

Research and the Psychology of Information Use

SARA FINE

ONE OF THE SIGNIFICANT consequences of the revolutionary changes in information technology is the recognition, first of all, that information is composed of complex structures and, second, that human beings react to information in complex ways. The complexity of information and the organization of knowledge have become prime targets for theory building and research by information and library science researchers; the ways in which human beings interact with information is becoming an increasingly focused concern for psychologists. It is not surprising that a relationship has formed and is growing between technologists, library and information scientists and psychologists. The purpose of this article is to present a psychological perspective on research in librarianship and to explore the potential for application of psychological research principles and practices to behavioral research in librarianship, not in order to replace current research purposes, methods and techniques in librarianship, but to enrich them.

Behavioral Research in Librarianship: A Brief Overview

Behavioral studies in librarianship seem to cluster into four major areas of interest. First is the interest in organizational behavior and the application of principles from theories of management to the administration of libraries—studies that concern management styles and their various effects, organizational climate and job satisfaction, and organi-

Sara Fine is Associate Professor, University of Pittsburgh, Pittsburgh, Pennsylvania.

zational changes as it affects roles, functions and structures. Interest in the library as a social system has increased with the advent of technology, networks, and resource sharing, an interest that is evident both in the library research literature and in dissertation research. The reader is referred to Helen Howard's article on "Organization Theory and Its Application to Research in Librarianship" in this issue¹ and to Ethel Auster's article on "Organizational Behavior and Information Seeking"² for a comprehensive review of current thinking and research on the behavioral aspects of library organization and administration.

The second area for behavioral research in librarianship concerns the communication patterns of librarians, both verbal and nonverbal, as they affect the quality of library service, with particular emphasis on the interactive process of the reference interview. It is in the context of the reference interview that librarians have traditionally been most aware of the behavioral dimension of their work. An historical overview of the writings and research about the reference process, tracing the evolution of the concept of reference as an interpersonal process, can be found in Charles Bunge's³ forthcoming review of the "Interpersonal Dimension of the Reference Interview," in Michael Roloff's review of research on "Communication at the User-System Interface,"⁴ in Mary Jo Lynch's article on "Research in Library Reference/Information Service,"⁵ and in reviews by Gene Norman,⁶ Samuel Rothstein,⁷ and Wayne Crouch.⁸

A third area reflects the interest that librarians have in understanding themselves as individuals in the context of their professional lives. A considerable body of literature exists on the personality of the librarian, starting with Alice Bryan's⁹ 1952 *Public Library Inquiry* in which a psychological inventory of traits was used to construct a personality profile of the "typical" librarian. Other studies followed: Douglas¹⁰ in 1957, Rainwater¹¹ in 1962, Morrison¹² in 1971, Lee and Hall¹³ in 1973, and Fine¹⁴ in 1979, among many others. One of the related themes in these studies is the personality of censorship, as in studies by Busha¹⁵ and Salomon,¹⁶ an interest that still is evidenced in one of the current research topics proposed in the U.S. Department of Education-sponsored *Library and Information Science Research Agenda for the 1980s*.¹⁷ Two recent articles, one by Sandra Black¹⁸ and a forthcoming article by John Agada,¹⁹ review the range of studies on librarian personality. These two current reviews are particularly useful in their critical analyses of the limitations in theory and method of earlier personality studies.

Studies of attitude are a fourth group in the behavioral area. There are really two kinds of attitude studies. First are those that measure

positive and negative responses to issues and processes, sometimes comparing the "attitudes" of different groups to each other. These studies are conceptually and methodologically the weakest in the whole behavioral arena. Second are those studies in which there is an attempt to change attitudes or to understand what makes attitudes change. As will be discussed later in this article, only the second kind of attitude research can be considered to reflect the purpose for which behavioral research is conducted.

While there are isolated studies of some other behavioral aspects of the profession, these four categories make up the bulk of behavioral research in librarianship. It is significant and worthy of note that none of these research areas addresses the user. The omission of "user studies" from this grouping of behavioral research is intentional. User studies in librarianship are, with a few noteworthy exceptions, not about users. Douglas Zweig pointed out that "compared to studies of use, studies of users have been relatively rare," and that "the unit of analysis" is generally "away from the patron himself, to the utilities or *uses* that interaction with the library has provided."²⁰ Studies of uses and users, as they are conducted today and in the past, give us virtually no understanding of how people interact with information and with libraries. It is on that premise, the need to understand the psychology of the information user, that this article is based.

Library Research: A Psychological Perspective

Perhaps the crucial factor that distinguishes psychological research lies in the nature of its intent. When library research concerns itself with behavioral issues, the ultimate goal is generally to provide more effective service; that is, to determine those behaviors that increase satisfaction, encourage use, enhance the environment or promote managerial decisions for the more economic distribution of resources. With few exceptions, research in librarianship has looked at behavior through an operations perspective, not from a behavioral perspective nor through the eyes of behavioral methodologies. The primary purpose has been to *observe* behavior, not to predict it or change it, and not to understand it.

Recently there has been a shift in the focus of behavioral research in libraries to a more intensive consumer perspective. The call for a more disciplined marketing approach is evidenced by the interest in the concept and methods of community analysis and by the development of the *A Planning Process for Public Libraries*,²¹ designed to assess the state of the community and the activities of the library and to develop

responsive plans and programs. Two of the agenda items in the *Research Agenda for the 1980s*, "Techniques for Marketing Library and Information Services" and "Consumer Behavior Research Applied to Libraries," suggest that the momentum is building for the view that "the information seeking public (are) potential consumers who are to be drawn actively to the library through more attractive services and more extensive marketing strategies."²² The pursuit of a marketing approach for libraries is long overdue. Market survey research has utility for planning and for day-to-day operation; it may be a crucial element in making libraries accessible and dynamic social institutions in the community.

Market research is psychological in many of its aspects. Its purpose is to observe, predict, and then change behavior. Missing is the need to *understand* behavior, and therein lies its critical limitation. In pursuing the market survey approach, library research reasons as follows: If we know who wants what, we will provide it; if we know who comes when, we can adjust our schedule; if we know who our major users are, we can focus our collection to suit; if we know what subgroups exist in the community, we can program accordingly; if we know how many are satisfied with what, then we know what to continue doing. The result is that libraries are conceived and designed like department stores, with much concern for the repeat business that comes from enough satisfied customers but with little concern for how the product is used. While this kind of research is vital in today's tough marketplace for libraries, we run the risk that it distract from fundamental and theoretical considerations and from what may be our essential and unique contribution to an information-driven society—the understanding of how human beings seek and process information.

At its core, librarianship is a behavioral art. In fact, its purpose for being is to enhance—and thereby to change—behaviors, attitudes, beliefs and values through information. Its goals are to increase awareness, nurture creativity, transfer information, preserve and transmit knowledge. In order to fulfill its mission, librarianship needs to be based on well-founded theoretical understandings about the nature of information, the nature and needs of human beings, the transfer process between people and information resources and the way people use information. As yet, librarianship has not dealt with its fundamental behavioral dimensions through a cumulative body of behavioral research.

In contrast, information technologists have become increasingly engaged in basic research that is psychological in many of its aspects.

Studies in cognition, learning and comprehension, memory, thinking and brain structure, decision-making, creativity, problem-solving, information processing—combined with the whole range of work on artificial intelligence—have linked information scientists with psychologists as they exchange accumulated knowledge and interchange methodologies. But the purpose for which information technologists study the human intellectual process is specific to their own professional endeavors, the design of technological systems, and it is this purpose that directs and drives their research efforts.

For librarians, the purpose is different—not the design of information systems, but the design of service and delivery systems, the creation of a climate where learning, becoming informed, and personal and social growth are most likely to take place. As it stands now, behavioral research in librarianship reflects and reports the way libraries are currently designed and operated, the way librarians currently interact with patrons, and the way the community currently uses—or doesn't use—libraries. It does not deal with the essence of library service, the way human beings process and use information. In its current state, behavioral research in librarianship is not leading toward the development of a theory of user behavior.

Evolving a Theory of User Behavior

The prevailing theory of information need and use is that human beings need information in order to reduce the ambiguity in their environment and that they use information to impose some structure on an unstructured "event world,"²³—i.e., the particular universe in which an event triggers the awareness of a need for information to define and then solve a problem. One theoretical view is that the world we live in is an orderly place, and information is a means to describe a portion of that order. Another view is that the world around us is random, and that we use information to reduce our sense of disorder so that we can cope with the randomness. In either case, information is a tool, not an end.

Libraries, however, function as though information itself is the goal to be achieved. When librarians are asked, "Why do people come to libraries?" they will invariably answer, "To find the information they need or want," or for recreational reading or to socialize or to come in out of the cold. But the whole focus of library service would shift if the answer were that people come to libraries to reduce ambiguity, or to increase their ability to cope with a situation, or to make a decision, or to find something that will lessen their anxiety, or to move themselves

toward some wanted goal. In other words, people come to libraries to solve problems, even if the problems are loneliness or the cold outside, not to "find information."

Brenda Dervin described two kinds of information: that which is generated externally (for example, from the resources of the library), which she referred to as "information 1"; "information 2" is generated from the user's internal reality, the expectations for and intended use of those resources. In describing the research approach that would derive from these different perspectives on the same user behavior, Dervin wrote: "Past research has typically focused on information 1: How many books were circulated? How much use was made of nonfiction books? Who checked out what kinds of materials?" Notice that these kinds of questions are concerned with the operation of the library, not with the psychological processes of the user. Research generated from a behavioral perspective and conceptualized from the perspective of the user has a different quality and provides a different meaning. Dervin characterized this perspective as "information 2." The questions themselves come from the user's frame of reference:

[not] How did the individual find the information? [but] How did the individual find the information useful? ...Did the user learn, come to understand, or find out something as a result of intersecting with a library activity? What library resources served as the impetus? What kind of sense did the user make? How did he make that sense?²⁴

Libraries are really in the business of fulfilling a psychological need, presupposing that human beings have a "need" for information for social survival, to be productive, and for their personal growth. Just as educators need to understand how people learn and grow in order to create the learning environment for growth to take place, so do librarians need to understand the process by which people come to experience their need for information—how they acquire it, unconsciously process it, consciously manipulate it, and then make use of it—before they can create a psychologically-relevant information environment.

In order to evolve a theory of user behavior, there are three broad and basic questions that need to be addressed. First, what is information? What are its various sources in the life of an individual? How do human beings tap the internalized information that they already have? How is new information integrated with that which already exists within the individual? What library events trigger the assimilation of new information? And how can libraries contribute to the process of information transfer, a concept that implies more than the delivery of documents into the hands of the user.

Information Use

The second broad question concerns the way in which people interact with information, and under what environmental and psychological circumstances. In traditional library research terms, the questions have a clear shape and intention: What kinds of information do users request most often? What library services are most used? What community subgroups like which activities? For what reasons do people say they come to libraries? The operational question is: How can we get the greatest number of resources in our particular library to the greatest number of people with the greatest efficiency?

While there have been many studies of library users, few give any more information than "how many did what." This kind of research is rarely of use outside of the institution in which it is done, and sometimes not even there. Even when research across a variety of libraries produces comparable results, its use is limited to a narrow band of issues for decision-making. Its focus is on the pragmatic, the specific. From a psychological perspective, research questions are concerned with the laws and principles of human behavior and are directed at the more universal aspects of information seeking: How is information acknowledged as information by the individual? How is it received and assimilated? How much information is too much, and for whom, and under what conditions? How does the unconscious processing of information take place? Is it immediate or does it require time and distance? How do the librarian's verbal and nonverbal cues shape the information and change the user's perceptions of it? How does the client's psychological state open up or inhibit the way information is received and processed? How does an individual come to experience the "felt need" for information? What impels him to the library? Is a "need" that which the individual states? What about the need that cannot be articulated—is it then not a need from the perspective of the library? These questions can be translated into a library context without losing their behavioral meaning. For example, in his introduction to *Knowledge and its Organization*, David Batty made some observations about the "condition of ignorance" that seeks information, and from his description of that "condition," some behavioral questions are implied. Why does the user exhibit an "inability to formulate a question at the level of precision where the answer will ultimately be found to lie?" And why is "the inquirer...impelled toward general (rather than specific) statements?" These questions do not fit the mold of traditional research in librarianship; they do suggest that the traditional methods and designs that permeate library research may not be sufficient for their study. However, there are methods and designs available from the behavioral sciences

that would make these questions both askable and testable. Batty continues:

We structure knowledge in the light of existing patterns of enquiry, but we have no way of anticipating the structure of patterns in the future, or the connections between the disciplines that they will make necessary.²⁵

The third question concerns the transmittal and transfer processes, the way in which information is packaged and communicated, and whether the way we are currently packaging information is truly relevant to the way people can receive and use it. Packaging includes many elements; not only the way information is organized and presented, but the way it is housed and the way it is presented. One of the aspects of packaging, the behavior of the librarian, the "transfer agent" or "intermediary," has received considerable attention in the library literature, more in a prescriptive and didactic mode than through research. Research has generally concerned the counseling or interpersonal aspect of the reference interview as, for example, Helen Gothberg's²⁶ application of the "immediacy" concept from psychological counseling to the reference interview, or on nonverbal factors in communications, as in Edward Kazlauskas's²⁷ kinesic analysis of the various "service points" in an academic library, or on issues of "approachability" as in a study by Swope and Katzer.²⁸ A number of models of the reference interview have been developed in an attempt to clarify the interpersonal negotiation between librarian and client; Karen Markey,²⁹ Brian Nielson,³⁰ Robert Merikangas,³¹ Marilyn White,³² and Sara Fine,³³ among others, have developed explanatory approaches to the complex interaction between information seeker and information provider. But as yet, the profession has not addressed the concept that librarian behavior, to be effective, consists of more than interpersonal skills and reference skills. It must also manifest an understanding of the ways in which people—with their variety of cognitive modes, psychological states, and sources from which they receive informational input—proceed in their attempts to fulfill needs and solve problems.

The Nature of Psychological Research

Psychological research attempts to formulate, through systematic observation and experimentation, the laws and principles that underlie some aspect of human behavior and to make the knowledge of those laws and principles available for use in the conduct of human affairs. In

a particular research instance, the goal may be to: (1) observe and describe some behavior, (2) explain a particular behavior in terms of its antecedents or correlates, and/or (3) predict the circumstances under which the behavior is likely to occur again.

Another approach to psychological research does not begin with the identification of a behavior for study, but with a psychological state, like anger or depression, or a phenomenon of the human experience, like locus of control or resistance to change or information processing. The intent, then, is to: (1) describe the phenomenon, (2) discover its elements and their interaction, and (3) explain its existence on the basis of existing psychological theory.

The primary factor that determines a research study as psychological is in the nature of the question. A study that asks "who?" or "what?"—who uses libraries? or what materials do they use?—is not psychological research, except in its most elementary state of observing and describing behavior. Behavioral research asks "why?" or "how?"—why do human beings need information? or how do human beings process it? When the question "Why do people use libraries?" is proposed from a psychological perspective, its theoretical constructs would concern the need for information by all human beings and the processes by which they acquire it. The methodology would go beyond a questionnaire that asks respondents to choose one option from a list of items, a list that was generated from the perspective of the library rather than from the perspective of the user. Library research has typically limited itself to a narrow range of methods for the collection of data, and those methods generally reflect the library as it exists. In general, asking people what they want is not the answer; people are limited in their ability to respond by their own potential for imagination and by their preconceptions about and experiences with the library. Research instruments generally give respondents only those options which are already available or which are already considered to be future options. In the context of a structured questionnaire, laced with the existing notions of the library's functions and services, the respondent's only choice is to fit underlying and unfulfilled needs into the existing structure of systems and services.

Another limitation to this method as a way to collect data about human behavior is that respondents generally do not react at the time when they are experiencing the need or resolving the associated problem. The experience of completing the questionnaire is removed from the immediacy of the experience at issue; and in the interim, perceptions change. Psychological research tries to tap the response at the time it is

being experienced, a difficult approach to take in the context of traditional library research methods but one that is integral to psychological research.

Another characteristic of psychological research lies in the variety of its methods and the richness that results from combining various methods. Observation, case study, survey and interview techniques have found many uses in a variety of studies in librarianship. The most typical design in library research to study behavioral issues the *ex post facto* design, where data are collected through survey or interview techniques and analysis is conducted on the dependent and independent variables. It must be noted that survey research that seeks only descriptive data and does not presume to seek relationship between variables is not *ex post facto* research, nor is it behavioral research; it is survey research. There is no doubt that well designed and rigorously controlled *ex post facto* research, using appropriate instrumentation for measurement, supported by previous research findings, can add significantly to our body of knowledge about social behavior. Most of the important behavioral or sociological studies in librarianship have used this approach. In fact, what *ex post facto* research is to sociology, experimental research may be to psychology.

One of the primary methods for psychological study is experimentation, a design that has been adapted for research in other information-related professions but rarely applied to studies in librarianship. The result is that library research generally studies what *is*, not what might be, given other conditions or after some "treatment" has been applied. The lack of experimental research suggests stagnation of knowledge about the behavioral aspect of the profession. While there are obvious problems and limitations to the use of experimental design in any social setting, where neither the subjects nor the variables can be controlled as they are in a laboratory, it is still the method that makes it possible to demonstrate a connection between the two variables, even when one cannot conclude causation. With its problems and limitations, it is still a primary method by which new knowledge about human behavior is generated.

The proposal that library researchers adopt an experimental mode into their repertoire of methodologies for the study of behavior in libraries is not a new one. Michael Brittain³⁴ has pointed out that user studies have run into a number of seemingly intractable problems, one of which is that the mainstay research methods in librarianship have gone largely unchanged over the years, even though the objectives of

user studies have changed appreciably. In writing for *Library Trends* in 1964, Leon Carnovsky,³⁵ who for several years compiled studies done in library schools for *Library Quarterly*, noted that successful research in librarianship is dependent on the application of the methods and techniques found useful in other disciplines. In that same issue, David Krathwohl³⁶ carefully explicated the relationship between the problem-solving behavior that characterizes much of our everyday activity and the development of an experimental design for library research. George McMurdo³⁷ has called for "truly interdisciplinary studies between librarianship and psychology" which could draw on "the method of the experimental psychologist." McMurdo described an experimental method for the study of a question that has often been the subject of more traditional library research, that is, the effect of the librarian's appearance of "busyness" on approach activity by patrons. McMurdo used the example to demonstrate the applicability of the experimental research method within the context of library operations. In his 1972 study of the effect of prime location on the circulation of a select group of titles, Herbert Goldhor³⁸ used "an approximation of the classical four-cell experimental design." But few actual experimental studies are reported in the literature of librarianship, other than the few that appear in the dissertation literature.

A review of behavior-related dissertation research in librarianship revealed that most designs for data collection are based on the fielding of questionnaires, personal interviews and/or the analysis of documents. There are, however, a small number of experimental studies in dissertation research, primarily using library school students as subjects. Elaine Jennerich³⁹ used actors in simulated situations to test the effect of "microcounseling" training,⁴⁰ where the skills of counseling are broken down into discrete components to be mastered by specific training and practice, on the ability of experimental subjects to apply counseling principles in a real situation. The method had two advantages: subjects were presented with live people in immediate situations which allowed for greater authenticity in the test situation; second, by using actors, the consistency of the experimental stimulus was controlled. Jennerich used "expert judges" to evaluate the responses of the subjects to the test situation. Adelaide Sukiennik⁴¹ tested the effect of assertiveness training on library school women students to raise their level of consciousness and to teach appropriate behavioral skills, using pre- and post-test instruments that presented "incidents" to which subjects self-reported their personal response styles. Veerle Minner Van Neygen's⁴² study of

resistance to psychology by library school students was also experimental in method, testing whether a specifically designed training sequence would increase comfort with behavioral approaches to librarianship. It is important to note that in each of these studies, it was the effect of the treatment that was the object of study, not the students. What these studies revealed concerned the effectiveness of the various experimental events in changing behaviors.

While experiments related to libraries are relatively uncommon in the research of librarianship, there are experimental studies reported in the psychology literature where the library was the laboratory and library users the subjects. The library, for example, has been a laboratory for studies of "territoriality" that sought to understand how people viewed the work spaces that they had staked out and how far they would go in defending them against intruders. In a 1976 experimental study, a group of psychologists⁴³ tried to determine the effect of being touched on subjects' perceptions of the effectiveness of service and their feelings about the environment. The results suggested that subjects who were touched by a clerk while checking out books, particularly female subjects, whether or not they were consciously aware that they had been touched during the exchange, were more positive in their evaluation of the clerk and of the library environment than were those who were not touched. The experiment was conducted at the Purdue University library.

Along with experiments using training as the treatment, there are other examples of designs and methods that have been adapted from psychological research and applied to libraries. Raymond Pyles's study⁴⁴ of the relationship between decision-makers' behavior and the contents of computer-based information systems used an experimental design with simulated planning tasks representing wartime and peacetime environments to test the effect of contradictory information on performance. In a study that used observation of subjects' behavior in their natural setting, Richard Crouch⁴⁵ collected data from five "impartial observers" to assess the communication styles of twenty-five randomly selected librarians in the conduct of a reference interview.

The use of projective techniques, where the subject is given an ambiguous stimulus such as a set of thematic pictures or emotion-loaded words onto which he may "project" a characteristic mode of responding has been adapted by several studies of behavior in library research.

Sara Wheeler⁴⁶ used a Thematic Apperception Test—i.e. photographs of library situations—to reveal covert emotional reactions to

some basic professional functions by children's librarians, discovering that some of them had a real distaste for storytelling. The use of a projective technique was preferred over a self-report inventory because librarians are unlikely to present responses that are unacceptable to the norms of the profession when asked direct questions.

In her studies of resistance to technology by librarians, library school students and faculty, Sara Fine⁴⁷ used several modified projective techniques in some of her instruments: the measurement of thematic responses to cartoons was one of the devices; another was an adjective checklist to measure affective reactions to technology. The inclusion of these measurement devices was based on the premise that resistance is an unconscious dynamic and that, therefore, the appropriate measurement was a projective technique.

A study of librarian burnout by Roose, Haack and Jones⁴⁸ used an unusual adaptation of the projective technique. Subjects were asked to draw pictures depicting what burnout is like. The pictures were representative of the way individuals saw themselves in debilitating situations at work, and from their variety, it was evident that the stages of burnout could be identified. One of the useful results, in behavioral terms, was the graphic description of the kinds of pressure situations that are associated with public reference service and the nature of the emotional reactions they induce. The drawings were interpreted and classified according to a psychological construct of the burnout syndrome. The study not only provides a statistical description, but enhances our understanding of burnout as a unique experience for librarians. In this study, the head of reference in a major library system, a psychiatric nurse, and a clinical psychologist pooled their interests, experiences and methodologies.

Among the projects developed for *A Library and Information Science Research Agenda for the 1980s*,⁴⁹ one proposal calls for an experimental design. The idea was generated by an experiment that had been conducted by a research group at the Massachusetts Institute of Technology which sought to study how a group of teenage boys would interact with a "knowledgable information system." The boys were presented with a typewriter console and told that they could ask any questions they liked. The "information system" was really a group of top-grade physicists and engineers in the next room who heard the questions and then tried to respond interactively with the questioners through the typewriter console. By observing the process, the information system designers hoped to learn how people go about asking questions and what we might have to do to answer them.

The current *Research Agenda* proposal would review and revise the experimental design, taking into account new capabilities and more sophisticated technologies, and then use the method to study how young people seek information. However, there is a whole range of additional behavioral questions that could be addressed by the use of this design: What kinds of stimuli trigger what kinds of questions; how subjects interact with the information as they receive it, and what kinds of followup questions they ask; what stimulates different behavior in different individuals during the process; and how group interaction affects question-asking behavior. From a psychological perspective the study would be designed to understand the processes involved as well as to assess the observable behavior.

Psychological research is further predicated on a theoretical explanation and description of the phenomenon being studied. It is the development of a construct about the phenomenon that constitutes the basic task in the design of a psychological study. The phenomenon dictates the methodology; the methodology does not dictate the phenomenon. Sometimes exploratory research is undertaken for the purpose of learning about the phenomenon, to understand more, for example, about learning or creativity or information processing, in order to understand its components and to propose hypotheses for how they interact with each other. A study that is purely exploratory is sometimes undertaken in order to formulate hypotheses which may then become the bases for subsequent studies.

The failure to build research on clearly and fully developed constructs is a major limitation in the way behavior research is conducted in librarianship. There are numerous studies, for example, of attitudes—attitudes toward library services, tools and procedures. But many studies treat “attitude” simplistically, as though it is simply a like-dislike response, when actually attitudes are made up of a complex of affective, cognitive and behavioral factors. In order to understand and assess an attitude, all of these factors must become part of the construct, and the data collection instrument must be designed to match the elements of that construct.

The same is true of other phenomena that are popular and important areas of study in librarianship: “satisfaction,” for example, or “participatory” (as in management), or such subjective concepts as “interest,” “commitment,” or “self-image.” Although we use these words in communicating about abstractions, we cannot use them in psychological research without a careful delineation of their meaning and of the elements contained in them. While the like-dislike approach

may produce important practical information for the operation of the library, it does not increase our understanding of how people behave and how libraries respond.

One example of a phenomenon that longs to be studied in relation to libraries is creativity. While we may point with pride to creative people who have had close contact with libraries, what do we really know, as librarians, about the creative process? The theory of creativity holds that the creative process and the products of the creative person are generated in interaction with the environment.⁵⁰ What do we know of the way the library environment interacts with the individual to allow for the full expression of creativity to emerge?

There have been some studies of the relationship between creativity and information-seeking behaviors reported in the library literature, but for the most part it is research about libraries, not about creativity. For example, Robert Maizell⁵¹ found that the more creative subjects in his study used a wider variety of information channels than did their less creative colleagues. He also found that creative chemists preferred to search for themselves rather than make use of available reference services. While such studies provide useful information on user behavior, style and preference they do not help us to understand the relationship between creativity and the information environment. "It is deceptively easy to describe information use, and many researchers have taken the easy road," wrote Geoffrey Ford in his survey of user behavior research. "It requires an effort of will to ponder on the work that has gone before, to synthesize a body of theory, and having theorized, to formulate a hypothesis, to test it, and to refine the theory in the light of new findings." Ford concluded that: "Perhaps the most important finding (in his review of research on user behavior) is that it has yet to be demonstrated that the use of libraries has any definite influence on anything else."⁵² Perhaps it is time to demonstrate that the library environment has the potential to greatly influence learning and informing behaviors, that as Cochrane and Pawlowski⁵³ have suggested in their essay on creativity, the library can "serve as a continuum through which...exploration may take place and further insights be gained."

There are natural laboratories in librarianship that lend themselves to the study of various phenomena, but they are often overlooked and unexploited for research purposes. The study of "leadership" or "management ability" is a case in point. This subject, which has received considerable attention in the social sciences literature, seems to be of considerable interest for doctoral research in librarianship. Most dissertation studies involving leadership use a mail survey method; a favorite

technique is a mail survey of either ARL directors or directors of large public libraries. There are, however, alternative ways to study leadership behavior. The Seattle Career Development and Assessment Center project⁵⁴ was set up to assess the management skills and potential of participants in the project, thus providing a situational opportunity for intensive research. The nature of the project could have provided researchers with a population to study, the possibility of an experimental design, even the potential for a longitudinal study. The focus of the evaluation research that was produced from the project looked at attitudes and outcomes, an appropriate design for evaluation of a project, but the opportunity was lost for study of a behavioral factor that is an essential part of our professional enterprise.

In another such natural laboratory, the Council on Library Resources' Senior Fellows Program at the University of California, Los Angeles,⁵⁵ a small group of academic and research library managers participate in a six week summer institute in advanced management and research techniques. The project staff is conducting a series of behavioral studies, developing professional profiles of participating fellows and comparing them with a control group of academic librarians in order to identify characteristics and career patterns of academic library leaders. The current research is descriptive and comparative, but the intent is to develop hypotheses for further research on leadership in librarianship. Library researchers tend to think of a "sample population" to study. The concept of "laboratory" for the study of human behavior, adapted from psychological research tradition, can enlarge and enrich the ways in which librarianship studies its own behavioral questions.

Another distinguishing characteristic of psychological research lies in the way the results of a study are interpreted and the implications derived from them. For example, if the results show that more women use libraries than men, the implications in terms of library operations might be that we need to provide more materials that appeal to women, or we need to find ways to appeal to the male population. For a psychological perspective, the further questions might be: Why do women use libraries more than men? or How do women differ from men in their information-seeking and processing behaviors.

The psychological perspective also differs sometimes in its view of "statistical significance." Library research deals with communities of users and communities of professionals, and research is considered rigorous and credible when the sampling design reflects representativeness and results in generalizability. The same is true for much of the

research in psychology. But in dealing with human beings, it is sometimes the anomaly that gives us information and insight. It is sometimes the abnormal that teaches us about the normal. An analogy from medical research might suggest that if one were studying the behavior of cells and all but one cell behaved normally, we would ignore that one as "not significant." Yet that one cell might give the crucial clue we seek. In matters of human behavior as well, deviation is sometimes as significant for study as generality.

The undertaking of psychological research demands acceptance of one other of its characteristics—the inherent ambiguity and nonconclusiveness of results. While experimental research must be designed and presented so that the methods are understandable and the experiment replicable, it is common experience in psychological research to find discrepant results from replicated studies. There are obvious possible reasons: the variables may not have been controlled for, or the subject population may have differed in unaccountable ways. External forces and internal events operate to change behaviors; even the passage of time with its concomitant changes in life experience can be a factor. Sometimes it is a random human factor that defies our understanding and our need for statistical consistency. But psychological literature still continues to grow, and with it some theories have evolved that contribute to our understanding and to the way we conduct and manage many of our social organizations. Psychological research is often inconclusive, replication is difficult, and results are sometimes contradictory. But the study of human behavior is like putting together a jigsaw puzzle. When the pieces do fit, a picture is forthcoming.

It sometimes seems that psychological research is intended to prove the obvious, to verify our common beliefs and our common sense. In fact, surprises are not unusual, and the obvious does not always match the results arrived at through systematic investigation. But on the other hand, we often do find that our experience and intuition and our observations of human behavior have indeed been validated through research. David Legge⁵⁶ has suggested that the bulk of psychological research *should* be aimed at demonstration of what we already know, at least as a starting point, and only then are we able to go a step further. It is the mark of a professional—and of a profession—that behavior not be based primarily on intuition, that intuition be an enhancement of our professional understanding and skill, not its basis. A professional does not behave randomly. And yet, in terms of understanding human behavior, libraries are random places, sometimes hitting it right, sometimes not. It is not enough to know *that* people behave as they do, we also need

to understand *why* and *how* if we are to attempt to solve problems whose origins are in human behavior.

In the past, the major issue that confronted librarians was how to get more material to more people more satisfactorily. But as information becomes more complex, more available and more crucial, it is also becoming apparent that people react to information in ways that are more complicated than just "getting it" or "having it" or "using it." Librarianship has moved into the behavioral arena, ready or not.

And so must its research evolve toward more psychologically relevant and more accurately conceptualized studies, more varied and creative research designs, and a sharper, clearer focus on the user. Perhaps library researchers cannot be expected to restructure their approaches without turning outward and, as information scientists have done, joining the other professions that have teamed up with psychologists to enhance their own understanding of their own profession in new and vigorous ways.

References

1. See Helen Howard's article, "Organization Theory and Its Applications to Research in Librarianship" in this issue of *Library Trends*.
2. Auster, Ethel. "Organizational Behavior and Information Seeking: Lessons for Librarians." *Special Libraries* 73(July 1982):173-82.
3. Bunge, Charles A. "Interpersonal Dimensions of the Reference Interview: A Historical Review of the Literature." *Drexel Library Quarterly* 20(Spring 1984) (in press).
4. Roloff, Michael E. "Communication at the User-System Interface: A Review of Research." *Library Research* 1(Spring 1979):1-18.
5. Lynch, Mary Jo. "Research in Library Reference/Information Service." *Library Trends* 31(Winter 1983):401-20.
6. Norman, O. Gene. "The Reference Interview: An Annotated Bibliography." *Reference Services Review* 7(Jan./March 1979):71-77.
7. Rothstein, Samuel. "Across the Desk: A Hundred Years of Reference Encounters." In *The Reference Interview* (Proceedings of the CACUL Symposium on the Reference Interview, held at the annual conference of the Canadian Library Association, Montreal, P.Q., 9-15 June 1977), pp. 27-53. Ottawa: Canadian Library Association 1979.
- Also in: _____. "CACUL Reference Interview; Across the Desk: 100 Years of Reference Encounters." *Canadian Library Journal* 34(Oct. 1977):391-99.
8. Crouch, Wayne W. *The Information Interview: A Comprehensive Bibliography and an Analysis of the Literature*. Syracuse, N.Y.: ERIC Clearinghouse on Information Resources, 1979.
9. Bryan, Alice I. *The Public Librarian: A Report of the Public Library Inquiry*. New York: Columbia University Press, 1952.
10. Douglass, Robert Raymond. "The Personality of the Librarian." Ph.D. diss., University of Chicago, 1957.
11. Rainwater, N.G. "A Study of Personality Traits of 94 School Students as Shown by the Edwards Personal Preference Schedule." Master's thesis, University of Texas, 1962.

Information Use

12. Morrison, Perry D. *Career of the Academic Librarian: A Study of the Social Origins, Educational Attainments, Vocational Experience and Personality Characteristics of a Group of American Academic Librarians*. Chicago: ALA, 1969.
13. Lee, David L., and Hall, Janet E. "Female Library Science Students and the Occupational Stereotype: Fact or Fiction?" *College & Research Libraries* 34(Sept. 1973):265-67.
14. Fine, Sara. *Resistance to Technological Innovation in Libraries* (Final Report. Parts I, II and III). Washington, D.C.: HEW, Office of Education and the Office of Libraries and Learning Resources, 1979.
15. Busha, Charles H. "Student Attitudes Towards Censorship and Authoritarianism." *Journal of Education for Librarianship* 11(Fall 1970):118-36.
16. Salomon, Kristine, and Burgess, Curt. "Social, Psychological and Demographic Characteristics of Adults with a Disposition toward Library Censorship" (In "Star-Studded Ideas for Librarians: Second Annual Poster Session Abstracts," edited by Ruth J. Person). Chicago: ALA, 1983 (pamphlet, unpagged).
17. Cuadra Associates. *A Library and Information Science Research Agenda for the 1980s: Summary Report* (Dept. of Education, Office of Libraries and Learning Technologies, Project No. 300-81-0022). Santa Monica, Calif.: Cuadra Associates, Inc. 1982.
18. Black, Sandra M. "Personality—Librarians as Communicators." *Canadian Library Journal* 38(April 1981):65-71.
19. Agada, John. "Studies of the Personality of Librarians." *Drexel Library Quarterly* 20(Spring 1984) (in press).
20. Zweizig, Douglas L. "Measuring Library Use." *Drexel Library Quarterly* 13(July 1977):7, 13.
21. Palmour, Vernon E., et al. *A Planning Process for Public Libraries*. Chicago: ALA, 1980.
22. Cuadra Associates. *A Library and Information Science Research Agenda for the 1980s*.
23. Debons, Anthony. "Command and Control: Technology and Social Impact." In *Advances in Computers*, vol. 11, edited by Marshall Yovitz, p. 326. New York: Academic Press, 1971.
24. Dervin, Brenda. "Useful Theory for Librarianship: Communication, Not Information." *Drexel Library Quarterly* 13(July 1977):24.
25. Batty, David. *Knowledge and Its Organization*. College Park: University of Maryland, 1976, p. iv.
26. Gothberg, Helen. "Immediacy: A Study of Communication Effect on the Reference Process." *Journal of Academic Librarianship* 2(July 1976):126-29.
27. Kazlauskas, Edward. "An Exploratory Study: A Kinesic Analysis of Academic Library Public Service Points." *Journal of Academic Librarianship* 2(July 1976):130-34.
28. Swope, Mary J., and Katzer, Jeffrey. "The Silent Majority: Why Don't They Ask Questions?" *RQ* 12(Winter 1972):162-66.
29. Markey, Karen. "Levels of Question Formulation in Negotiation of Information Need During the Online Presearch Interview: A Proposed Model." *Information Processing and Management* 17(no. 5, 1981):215-25.
30. Nielsen, Brian. "Teachers or Intermediary: Alternative Professional Models in an Information Age." *College & Research Libraries* 43(May 1982):183-91.
31. Merikangas, Robert J. "Librarians and Client: Who's in Charge?" In *Options for the 80's: Proceedings of the Second National Conference of the Association of College and Research Libraries*, edited by Michael D. Kathman and Virgil Massman, pp. 375-84. Greenwich, Conn.: JAI Press, 1982.
32. White, Marilyn D. "The Reference Encounter Model." *Drexel Library Quarterly* 19(Spring 1983):38-55.
33. Fine, Sara. "The Librarian as Youth Counselor." *Drexel Library Quarterly* 14(Jan. 1978):29-44.

34. Brittain, J. Michael. "Pitfalls of User Research and Some Neglected Areas." *Social Science Information Studies* 2(July 1982):139-48.
35. Carnovsky, Leon. "Publishing the Results of Research in Librarianship." *Library Trends* 13(July 1964):126-40.
36. Krathwohl, David R. "Experimental Design in Educational Research." *Library Trends* 13(July 1964):54-67.
37. McMurdo, George. "Psychology and Librarianship—An Appraisal of the Potential of Experimental Psychology in the Study of Librarian—Client Behavior." *ASLIB Proceedings* 32(July/Aug. 1980):319.
38. Goldhor, Herbert. *The Effect of Prime Display Location on Public Library Circulation of Selected Adult Titles* (ED 060 868). Washington, D.C.: U.S. HEW, Office of Education, 1972.
39. Jennerich, Elaine Z. "Microcounseling in Library Education." Ph.D. diss., University of Pittsburgh, 1974.
40. Ivey, Allen. *Microcounseling: Innovations in Interviewing Training*. Springfield, Ill.: Charles C. Thomas, 1971.
41. Sukiennik, Adelaide Reno Weir. "Training Women Library School Students for Greater Career Achievement." Ph.D. diss., University of Pittsburgh, 1978.
42. Minner, Van Neygen Veerle. "Students' Attitudes towards the Behavioral Approach to Library and Information Sciences: An Experiment Involving the Group as an Agent of Change." Ph.D. diss., University of Pittsburgh, 1981.
43. Fisher, Jeffrey D., et al. "Hands Touching Hands: Affective and Evaluative Effects of an Interpersonal Touch." *Sociometry* 39(1976):416-21.
44. Pyles, Raymond A. "Using Computer Based Information: How Information System Types Affect Decision Makers' Uncertainties." Ph.D. diss., University of Southern California, 1981.
45. Crouch, Richard Keith C. "Interpersonal Communication in the Reference Interview." Ph.D. diss., University of Toronto, 1981.
46. Wheeler, Sara H. "Children's Librarians in the Northwest." In *Libraries and Librarians of the Pacific Northwest*, edited by Morton Kroll. Seattle: University of Washington, 1960.
47. Fine, Sara. *Library Education and Resistance to Technology* (Final Report). Washington, D.C.: HEW, Office of Education, and Office of Libraries and Learning Resources, 1981.
48. Roose, Tina, et al. "Occupational Burnout Among Librarians." *Drexel Library Quarterly* 20(Spring 1984) (in press).
49. Cuadra Associates. *A Library and Information Science Research Agenda for the 1980s: Summary Report*.
50. Sinnott, Edmund W. "The Creativeness of Life." In *Creativity and Its Cultivation*, edited by Harold H. Anderson, pp. 12-30. New York: Harper, 1959.
51. Maizell, Robert E. "Information Gathering Patterns and Creativity." *American Documentation* 11(Jan. 1960):9-17.
52. Ford, Geoffrey. "Progress in Documentation: Research in User Behavior in University Libraries." *Journal of Documentation* 29(March 1973):86.
53. Cochrane, Mary Jane, and Pawlowsky, Mary D. "The Environment of Creativity." In *Knowledge and Its Organization*, edited by David Batty, p. 91. College Park: University of Maryland, 1976.
54. Melber, Barbara D., and McLaughlin, Steven D. *Evaluation of the Career Development and Assessment Center for Librarians*. Seattle: Battelle Human Affairs Research Centers, 1983.
55. Anderson, Dorothy. Project coordinator, Senior Fellows Program, Council on Library Resources, University of California, Los Angeles.
56. Legge, David. *An Introduction to Psychological Science*. London: Methuen, 1975, p. 15.