the trajectory of events resulting in description standards. What transpired during the time period relating to the specific issue of descriptive standards affected the profession at large. This broad outline provided context for the events that occurred and the array of actors who participated in those events. The second level of analysis revolved around the series of groups that undertook descriptive standards work and constituted a more chronological analysis of what took place. These bodies evolved over time in response to pressures and opportunities from workplace and professional organizations. Library consortia and granting agencies supported the work of these groups. The third level of analysis, on which this article will focus, concentrated on the individuals who populated these groups. Who were these individuals, what roles did they play, and how—and when—did they emerge as significant players and opinion leaders?

Individuals played extremely influential roles in the process of descriptive standards development. An archivist may have become involved initially because of workplace responsibilities but then developed a reputation based on participation in task forces, committees, and working groups. Individual archivists presented papers, taught workshops, and sought and received appointments to positions of influence. Their work reflected personally upon them but also enhanced the reputation of their institutions. The reverse may also have been a factor; prestigious institutions with greater resources may have provided more opportunities for their employees. In either case, over time, certain individuals rose to prominence.

The research design for this study had two parts. While the discussion will emphasize the second, it is important to understand how the first part created the framework for the second. The first half of the study provided the background and historical context for the activities that took place between 1977 and 1990. This portion of the study established the longitudinal framework, identified the phases of activity, and used traditional historical and archival sources to paint a chronological picture that set the stage for the work of individuals (Davis, 2003a). The second half of the study followed a more sociological approach, examining patterns of relationships and concentrating on the individuals involved in the development of descriptive standards during these phases. The goal was to identify the elites, understand how they rose to positions of influence, and examine the relationships among these opinion leaders.

The archival universe during this period was comprised of individuals and organizations, operating both independently and in groups. For example, individual archivists worked in archival institutions ranging from colleges and universities, public libraries and museums, and government agencies in the federal, state, and local levels, to corporations, not-for-profit organizations, and religious associations. While archival principles (including description) remain fairly constant across those categories, the ways in which they are carried out vary according to the nature and size of the archival unit.

These individual archivists operated within the confines of their workplace, and that workplace may have defined both their priorities and the scope of their activities. In the case of descriptive standards, the existence of an online public access catalog (OPAC) within the larger institutions, such as university archives, often provided an incentive for the archivist to become involved in the area of descriptive standards for archival holdings.

Individual archivists were also involved in professional associations on the national and regional levels. While they participated as representatives of their employing institutions, they also participated because of their own professional interest and ambition. As self-identified members of a profession, many archivists have been active in advocacy for the profession. They have also worked toward improvement of practice, promotion of education, and in this case, the development and adoption of descriptive standards.

As is the case with longitudinal research, data collection on individuals fell into several stages, each of which will be described. First, it was important for me to understand the sequence of events that took place in order to identify the relevant groups and activities before I could pinpoint the individuals involved in each activity and the level of involvement. Once I accumulated the names of all the individuals, I then had to design a mechanism for differentiating levels of involvement so that the elites would begin to emerge. Those individuals became the subject of semi-structured interviews, conducted via phone or in person. Participants had the opportunity to name other influential individuals, and that data were tabulated and additional names added to the interview list. Data from the interviews, combined with data from the archival sources consulted in the early stages of the project, revealed relationships among the opinion leaders, and those were analyzed further.

Primary and secondary sources, consulted during the first part of the study, revealed that the events leading to the development and adoption of descriptive standards fell into three distinct chronological phases.¹ Prior to this period, archivists viewed description as the production of *finding aids*, or narrative descriptions of the creators, scope, and content of collections, accompanied by box and folder lists. Card catalogs frequently contained summary descriptions of archival collections, and archivists expected researchers to locate the desired material in the catalog, move to the longer register or inventory—as those narrative finding aids were often called—and then request specific containers of material. Archivists assumed that, because each collection was unique, standardized descriptions were impossible and that researchers could just continue to find their way to the repositories holding relevant resources.

The advent of computer applications, specifically in the area of bibliographic control, began to filter into the archival community. Archives frequently exist within libraries, and thus archivists felt pressure to comply with online catalogs and the MARC format. At the same time, government

archives were beginning to experiment with a program called SPINDEX (Selective Permutation Indexing). The archival profession, therefore, was faced with a decision regarding the appropriate course for online access to archival collections.

In response, during the 1977 annual meeting, the Society of American Archivists (SAA) Council established the National Information Systems Task Force (NISTF) to study the problem of constructing a national information system for archives and manuscript collections. NISTF and its work constitute the first chronological stage of descriptive standards activity, lasting from 1977 to 1983.

NISTF's work had three goals: to provide intellectual access to archives and manuscript sources in American repositories; to establish a framework for "describing and improving access to archival resources"; and to facilitate the adoption of automated techniques (*SAA Newsletter*, May 1981, pp. 6-7). Basically, the SAA Council charged them with determining the best direction for future efforts. As part of their work, NISTF completed a data elements dictionary that, while never published, served as an extremely influential document. The data elements dictionary demonstrated that the units of information used by archivists were sufficiently consistent to support communication across different systems. But the Task Force also concluded that a single national information system was unlikely because of resource issues and the diversity of archival repositories. NISTF's charge expired in 1983, and a new SAA standing committee, the Committee on Archival Information Exchange, took over its ongoing responsibilities.

During this first stage, members of the library and archival community were working with the Library of Congress (LC) and others to develop MARC AMC. The Research Libraries Group (RLG) was a particularly active participant in this process because it saw the implementation of the format as crucial to the inclusion of special collections holdings into their Research Libraries Information Network (RLIN). The American Library Association approved MARC AMC in 1983, and the same year LC published Steven Hensen's first edition of *Archives, Personal Papers, and Manuscripts: A Cataloging Manual for Archival Repositories, Historical Societies, and Manuscript Libraries*, which interpreted the MARC format for archivists.

By end of the first stage, the direction of future activity was fairly clear. The National Archives was not going to take a leadership role in this endeavor; instead, pioneering efforts were more likely to emerge from the library community, which already had a huge stake in the MARC format. The archival profession now had a mechanism for descriptive standards work, and a group of leaders was beginning to emerge to spearhead the adoption of MARC AMC. The individual members of NISTF represented both their institutions and the larger profession. They brought to the table professional expertise gained through their positions and thus could see both the benefits and pitfalls of proposed descriptive systems. These in-

dividuals were also positioned to test the new descriptive formats in their repositories and share the results with their colleagues at home and in the larger professional arena. Archivists working in RLG libraries had the added benefit of RLG's intense interest in the MARC format, as well as its financial and political support.

The second phase of activity lasted from approximately 1984 to 1988, following the approval of MARC AMC. If NISTF served as the catalyst to define the problem and outline the desired approach to developing automated archival descriptive systems, RLG and SAA provided the means to disseminate that information to the profession at large. RLG established an Archives, Manuscripts, and Special Collections Task Force in 1983 to solicit broad-based participation in the automation of archival description through this new format. Members of this Task Force had participated in some of the NISTF discussions as well as those at LC, whose Joint Committee on Specialized Cataloging was working on revisions to AACR2. RLG's Task Force became a committee and continued their work until 1992. In fact, several NISTF members and the majority of the original members of SAA's new standing Committee on Archival Information Exchange were employed by RLG institutions.

The other major activity of the second time period was a series of workshops sponsored by SAA with funding from the National Endowment for the Humanities (NEH). SAA began offering MARC AMC workshops in February 1986, and by mid-1987 it had held seven workshops attended by 170 people representing over 140 repositories (*SAA Newsletter*, March 1987, p.7). The success of the workshops encouraged NEH to extend funding for a second two-year period as well as underwrite the revision of *Archives, Personal Papers, and Manuscripts*, published in 1989. SAA held these workshops at their annual meetings as well as venues around the country. Others contributed toward the wider dissemination and adoption of MARC AMC through articles or presentations at professional meetings. A conference held at the State Historical Society of Wisconsin in October 1984, funded by the National Historical Publications and Record Commission (NHPRC), resulted in two volumes (*MARC for Archives and Manuscripts: The AMC Format* [Sahli, 1985] and *MARC for Archives and Manuscripts: A Compendium of Practice* [Evans & Weber, 1985]) that were the first major attempts by the profession to disseminate widely the ways in which institutions applied the specific MARC fields to their own archives and manuscripts collections.

By the time the NEH funding ended, SAA had strengthened its position as a focal point for archival automation and descriptive activity, and RLG had positioned itself as a pioneer in online access to archives and special collections. Many of the individuals active in the first phase continued their work in descriptive standards as workshop leaders, authors, committee members and chairs, and presenters at meetings. They served as spokespeople for standards development and solidified their own reputations

as well as the work of the profession. Other leaders also emerged during this phase.

The third phase (1988–1990) consolidated the activities of the previous decade and provided the profession with a road map for addressing long-term standards development and implementation. SAA and RLG had engaged in a wide range of activities up to this point, but RLG had focused on its member institutions rather than a broad cross-section of the population. As a voluntary association, SAA lacked enforcement authority.

In 1988 a group of archivists representing a range of public and private institutions met to consider the larger questions of identifying and implementing standards. They successfully sought funding for their work from the NHPRC, and between 1988 and 1989 the Working Group on Standards for Archival Description met twice and drafted a new definition of description that incorporated its ongoing nature and focused more on the process than the end result of specific finding aids. In addition, the Working Group developed a matrix that articulated the levels of description, their relative strengths, and the sources of the various archival descriptive standards. Two issues of the *American Archivist* (Fall 1989 and Winter 1990) contain their final report and recommendations as well as the background papers and lists of additional resources.

It is significant that the Working Group emerged through the concern of individuals who, by and large, had become leaders in this area through the activities of the first two phases. Neither SAA, RLG, nor LC sponsored this project, although the members represented their interests. The Working Group constituted a group of opinion leaders within the archival profession who took the initiative and successfully grappled with the theoretical and practical issues of archival standards development and implementation.

This chronological saga is essential for understanding what transpired, for identifying the three points for data collection, and for identifying individual participants who played significant roles. Using the primary and secondary sources, I identified eighty-five individuals who had given relevant papers, written articles, taught workshops, or were members of NISTF or the Working Group. I designed an Excel spreadsheet, entered data on each individual's participation (NISTF member, number of conference presentations, etc.), and noted whether they worked for an RLG member institution. I also added data regarding other professional leadership positions, such as being named an SAA Fellow (the highest individual honor in the profession) or being elected an SAA Council member or officer.

The next step was to reduce eighty-five individuals to a manageable number for interviewing and later data analysis. I assigned weights to each category of participation, based on my assessment of the significance of that activity or honor, and applied those weights to each of the eighty-five names in the spreadsheet (Davis, 2003b). The weighting process reduced the eighty-five to twenty-three individuals who clearly had a higher degree

of participation than their colleagues (more than eight points). Two of those individuals had passed away, so the initial list of interviewees was twenty-one.

I contacted each of these individuals to introduce the project and request an interview. No one was reluctant to talk to me, and all agreed to have their interviews taped and then transcribed. I conducted a semi-structured interview, either in person or by telephone, with each of the twenty-one individuals who had risen to the top. Most interviews took at least an hour to complete. To minimize bias, I alternated the order in which I conducted the interviews to vary factors such as gender, affiliation with public or private repositories, and the chronological period in which the participant was active. I numbered the interviews based on the sequence in which I conducted them and used those numbers as identifiers throughout the analysis.

Each interviewee had the opportunity to name individuals he or she thought were influential in the descriptive standards process, including him- or herself (which a few did!) I designed a matrix and tabulated "chooser/chosen" data in order to confirm or amplify the names revealed in the written records. Tabulating the "chosens" resulted in an "average influence score" for each individual. This process served two purposes. First, it resulted in the addition of two more participants based on their number of influence points, bringing the total number of interviewees to twenty-three. The two individuals had missed the initial cutoff largely because they were not archivists and belonged to fewer of the relevant groups. Second, the process served as a validity check on the twenty-three individuals selected for interviews. I later also used the influence points in the data analysis.

In response to questions, the interviewees reflected on their own role in the descriptive standards process. In particular, I was interested in the reasons for their participation and whether the incentive came from their employer, their affiliation with SAA, or other personal ambitions. I also asked them to speculate on the effect this activity had on their career in terms of job opportunities, professional advancement, or personal growth.

Clear patterns of activity and participation emerged from the data collection process. These patterns served multiple purposes: to identify the elites and the reasons they rose to prominence, and to establish the stability of leadership and the relationships among the opinion leaders. The interviews amplified the information revealed through the written records. It was clear that certain individuals were more prominent in the early years, others became involved later in the 1980s, and others took active roles throughout the decade. The individual-level weighted data file clarified the roles and relative prominence of individual archivists and served as an objective way to determine the most likely leader candidates and those most appropriate to interview. The interviews provided information that complemented the other sources and validated the selection of interviewees. For data analysis, I added the two individuals who were deceased to the core group of elites for

a total of twenty-five units. Thus, the longitudinal analysis focused on these twenty-five opinion leaders at the three chronological stages of activity.

I chose to use network analysis as the framework for the data analysis. Network analysis depicts connections among individuals and clarifies who held positions of leadership and how that occurred. "A basic strength of the whole network approach is that it permits simultaneous views of the social system as a whole and of the parts that make up the system" (Wellman & Berkowitz, 1988, p. 26). The descriptive standards process was a complex process that involved individuals and organizations through a series of subgroups and projects. Network analysis is an appropriate way to explicate the roles, as well as strengths, of these individuals and organizations through their various activities.

In order to undertake the network analysis, I set up a series of matrices, using Excel, that detailed the connections among the twenty-five opinion leaders. Using the matrices, I was also able to compare data based on specific variables. The data from these matrices were imported into Ucinet, a social network analysis software that generates centrality measures (Borgatti, Everett, & Freeman, 2002). These centrality measures, displayed in various ways, documented the intensity of the relationships among individuals and how those relationships shifted according to context and time. I also calculated degrees of centrality across time periods using Pearson's product moment correlation and Spearman's rank order correlation.

The matrices were based on the fact that the development of descriptive standards fell into three fairly distinct chronological periods, differentiated by a series of task forces and grant projects that accomplished stages of the work. These issues brought people into the activities and established a specific set of connections that linked individuals for at least that span of time. Thus, the time periods represented the basic framework for the network analysis.

For each period I looked at three foundations of personal relationships: (1) participation in a specific issue or project (for example, NISTF); (2) a contextual set of relationships (for example, RLG affiliation); and (3) an element of personal connection (when an individual says he/she entered the profession).² I created a series of sociograms that visually documented the connections. This method of data analysis is consistent with longitudinal design in the focus on multiple units for whom similar information was collected at multiple points in time.

The connections among individuals based on each of these factors were symmetrical; everyone in each category was equally connected with everyone else in the category. It was also useful to look at the relationships across these content areas within each of the time periods. Because there were three foundations for personal relationships in each time period, each individual had the potential for one, two, or three connections with any other individual active in that time period. This involved "stacking"

the three sociograms for each time period, resulting in data that combined individual attributes for each phase, indicating strength of ties as well as the ongoing bases for connections among the elites.

These measures reflected individuals' positions over the duration of the study. I produced a similar matrix for influence, based on the chooser/chosen data collected during the interviews, imported that data into Ucinet, and correlated the information with the position matrices. Influence, as recorded in the chooser/chosen mentions, relates to an individual's reputation. Therefore, it was possible to examine the relationship between position (what an individual did) and reputation (the opinion of others) over time. In all of these instances, quantitative data derived from the qualitative sources facilitated the kind of consistent comparisons across time that longitudinal design demands.

Diffusion of innovations is another significant theoretical construct that underlies the analysis of the data. Rogers's (1995) landmark book on the subject describes the stages through which innovations are spread as well as the roles of individuals and organizations in the process. It is possible to examine the development of descriptive standards and place the phases along the continuum that Rogers delineates. It is also relevant to look at the adopter categories Rogers identifies, including the innovators and early adopters who represent the leaders this research sought to understand. Longitudinal design is an excellent tool for looking at the diffusion of innovations (see, for example, Mustonen-Ollila & Lyytinen's [2004] study).

The methods previously described revealed a cohort of twenty-five opinion leaders whose efforts drove the archival descriptive standards process. The names surfaced initially in the written records and were validated through use of the weighting scale and the interviews. The relationships among the opinion leaders and the reasons for and strengths of those relationships became clear through the social network analysis. Thus, findings relate to both the identification of the elites and understanding the structure of the interpersonal relationships and the way those relationships changed over time.

The analysis revealed certain characteristics that defined the opinion leaders—information that this research method made possible. First, members of the elite group were those who became active in the early or middle stage; most would be considered early adopters of the format. Second, factors such as association with an RLG library or other policy-making organization (for example, NHPRC) were more important for gaining leadership than being in a practice position within an institution. SAA membership was significant for credibility, but SAA membership alone did not lead to positions of influence. Demographics also surfaced as a significant factor. The individuals who comprised the leadership group largely belonged to a demographic cohort—those who came into the profession at the early stage of descriptive standards development and thus were in the right place at the right time.

Position did play a role in initial leadership status. Initially, one had to be in an institution ready to participate in this new venture. But beyond the initial stage, reputation took on increasing importance. Some individuals remained within their institutions; others changed jobs. But once an individual's name was connected to descriptive standards work, he/she could continue to participate, and further involvement rested on both reputation and continued interest. Indeed, several individuals rose to general positions of professional prominence as a result of their work on descriptive standards; many became SAA Fellows as a result of this work.

Members of this elite group exerted what French and Raven (1968) define as "expert power," a form of power based on the notion of special knowledge held by those with power. These opinion leaders were successful in codifying professional knowledge, and that knowledge became an essential element of professional practice. The leadership cohort represented not just an aggregate of individuals but also a cohesive group that drew strength from shared concerns and values. As Perrucci and Pilisuk found, "there exists in communities a relatively small and clearly identifiable group of *interorganizational leaders*" (1970, p. 1044). They concluded that such ties can "result in the creation of resource networks which can be mobilized and brought to bear upon particular community issues" (p. 1056). The pooling of resources that occurs in such a group enhances and expands individual power. The Working Group is a good example of such interorganizational leaders.

CONCLUSION

The approach taken for this research was somewhat inductive. The study began with a series of research aims, including (1) to identify individuals who played influential roles in the development of descriptive standards and how that changed over time, and (2) to analyze whether and how their organizational affiliations related to their influence in the descriptive standards process. The specific methods used for data collection and analysis evolved over the course of the project. The more historical methodology of the first part of the project explicated the settings and contexts for activity, and those findings drove the structure of the rest of the research.

The study is consistent with the characteristics of longitudinal design outlined at the beginning of this article. The research documented activity and change over a span of time, in this case approximately thirteen years. The time period fell into clearly defined phases, facilitating data collection at multiple points. Although largely qualitative in nature, the retrospective data were manipulated statistically and corroborated the qualitative analysis. Twenty-five individuals constituted the units of analysis emerging from the initial data collection. I collected data on those individuals at three points in time from a variety of sources and compared information across participants and across time periods according to several factors. The resulting analysis

pointed to trends that help us understand the process through which a profession evolves, develops standards, and codifies knowledge.

Longitudinal design and social network theory were appropriate frameworks for identifying elites. Historical methodology was crucial for building the context and understanding the course of activity. However, historical methods would not have allowed me to map the stages of activity and the shifting roles of the participants as well as perform longitudinal and social network analysis, which clarified roles and levels of influence. The array of individual attributes reflected specific aspects of individual's lives that contributed to their status as elites. The network analysis permitted comparison of positional elements to an individual's reputation. Thus, the application of social network theory to the overall longitudinal design allowed for the quantification of data that contributed to the validity of the findings.

This article demonstrates that flexibility is a major strength of longitudinal design. Each of the studies mentioned in this article illustrates ways in which researchers have pursued a range of research topics through studies that incorporated the elements of a longitudinal study with other methods of data collection and analysis. Each study established a chronological framework, facilitating data collection on multiple units of analysis more than once. Using prospective or retrospective approaches, quantitative or qualitative data, or a combination of all of the above, researchers have been able to draw conclusions regarding causality, organizational processes, and patterns of change. Longitudinal design is an excellent method that has been and should be applied to many settings.

NOTES

1. These primary and secondary sources included published journal articles, the bimonthly newsletter of the Society of American Archivists (SAA) (titled *SAA Newsletter* during that time period), newsletters from the Research Libraries Group (RLG), archival records from the Society of American Archivists, records from the Bentley Fellowship Program at the University of Michigan and the National Historical Publications and Records Commission (NHPRC), an unpublished report from the National Archives and Records Administration (NARA), and personal files lent by colleagues documenting committee and task force work.
2. During the interview process, it became clear that many of the participants had entered the profession at the same time, in the 1970s.

REFERENCES

- Borgatti, S. P., Everett, M. G., & Freeman, L. C. (2002). *Ucinet for Windows: Software for network analysis*. Harvard, MA: Analytic Technologies.
- Bottomore, T. B. (1966). *Elites and society*. Middlesex, England: Penguin.
- Davis, S. E. (2003a). Descriptive standards and the archival profession. *Cataloging & Classification Quarterly*, 58(3/4), 291–308.
- Davis, S. E. (2003b). *Organization and influence in professional standards development: The case of archival description*. Unpublished doctoral dissertation, University of Wisconsin–Madison.
- Evans, Max J., & Weber, Lisa B. (1985). *MARC for archives and manuscripts: A compendium of practice*. Madison, WI: State Historical Society of Wisconsin.
- French, J. R. P., & Raven, B. (1968). The bases of social power. In D. Cartwright & A. Zander (Eds.), *Group dynamics: Research and theory* (pp. 259–269). New York: Harper & Row.

- Hensen, S. (1983). *Archives, personal papers, and manuscripts: A cataloging manual for archival repositories, historical societies, and manuscript libraries*. Washington, DC: Library of Congress.
- Holland, J., & Thomson, R. (2004). *ESRC study into the feasibility of a possible qualitative longitudinal study*. Retrieved November 2, 2005, from http://www.ccsr.ac.uk/methods/festival2004/programme/Thu/am/C/documents/ThomsonSummary_000.doc.
- Janson, C. G. (1981). Some problems of longitudinal research in the social sciences. In F. Schulinger, S. A. Mednick, & J. Knop (Eds.), *Longitudinal research: Methods and uses in behavioral science* (pp. 19–55). Boston: Martinus Nijhoff.
- Julien, H., & Duggan, L. J. (2000). A longitudinal analysis of the information needs and uses literature. *Library & Information Science Research*, 22(3), 292–210.
- Kadushin, C. (1968). Power, influence and social circles: A new methodology for studying opinion leaders. *American Sociological Review*, 33(5), 685–698.
- Kimberly, J. R. (1976). Issues in the design of longitudinal organizational research. *Sociological Methods and Research*, 4(3), 321–347.
- King, M. P. (2001, June). Cross-sectional and longitudinal research designs issues in the studies of human development. *Graduate Research in Nursing*, 3. Retrieved November 2, 2005, from <http://www.graduateresearch.com/King.htm>.
- Kuhlthau, C. (1991). Inside the search process: Information seeking from the user's perspective. *Journal of the American Society for Information Science*, 42(5), 361–371.
- Menard, S. (2002). *Longitudinal research* (2nd ed). Thousand Oaks, CA: Sage.
- Mustonen-Ollila, E., & Lyytinen, K. (2004). How organizations adopt information system process innovations: A longitudinal analysis. *European Journal of Information Systems*, 13(1), 35–51.
- Perrucci, R. & Pilisuk, M. (1970). Leaders and ruling elites: The interorganizational bases of community power. *American Sociological Review*, 35(6), 1040–1057.
- Preece, J., Schobert, T., & Heinzl, A. (2003). Online communities: A longitudinal analysis of communication activities. *Proceedings of the Hawai'i International Conference on System Sciences, Jan 6–9, 2003*. Retrieved November 2, 2005, from <http://www.ifsm.umbc.edu/~preece/paper/9%20HICSSNOCD06v2.pdf>.
- Rogers, E. M. (1995). *Diffusion of innovations*. New York: Free Press.
- Ruspini, E. (1999). Longitudinal research and the analysis of social change. *Quality and Quantity*, 33(3), 219–227.
- Sahli, Nancy. (1985). *MARC for archives and manuscripts: The AMC format*. Chicago: Society for American Archivists.
- Venkatesh, A., & Vitalari, N. P. (1991). *Longitudinal surveys in information systems research*. Center for Research on Information Technology and Organizations (CRITO), UC-Irvine. Retrieved November 2, 2005, from <http://www.crito.uci.edu/noah/NOAH/paper/LongSurveyInfoSys.pdf#search=longitudinal%20research%20retrospective>; originally appeared in Kramer, K. (Ed.). (1991). *The information systems challenge: Survey research methods*. Cambridge, MA: Harvard University Press.
- Wang, P., & Soergel, D. (1998). A cognitive model of document use during a research project, study I: Document selection. *Journal of the American Society for Information Science*, 49(2), 115–133.
- Wang, P., & White, M. D. (1999). A cognitive model of document use during a research project, study II: Decisions at the reading and writing stages. *Journal of the American Society for Information Science*, 50(2), 98–114.
- Wellman, B., & Berkowitz, S. D. (1988). *Social structures: A network approach*. Cambridge: Cambridge University Press.
- White, M. D., & Wang, P. (1997). A qualitative study of citing behavior: Contributions, criteria, and metalevel documentation concerns. *Library Quarterly*, 67, 122–154.

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