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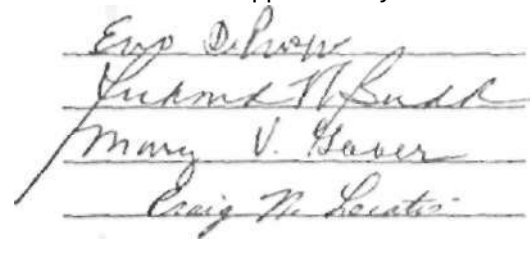
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THE CONCEPT OF SERVICE ORIENTATION:
AN EXPLORATORY STUDY ON THE CONCEPT IN RELATIONSHIP TO THE LIBRARY AND INFORMATION SERVICES FIELD

By SHIRLEY A. FIT2GIBB0NS

A thesis submitted to
The Graduate School
of
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for the degree of
Doctor of Philosophy

Written under the direction of
Professor Ernest DeProspo
of the Graduate School of Library Service
and approved by



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ABSTRACT OP THE THESIS

The Concept of Service Orientation:
An Exploratory Study on the Concept in Relationship
to the Library and Information Services Field

by SHIRLEY A. FITZGIBBONS, Ph.D.
Thesis director: Professor Ernest DeProspo

The investigation had two major objectives: (1) to explore the concept of service orientation, and (2) to develop a methodology for measuring the concept. Service orientation has been considered an important professional ideology for the field, but has never been defined sufficiently nor measured adequately. Three definitions of service orientation taken from the literature of the sociology of professions and the library field were presented as ideal types to be tested: the Traditional-Professional Type, the Semiprofessional Type, and the Open-Systems Type. A set of items was developed from these ideal type definitions which formed the basis for a Q-sorts instrument.

Perceptions on service orientation were measured for three subsets of the library and information field: 99 library school students, 100 practitioners, and 90 library leaders (leaders of the American Library Association) for a total sample of 203 participants. The degree of consensus between the three subsets and within each subset was determined through the use of Q-methodology involving a Q-sorts ranking instrument, correlations

between persons' rankings, and factor analysis of the correlations. The importance of service orientation as a work value was assessed through an adapted form of the Rosenberg Work Values Instrument. Possible related demographic and attitudinal variables were explored through a short questionnaire.

The results indicated that service is an important work value common to the three subsets. Leaders and practitioners especially valued the altruistic meaning of service (contributing to society) while all three groups valued the more general meaning (opportunity to be helpful to others). The findings determined that not one but several patterns of service do exist in the field as illustrated by the three factor types created: Open-Systems, People-Oriented, and a mixed type (both Traditional-Professional and Open-Systems Types).

Most importantly, the general consensus on service orientation was found to be greater than anticipated. The three separate analyses of the sample groups indicated a one factor solution, with a total of fifty-four consensus items, the total number of items. A three factor solution resulted from the combined groups analysis with a total of thirty-seven consensus items including an awareness of the importance: of interpersonal and communication skills; of the process of bringing information, books, and people together; of helping people; of the accuracy of information given to patrons; of the liaison role of libraries; and of

planning services based on the total community.

Sufficient consensus items have been found to form the "common core" of a definition of service. The consensus items came from two of the posited ideal types: the ideal Semiprofessional Type and the ideal Open-Systems Type.

A test of the theoretical, ideal types was undertaken by submitting an inverted Q-sorts data matrix to a factor analysis. The ideal types were shown to be multidimensional when tested with empirical data.

The results of the current study indicate a positive perception of service on the part of the sample group; they further support the critics of the professional model of service as being inappropriate for the library field. The ideal type, the Open-Systems Type, most closely matches the perceptions of the field; this could have important implications for library education and continuing education. The open-systems, service-oriented person needs new knowledge and expertise outside of current course offerings. The past stereotypes of librarians need to be reanalyzed in light of this new philosophical view of service. The methodology used in the study, the Q-methodology, should be useful in future studies of service.

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Dr. Jeff Ford of the Institute of Labor and Management Relations served as a consultant and deserves special mention. Mr. Eric Johnson, an undergraduate student in the Human Communications Department, was very helpful to me in my work with the computer program. Ms. Diane Katz, who helped with most of the initial typing, worked long and hard in very short periods, for which I am grateful.

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PART I

PROBLEM STATEMENT, DESIGN, AND METHODOLOGY

CHAPTER I

INTRODUCTION

The terms, service orientation and service ideal, are widely used in the literature on professionalism. The terms have had a special importance in the library profession. The service concept is reflected in library school curricula, and in the goals and policy statements of particular libraries as well as of those of the national library organization, the American Library Association. It is even included in library job advertisements.

In library literature one can find discussions of reference service, service to clients, as well as general discussions of the need for being "service-oriented." Though the library profession has given much "lip service" to the importance of the concept of service orientation, these terms are usually undefined or used ambiguously.

The Problem

The concept of service orientation was explored in this investigation within the framework of the library and information services field. Due to the apparent importance placed on the concept in this field, it was appropriate to probe the meaning of the concept as perceived by the members

of the profession--its students, practitioners, and leaders. The study, through the exploratory method, attempted to define the concept. The major objective was to determine whether there is a general consensus in the field, or whether common terminology is being used to indicate diverse perceptions on the part of different groups of the profession.

Significance of the Problem

Persons in the library and information services field are conscious of a lack of a theoretical framework for much of the field's domain; dialogue in the field (both in the literature and in professional meetings) frequently addresses this problem. If a "cliché" of the field, such as service orientation, could be clearly defined and made operational in the current study, the concept could become a part of the theoretical base of the field. The current study could prove useful to the library community by providing a philosophy of service to be included in the goals of a library, in the curricula of a library school, and in the policy statements and standards of the professional organization, the American Library Association. This philosophy of service, with the accompanying operational definition, could be communicated from the library professionals (administrators and practitioners) to the public. A professional ideology could contribute to the socialization process--translated by library educators and those training

new recruits in job situations. It could prove valuable input into a code of ethics, and in standards and norms developed for the field, including the evaluation criteria of the Committee on Accreditation of the American Library Association.

Context of the Problem

In order to clarify the concept of service orientation within the library field, current trends and problem areas which are pertinent to this topic will be discussed. One major problem area involves goals and objectives for the field, and the relationship of service orientation to these goals.

There has been much controversy within librarianship concerning the goals and objectives of the profession at large, especially when translated more specifically into library school curricula and evaluation criteria for library education. A part of this controversy is the commonly expressed problem of attracting, educating, and developing people who will become competent, innovative, and dedicated practitioners in a variety of settings. Three stages which are involved with this process are: recruitment and/or admission to the field, education within the graduate library schools, and continuing education. These three stages have been examined to different degrees in the literature of the field.

Continuing education has recently received the most

attention, especially the work of Elizabeth Stone and others for the National Commission on Libraries and Information Science[1] and the creation of CLENE.[2] Although it is apparent by these efforts, that many in the field feel that continuing education should become a basic part of the educational process, such a national goal is not yet realized. If this is to be accomplished, library schools need an accurate conceptualization of the profession's current as well as future needs, values, and goals.

Graduate library schools have a dual problem in the admissions process: selection of candidates who will be successful academically and selection of candidates who will be successful in the library field. The relationship between academic success and professional competence and/or professional leadership in the future is not clear. At first, the admissions process may seem to be a matching process of identifying among the many applicants those prospective students that have the best chance to succeed in library school. However, a dualism is involved when the following question is raised: Is the primary responsibility of the graduate professional library school to educate and place its graduates in available jobs in the field or to educate students for future roles in a changing society and for a "professional role"? The usual means of selection of students for graduate library education, the Graduate Record Examination, previous academic records, and letters of recommendation, do seem related to academic

success as shown by Cairns in 1972.[3] However, the degree to which academic success in library school is related to career success is not yet proven though recently studied by Ballard.[4]

Though this dualism was not explored as such in the current study, important questions need to be raised within this context. Today, the shortage of professional librarians is not the serious problem that it was thought to be when the "manpower crisis" was identified as the most immediate problem of the profession.[5] The time seems most appropriate for the profession to scrutinize closely common goals, needs, and values of the profession so that the educational process (both in graduate library schools and in programs of continuing education) can focus on meeting clear-cut goals which may include common values and philosophical views of the profession. Direction needs to be given to the processes of recruitment, selection, and education of new entrants to the field based on these goals.

A cautionary note is needed before this process is seen too simplisticly. It would be naive and shallow to believe that only one type of person is needed in such a diverse field as librarianship, a field where students have the opportunity to select within a variety of subspecialties, and beginning practitioners may select from a similar variety of job positions. This diversity is further reflected in the proliferation of groups of professional organizations such as the Special Library Association, the

Association of Research Libraries, the Medical Library Association, as well as the three more broadly based national organizations--the American Library Association (ALA), the American Society for Information Science (ASIS), and the Association for Educational Communications and Technology (AECT). The vagueness of the definition of "librarian" and "information scientist" is clearly shown by the diverse groups of practitioners becoming members of these various organizations. The differences of the terminology in the field describing the person and the work setting further illustrate the point--"librarian" and "library," "media specialist" and "media or learning or instructional center," "information scientist" and "information center" or "industrial laboratory." These terms may contribute to the "fuzzy set" of the field itself. The changing names of library schools also reflect this confusion as well as being a sign of a changing field.

The current work of Ralph Conant in the area of library education,[6] sponsored by the American Association of Library Schools (AALS), could contribute to the background information needed for the formulation of a clear set of educational goals and objectives on a national level; this overall work needs to be a cooperative effort of the AALS, the ALA, and the ASIS. The Conant Study involves a general survey of library school education through in-depth interviews of students, faculty, and administrators and leaders in the field in order to

determine the kind of match that is needed between the field and library education. The previously mentioned work of the National Commission on Libraries may add to this knowledge, even though the task of that group has a different focus.

The suggested work on a national set of goals and objectives for the library profession is almost certain to include the service concept. The current study could contribute to the general knowledge base needed.

Another problem area of the field was introduced in 1972 by Boll; he called for a nationwide study of professional trends and needs (a taxonomy of librarianship's educational objectives) in an article describing the problems of library education, along with a description of commonly considered but irreconcilable solutions. In Boll's view

> . . . librarianship in general is still guided largely by our largest professional association, which maintains the concept of the single profession. . . . [However, he advocates investigating projected needs of librarianship] to forget our professional mythology of unity [in doing so].[7]

The issue of the need for a "central professional core" as well as the extent of this core is discussed in Boll's article. He suggested that librarians may "well split . . . into functional clusters . . ." rather than ". . . along the standard division by type of library, or by type of service. . . ."[8] The question remains--within each of these functional clusters, is there still a core? And if

1. Is the concept of service orientation a basic concern of the library school students, of the practitioners in their various institutional settings, and of recognized leaders of the profession?

2. What are the perceptions of these groups of the concept of service orientation--is there a consensus of meaning or is there diversity?

This study is a preliminary attempt to investigate values of the profession concerning service orientation. The primary purpose, however, was to examine in depth one particular value of the field--that of service orientation. Information obtained in this study could serve as a beginning empirical effort to measure service orientation of various groups within the profession.

Three Ideal Types of Service Orientation

Terms related to the "service ideal" including service orientation, a service profession, a helping profession, a person profession or a personal service profession can be found in both library literature and the literature of other professions such as the health field, social work, and teaching. The sociology of professions uses the

terms, service ideal or service orientation, as a basic trait or characteristic of a profession. Even within these more specific contexts, the terms are often used ambiguously and even in some cases in dichotomous ways. It is important, therefore, to clarify the definitions of this concept.

Ideal Type 1

The first definition is found in the literature of the sociology of the professions in the context of the professionalization process. The service ideal or service orientation is best explained within this context by the sociologist, William Goode:

> The ideal of service, sometimes called a collectivity orientation, may be defined in this context as the norm that the technical solutions* which the professional arrives at should be based on the client's needs. . . .[9]

He reiterates and expands on this point in another context:

> Service orientation means that the professional decision is not properly to be based on the self-interest of the professional, but on the needs of the client. The practitioner defines, of course, what the client "needs"; it may not always be what the client wants.[10]

This orientation should not be confused with individual altruism. Goode maintains that professionals seek their own gain as much as any occupational group, and that professional associations fight to increase their privileges and advantages. However, in a discussion of professionalization, he explains the relationship of service orientation

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*Technical solutions imply exercise of special skills.

to the "standards" of a profession:

> The service orientation of a profession is expressed in its code of ethics . . . identifies the statuses of colleagues and client . . . and specifies the role of role obligations of the professional to the public as well as to colleagues and clients.11

More specifically, Goode defines the ideal of service by listing the following subdimensions:

1. It is the practitioner who decides upon the client's needs, and the occupation will be classified as less professional if the client imposes his own judgment.

2. The profession demands real sacrifice from practitioners as an ideal, and from time to time, in fact. . . .*

3. The society actually believes that the profession not only accepts these ideals but also follows them to some extent.

4. The professional community sets up a system of rewards and punishments such that "virtue pays"; i.e., in general, the practitioner who lives by the service ideal must be more successful than the practitioner who does not.12

Two other pertinent elements of service orientation are further commented on by Goode in the following remarks:

> The service orientation also means that the profession spends both time and money in seeking superior candidates and giving them better training, even though this increases competition in the field.13

> Only to the extent that the society believes the profession is regulated by this collectivity orientation will it grant the profession much autonomy or freedom, from lay supervision and control.14

Goode speaks of "the ideal of service" as one of two generating traits of professionalism (along with a

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*As related to librarianship, a real example might be the librarian who while defending the principle of intellectual freedom jeopardized his job position.

basic body of abstract knowledge). From these two traits are generated all the other characteristics that are considered typical of the established professions: autonomy; codes of ethics; high educational requirements; high income, prestige, and influence; licensure; commitment; a professional community; etc. He explains that each trait contains many dimensions, and that each subdimension is a continuum, so that

> . . . a given occupation may fall somewhere toward the professional pole or not; and one may ask where along that subcontinuum any occupation may be found even if clearly it is not to be considered a profession. Necessarily, too, at present, we have no adequate measure for any of these subdimensions, and must be content with reasonable assertions about where a given type of job may fall.[15]

He suggests that in view of looking at each trait as a dimension on a continuum, a given occupation may be rated high or low with respect to that particular trait. Instead of the dichotomy of professional/nonprofessional, the variable of professionalism might be viewed as the extent or degree to which an occupation has moved toward the pole of professionalism.

In the current study, the concept of service orientation will be viewed as a subvariable of professionalism in terms of an ideal type, and the extent to which the library field has moved toward this ideal type. Goode, in his discussion of the generating traits of professionalism, speaks of each of the traits as derived from an "ideal-typical conception" whose closest approximation is medicine

and the priesthood.[16]

Max Weber is often credited with the use of the ideal type as a methodological concept useful as a tool to analyze an individual or an organization (for example, his work on bureaucracy).[17] Researchers should note that "the ideal-type construct is intended as a guide in empirical research, not as a substitute for it."[18] Many researchers and theorists have used Weber's concept and have justified its use. Blau and Meyer define the ideal type in the following way:

> Weber's concept of the ideal-type does not represent an average of the attributes of all existing bureaucracies (or other social structures), but a pure type, derived by abstracting the most characteristic, [bureaucratic] aspects of all known organizations. Since perfect [bureaucratization] is never fully realized, no empirical organization corresponds exactly to this scientific construct.[19]

By looking at the attributes of service orientation in its pure form, i.e., as an ideal type, it is possible that research can be directed to determine the extent of service orientation in the library profession. Such a conceptual scheme will allow one to be specific about each of the attributes and to attempt operational definitions of each.

If particular beliefs and behaviors can be proven to be indicators of service orientation and if service orientation is the desired goal of those practicing in the field of librarianship, a measurement of service orientation of practitioners will allow the profession to work

toward this goal. This use of ideal types is in accord with Weber's use of the tool of ideal type as "a generalized rubric within which an indefinite number of particular cases may be classified." It is important to keep in mind that the ideal type is an illusion, the most perfect composite of all cases in a given group. In this way it serves as a bench mark.[20]

For the current investigation, Goode's definition of service orientation explained in the context of an ideal type was the first theoretical definition and will be referred to hereafter as Ideal Type 1 Service Orientation, the Traditional-Professional Type. Figure 1 delineates the attributes of this concept. The Traditional-Professional Type is currently the most accepted definition, and consequently is the most clearly defined of the three definitions being presented.

Ideal Type 2

The second definition of service orientation is that suggested by Simpson and Simpson in their work on semiprofessional organizations, those which are women dominated and found within bureaucratic organizations. They claimed that in 1960 women constituted 86 percent of all librarians, and that the prevalence of women in the library field (as well as in nursing, public school teaching, and social work) allows a predominantly bureaucratic control pattern instead of following the autonomy of other

professions such as law or teaching at the university.

Simpson and Simpson in their discussions of the semi-professions explain:

> The main intrinsic appeal of the semi-professions is to the heart, not the mind. All of these occupations attract individuals who want to work with people and to be of service. These are values that appeal more to women than to men . . . but women can satisfy their desires for service through family life. . . . Even strong humanitarian motives . . . are usually insufficient to create strong vocational commitments among women.[21]

> . . . [women] tend to be more interested in giving personal service to clients than in technical mastery of skills or in [exercise of] professional prerogatives of defining how their skills will be put to use.[22]

> A fundamental orientation of semi-professionals is their desire to be helpful to others, to give humanitarian service. This must be distinguished sharply from the obligation to put the welfare of clients before personal gain which is regarded as a hallmark of the professions. The service component [of the professional model] in the ideal-typical relation of professional to client is . . . functionally specific, instrumental, affectively neutral, and universalistic.[23]

> . . . What we mean by the service orientation of semi-professions is different from this. It is an emotionally felt humanitarian urge to give of oneself, to relate in an intensely personal way to the recipient of the service. The act of service is its own reward, an expressive act, and it established a diffuse particularistic tie . . . thus quite different from the professional orientation. Professional activity is sometimes expressive, both the rewards are derived more from the exercise of skills than from the response of the client, who may sometimes be seen essentially as an object to whom skills are applied. . . . To distinguish the desire to give service and relate to the whole person from the professional's concern with the exercise of special skills, we shall use the term holistic versus task orientation.[24]

More recently, writing in library literature, DeWeese makes a similar distinction between the two types of service orientation in his criticism of librarians who

abdicate their autonomy in their efforts to please their clients.

> . . . "serving" the client means "helping," learning his wishes and satisfying them. "Serving" does not seem to mean--to librarians in general--defining what is best for the client in terms of some set of professional standards of concern and giving that to the client. The librarian works within his client's wishes, instead of imposing his professional categories, conceptions, and authority on his clients. *In other words, librarians seem to respond to the* expressed "desires" of clients instead of the "needs" of clients as defined by a body of professional library knowledge.[25]

DeWeese suggests that the profession's definition of service should change; there must be

> . . . common values. [Librarians] must think of themselves as a collectivity . . . present values must *change from tacit, implicit ones of individuals to* overt, explicit values of the field.[26]

In 1960, Leigh had warned librarians of this same danger by stating:

> Thus "serving the reader" means "helping" him, learning his wishes and satisfying them. This comes dangerously close to the position taken by a minority of librarians. . . .[27]

Goode also discusses this same phenomenon in a special issue of Library Quarterly devoted to librarianship as a profession:

> . . . That their duty is to give the people what they want . . . yields a central meaning of service, the commitment to run personal risks in order to fulfill a higher obligation to the society, to educate the *readers and the public. This strain between the* wishes and the real needs of a clientele is perhaps to be found in all professions. . . .[28]

The second definition of service, as first posited by Simpson and Simpson and further delineated by DeWeese,

will be referred to as ideal Type 2, the Semiprofessional Type. Figure 2 lists the key attributes of this definition. This definition, though perhaps less well-defined than the Traditional-Professional Type, is also used in the literature of sociology.

Ideal Type 3

Though neither one of the two types mentioned above seemed to encompass the variety of ideas about service orientation expressed in library literature and the people in the library profession, it was not until recently that a journal article by Hanks and Schmidt[29] summarized a third possible type which may or may not exist in reality, the Open-Systems Model. For the purposes of this study, this will serve as a third ideal type. The authors presented the traditional model of a profession, as previously explained in the current work, but suggested that it is a faulty model for the library profession due to its resistance to change. Their alternative model is dynamic, always open to change, and is based on the open-systems paradigm from General Systems Theory. In discussing its implications for librarianship, they note that one of the traditional type characteristics--a primary orientation to community interest rather than to individual self-interests (much like the service ideal concept)--is negated by other elements of the model, e.g., the concept of autonomy. The changing environment of librarianship, as presented by

these authors, includes: the media revolution, advanced computer technology, an emerging interest in community control, and a sensitivity to social responsibilities. Due to these major trends, the library field has become cognizant of the forces of change. These rapid changes make the field a "marginal one" with respect to the traditional model of a profession. For this reason, they propose an alternative--the Open-Systems Model. According to Hanks and Schmidt:

> The model of professionalism we propose, then, is one that recognizes that a profession, as a social phenomenon, must interact with its environment.[30]
>
> In terms of librarianship, such a model would mean a primary commitment to users and a primary concern for information.[31]
>
> Open systems librarianship would import energy from the environment (the community) in the form of money, social and political influence, and raw information. Then, using feedbacks about the needs of the community, librarians would transform this energy into library services which would be released back into the environment. The community would in turn generate more energy (information) and feedback which would be imported for repetition of the cycle.[32]

These authors discuss the following implications of the open-systems concept for librarianship:

1. [it] would result in libraries which are concerned with their clients both in terms of time and in terms of "space" . . . with the totality of the client as a person in society.

2. [it would allow the] development of more client-centered roles for librarians, and the concurrent deprofessionalization of functional roles, such as cataloging and reference. . . . Customized service would be the hallmark. . . .

3. [the] phasing out of the traditional media-centered roles as professional activities. . . . Replacement

> of the traditional functional organization of the library with one based on the types of clients served.
>
> 4. . . . [the] patrons are seen as members of the library's organization, . . . client advocacy.
>
> 5. . . . [it would] change the role of the library administrator from one of supervision to one of coordination. . . . Participation of non-administrative personnel in the decision-making process [would result].
>
> 6. . . . [it would] affect the organizational environment of libraries . . . to identify and to create (cause to be created) the organizational setting in which the open systems model with its client-information dominance can best flourish.
>
> 7. [there would be a] need for profound changes in the content, structure, and methodology of library education. . . . More education in the behavioral sciences . . . in communication, information science, computer science, and even mathematics. . . . Librarians serving different types of clients would require different types of knowledge.[33]

In figure 3, the key characteristics of ideal Type 3 are listed as delineated by Gardner and Schmidt, but are reordered to match the similar key characteristics of figures 1 and 2.

Though an ideal type can never be approximated exactly in reality, this ideal type may simply be a conception of what is desired. It obviously is not as clearly defined as the previous two ideal types.

Residual Cases (Type 4)

Several areas relating to service orientation found in library literature were not included in the given description of the three ideal types. For example, providing instruction versus expecting patrons to use reference

1. Autonomous
2. Objectivity
3. Seek to satisfy client's needs
4. Prefer to exercise special technical skills
5. Willing to sacrifice due to commitment to profession
6. Successful
7. Follow a code of ethics and standards or norms

Fig. 1. Ideal Type 1 Service Orientation: Traditional-Professional Type.

1. Accept bureaucratic control

2. Subjectivity (emotional, personal)

3. Seek to satisfy clients' wants (desires, wishes)

4. Prefer to work with people in personal ways, but less concerned with exercise of special, technical skills

5. Unwilling to sacrifice due to other important activities

6. Belief that work with people is own reward

7. . . .*

---

*To allow a comparison of key characteristics across types, each number of each figure corresponds; therefore, when an appropriate characteristic is not found for a particular ideal type, ellipses are used.

Fig. 2. Ideal Type 2 Service Orientation: Semiprofessional Type.

1. Interdependence between the profession and the community

2. Flexibility in methods; creativity

3. Constant communication between the profession and the community concerning the needs of the community, the ways in which the profession can meet these needs, and the effectiveness of professional activities that are in operation

4. Specialization

5. . . .*

6. Security based on social, political, and economic support of the community

7. Ability to adapt to changes in the social environment

SOURCE: Gardner Hanks and C. James Schmidt, "An Alternative Model of a Profession for Libraries," College and Research Libraries 36 (May 1975):181 (items are reordered).

*To allow a comparison of key characteristics across types, each number of each figure corresponds; therefore, when an appropriate characteristic is not found for a particular ideal type, ellipses are used.

Fig. 3. Ideal Type 3 Service Orientation: Open-Systems Type.

tools by themselves is debated in reference "theory." The lack of accuracy of information given to library patrons by librarians has been explored by Crowley and Childers.[34] Studies of personality traits of librarians have indicated a conservative, nonconfident, submissive, noninnovative profile while the value studies have indicated an "aesthetic," "theoretical," and "intrinsic-reward-oriented" person (to be discussed further in chapter III). Though some of these items might conceptually "fit" an ideal type, it was not possible to change the given descriptions for a proper test of the types.

Consequently, these additional items were combined into a fourth category for convenience, and will be referred to throughout the study as Type 4. However, it should be understood that this category does not represent a conceptual ideal type. The test of the items, which will be explained in chapter IV, allowed any of these items to become part of new ideal types.

All of the items categorized into ideal types are found in appendix F.

Summary

The current study was concerned with the meaning of the concept, service orientation, as it relates to the library and information services field. The major objective of the study was to determine the degree of consensus on service orientation of subgroups of the field including

students, leaders, and practitioners. It is considered appropriate to explore this concept due to its assumed importance in the library field.

The results of the current study should contribute to the theoretical framework of the field. Service orientation as a clearly defined concept would be useful as an integral part of the philosophy of the field to be utilized in setting goals of libraries, formulating curricula for library schools, and in establishing policy statements and standards for the profession at large.

Three ideal types of service orientation have been presented as a theoretical base as abstracted from the literature of the fields of sociology and library science. These three ideal types of service served as the basis for the formulation of the items in the development of the service instrument, which was used to ascertain the respondents' perception of service orientation.

CHAPTER I: NOTES

[1]Elizabeth Stone, Continuing Library and Information Science Education, final report to the National Commission on Libraries and Information Science (Washington, D.C.: U.S. Government Printing Office, 1973).

[2]CLENE stands for Continuing Library Education Network and Exchange, Inc., a nonprofit corporation, to "promote" continuing education of library and information science personnel.

[3]Sister Marie L. Cairns, "Factors Affecting Selective Admission and Retention of Students in Graduate Library Programs" (Ph.D. dissertation, Florida State University, 1972).

[4]Robert M. Ballard, "A Follow-up Study of the Academic Record and Career Experiences of Students Enrolled for the AMLS Degree at the Department of Library Science, University of Michigan, 1960-1961" (Ph.D. dissertation, University of Michigan, 1972).

[5]Lester Asheim, "Library Education and Manpower," American Libraries 1 (April 1970):341-44.

[6]Interview with Audrey Conant, Rutgers University, New Brunswick, N. J., 1975.

[7]John J. Boll, "A Basis for Library Education," Library Quarterly 42 (April 1972):207, 209.

[8]Ibid., p. 195.

[9]William J. Goode, "The Theoretical Limits of Professionalism," in The Semi-Professions, ed. Amitai Etzioni (New York: Free Press, 1969), pp. 266-313.

[10]William J. Goode, "The Librarian: From Occupation to Profession?" Library Quarterly 31 (October 1961): 308.

[11]Ibid., p. 315.

[12]Goode, "The Theoretical Limits of Professionalism," pp. 278-79.

[13]Goode, "The Librarian," p. 308.

[14]Ibid.

[15]Goode, "The Theoretical Limits of Professionalism," pp. 276-77.

[16]Ibid.

[17]H. H. Gerth and C. Wright Mills, eds., From Max Weber: Essays in Sociology (New York: Oxford University Press, 1946), pp. 196-257; and Max Weber, The Theory of Social and Economic Organization, trans. A. M. Henderson and Talcott Parsons (New York: Oxford University Press, 1947), pp. 330-40.

[18]Peter M. Blau and Marshall W. Meyer, Bureaucracy in Modern Society (New York: Random House, 1971), p. 24.

[19]Ibid.

[20]Robert Presthus, The Organizational Society (New York: Vintage Books, 1962), p. 14.

[21]Richard H. Simpson and Ida H. Simpson, "Women and Bureaucracy in the Semi-Professions," in The Semi-Professions and Their Organization, ed. Amitai Etzioni (New York: Free Press, 1969), p. 203.

[22]Ibid., p. 231.

[23]Ibid., p. 235.

[24]Ibid.

[25]Lemuel C. DeWeese, "A Paradigm of Commitment Toward Professional Identity," Special Libraries 61 (December 1970):542.

[26]Ibid., p. 541.

[27]Robert D. Leigh, The Public Library in the United States (New York: Columbia University Press, 1960), p. 186.

[28]Goode, "The Librarian," pp. 316-17.

[29]Gardner Hanks and C. James Schmidt, "An Alternative Model of a Profession for Libraries," College and Research Libraries 36 (May 1975):175-87.

[30]Ibid., p. 181.

[31]Ibid., pp. 181-82.

[32]Ibid., p. 182.

[33]Ibid., pp. 182-85.

[34]Terence Crowley, "The Effectiveness of Information Service in Medium Size Public Libraries" (Ph.D.

dissertation, Rutgers University, 1968); and Thomas A. Childers, "Telephone Information Service in Public Libraries" (Ph.D. dissertation, Rutgers University, 1970).

CHAPTER II

CONCEPTUAL BACKGROUND OF THE STUDY

The present investigation draws from concepts and theories in three areas: the sociology of professions, librarianship as a profession, and the concept of values as interpreted in psychology and sociology.

In order to examine the concept of service orientation, which is an integral characteristic of the professions, it was necessary to be cognizant of the process of professionalization. This process has been the concern of the area designated the sociology of professions and will be discussed in the first section of this chapter. The next section will focus on writings on librarianship as a profession in a discussion of the current state of the library field's claim as a profession. The final portion of the chapter will examine the concept of values--definitions, ways of measurement, and research--and discuss service orientation as a value.

About Professions and Professionalism

The nature of professions and the process of professionalization have been reviewed by many writers in the field of sociology.[1] Sociologists interested in the field

of occupations have generally concentrated on two areas--establishing criteria to evaluate a profession, and examining whether a given occupation is or is not a profession within this set of criteria. Within the area of the sociology of professions, an "attribute approach" has generally been used, which includes listing the criteria or characteristics of a profession. The number of attributes and the importance of each differs in the various writings. An often quoted and reprinted article following this format is that of Greenwood who lists as attributes of a profession:

1. systematic theory
2. professional authority
3. community sanction
4. ethical code
5. professional culture[2]

Most writers agree on the characteristics that distinguish the professions from other occupations. These characteristics include: having a body of theoretical knowledge, having special skills and competence in application of this knowledge, and having a code of ethics to guide their professional behavior. This last characteristic includes a "service to the client" orientation.

In a more specific delineation of the "professional model," Hall claims there are

> . . . a series of attributes which are important in distinguishing professions from other occupations. . . . The attributes of the model are of two basic types. First are those characteristics which are part of the structure of the occupation, including such things as formal educational and entrance requirements.[3]

A second aspect that Hall speaks of is attitudinal,

including a sense of calling of the person to the field and the extent to which a person uses colleagues as his major work reference. The attitudinal attributes of professionalism reflect the manner in which the practitioner views his work. Hall lists five such attitudinal attributes:

1. the use of the professional organization as a major reference--formal organization and informal colleague groupings as the major source of ideas and judgments for the professional in his work.
2. a belief in service to the public, in the indispensibility of the profession--the view that work benefits both the public and the practitioner.
3. a belief in self-regulation--a person best qualified to judge work is the fellow professional--colleague control.
4. a sense of calling to the field--dedication to his work, wanting to do the work even if fewer extrinsic rewards are available.
5. a feeling of autonomy, being able to make [his] own decisions about his work without external pressures (from clients or from the employing organization).[4]

Hall developed a Likert-like scale to measure the degree of professionalization among practitioners of various occupations. The service concept is always included in these delineations of attributes of professions--either specifically as in Hall's conception or more generally as included in a code of ethics.

Much of the work on professions has either been speculative or based on untested assumptions, especially the assumption that the professional model is the best model that all occupations should follow. This method of studying a particular occupation by measuring it against a

list of attributes is justifiably criticized by Julius Roth:

> The trouble with the attribute approach is that it does not focus on this process of professionalization but on its product, and typically even this focus is contaminated with the ideology and hopes of professional groups rather than an independent assessment of what they achieve.[5]

However, Roth does not deny that the process is "an important and proper subject for study in sociology."[6] He objects to the attribute lists and the rating of occupations on a professionalism scale as both a theoretical dead-end, and more importantly because

> . . . they have deflected concern from the more crucial problems created by professionalization, such as the avoidance of accountability to the public, the manipulation of political power to promote monopoly control, and the restriction of services to create scarcities and increase costs.[7]

Gilb also criticizes the assumption that professionalism is good: ". . . professional interests are often in conflict with public interest."[8] Until fairly recently, the assumption that full professionalization is a worthwhile endeavor and that all occupations should aspire to this status was taken for granted. However, a questioning of this assumption can now be found in the literature. For example, in social work literature a "resistance to full professionalization and a tendency toward deprofessionalization can be detected."[9] Perhaps, as Toren has pointed out, in a discussion of the field of social work,

> . . . overprofessionalization in social work might cause the loss of its basic humanitarian values, and the profession will be drawn away from its commitment to social reform.[10]

Toren sees the orientation characterizing the professional's attitude as a negative one, ". . . infringing upon personal interest and total responsibility which are fundamental to the 'helping professions.'"[11]

A new theoretical framework of professionalization may need to be developed in terms of the assessment of a new and developing (or changing) occupation. For example, looking at power relationships of the occupational group has been suggested by Terence Johnson.[12] He attempted to analyze differences in development of an occupation in light of the organizational and cultural environment. Also, the work of Carr-Saunders has differentiated four major types of professions in modern society:

1. The established professions--law, medicine, and the church--which share two basic attributes; their practice is based upon theoretical study, and the members are governed by a certain mode of behavior.

2. The new professions--engineering, accounting, natural and social science--those which are based on their own fundamental studies.

3. Semiprofessions--nursing, pharmacy, social work --which replace theoretical study by the acquisition of technical skills.

4. Would-be professions--such as hospital managers, sales managers--who require neither theoretical study nor the acquisition of exact techniques but rather the familiarity with modern practices.[13]

A more recent work by Etzioni[14] focuses on the semiprofessional group which could include the library field according to Etzioni's definition. Etzioni presents a set of questions which are important in a study of semi-professions, including the question--what typical attitudes to clientele, management, and service ideology do they hold? He also suggests looking at various subgroups of the same professional group in terms of these specific questions, suggesting a frame of comparison which will hold cultural and societal contexts constant. The current study follows his suggestion, but focuses on the one aspect of service ideology rather than the many aspects of the semi-professions he suggests.

Librarianship as a Profession

Writings on librarianship as a profession have also subscribed to the "attribute" method. A well-known work on this subject by William Goode maintains that librarianship is not now a profession in that it lacks:

1. prolonged specialized training in a body of abstract knowledge and
2. a collectivity or service orientation, in terms of professionally defined "needs" of the client, rather than what the client simply "wants."[15]

Goode's definition of service orientation has been fully enumerated already in chapter I.

Bundy and Wasserman[16] in 1968 questioned librarianship as a profession by examining three key relationships of a professional--client, organizational, and professional.

Again, they assessed the field in view of the traditional-professional model. Their comments on the librarian-client relationship have the most bearing on the content of this study. They discussed the professional model where the client relies upon the professional for the expertise which his problem or situation requires, and the professional (by using his training, experience, and specialized knowledge) offers the client the appropriate answer (a particular material, service, etc.) regardless of the client's opinion of whether it is appropriate or not. They argued that "librarians achieve intrinsic satisfaction from the very act of serving and are content to perform in minor and inconsequential capacities."[17] The timidity of practitioners in providing definite answers, the extinction of the reader's advisory role, the reference librarians who do not offer judgments about the quality or relevance of materials for a particular informational problem--all are presented as examples of the lack of a professional role. Main activities of many librarians--collection building to meet quantitative standards, concern for catalog codes and procedures, and the dedication to the book literature over other media--are further examples of the misplaced emphasis of the librarian according to these authors.

Bundy and Wasserman suggested the revision of professional commitments for library service including commitment to constituencies not now viewed as the library's responsibility; and for professionals in organizations to

assume decision-making responsibilities in relation to goals and standards of service. The basic element in their work is a plea for the library field to forge a new professional identity. However, they basically accepted the traditional model of the professions.

More recently, and five years after the Bundy and Wasserman article appeared, Leo Flanagan supported many of the same arguments but with a somewhat different conclusion --that library education needs to be improved especially in the area of reforms in admissions and curricula. He is somewhat pessimistic of this happening, however. Flanagan also accepts the professional model as being "the best choice."[18]

Ralph Edwards has posited another idea concerning the lack of development of a profession of librarianship--the failure to clarify the differences between the functions of library managers as distinguished from the functions of librarians performing as professionals. He has criticized a limiting conception of management with its roots in bureaucratic models of library organization which he claims has dominated most libraries. He suggests a "broader vision of both the library profession and library management" due to his feeling that "most librarians and library administrators are unaware of the special characteristics of a profession and of the conditions necessary for the successful functioning of a professional." The crucial point that Edwards is making is "that neither

society nor librarianship has an adequate conception of what the role and services of the library profession are or might be." Edwards contends that

> . . . library management has taken precedence over the professional functions of librarians and that in most libraries the professional functions are consequently eclipsed and downgraded in both the attitudes and performance of librarians.[19]

Schmidt and Hanks have suggested that it may be more appropriate to look at the library field through the open-systems model rather than the accepted traditional paradigm. Hanks and Schmidt examined the traditional model of a profession as based on the literature presented in the field of sociology in context of the question--is the model of professionalism an ideal to which librarianship should aspire? The authors found that there "is an intrinsic conflict between the model of professionalism to which librarianship has aspired and the ability of this model to accommodate change."[20] They concluded that the traditional paradigm reinforces conservatism in the face of change. This they suggest is especially dangerous in the changing environment of librarianship. They view the field as needing to be dynamic and client centered, both traits not compatible with the status quo condition of the traditional-professional model. To them, "librarianship is in the process of becoming something other than it has been"[21] largely due to the technological and social changes both in and out of libraries. The open-systems model of professionalism as defined in chapter I is presented as an alternative.

Librarianship and a Professional Culture

An important aspect of professionalization is the area of a "professional culture" which includes a professional organization, and professional standards or norms that are usually expressed in a code of ethics. Both Carr-Saunders and Greenwood discussed the necessity for true professions to have a code of ethics and a professional culture, and Carr-Saunders felt that a professional association is an essential part of professionalism.

In 1972, the American Library Association (ALA) had a membership of 27,000 individuals and 5,500 organizations. Only about one-half of the total number of librarians in the country belonged to the ALA. In a recent analysis of ALA, Boissonnas criticized the organization because

> . . . it does not possess many of the more important characteristics of true professional associations, such as an effective control over the entry into the profession, a strong code of ethics, a strong commitment to the protection of the economic interests of its members, or the power to enforce many of its standards.[22]

An examination of documents of ALA to find standards or norms for the profession reveals several pertinent documents. ALA passed its first code of ethics in 1938. It was not a typical code of ethics of a professional organization because it did not set up rules for professionals to follow in their relationships with their clients and among themselves. In fact, it "tells the librarian to obey his employees and to live for the library and its users."[23] William Goode criticized this code by stating:

> A code reflects the particular genius of the profession that writes it. How lacking in this code is any sense of drama, of moral urgency! How absent is a sturdy awareness that the profession has a task, a destiny, a set of issues about which it is concerned.[24]

However, the Library Bill of Rights, passed in 1939 and amended several times, is perhaps the most significant ALA document in dealing with freedom of access to materials and libraries as well as freedom of expression for librarians.

A new Statement on Professional Ethics was accepted by the Council of the American Library Association during the Midwinter Conference of 1975, replacing the 1938 Code of Ethics.[25] It has been announced that the plan is to augment the code by "detailed interpretations, practices, and related materials as they are needed."[26] A copy of the new Code can be found in appendix A. In neither the Introduction nor in the Code itself is there an expression of the importance of the work of those in the library and information field or of the service concept.

Though not labeled as a code or standard, a stronger statement can be found in the "Commitment to Information Services: Developmental Guidelines," prepared by the Standards Committee of the Reference and Adult Services Division of the American Library Association. A copy of this is found in appendix B. Though these guidelines are primarily concerned with reference and information services, it is essentially a standard for the profession. For example, the Guidelines state:

> The librarian/information specialist must be the

> intermediary or the negotiator for unlocking these multifarious information resources. This responsibility places the concept of good service on the ability of the librarian/information specialist to be an effective facilitator in this transaction.
>
> Providing reference services in a library or information center should be recognized as a critical responsibility in meeting the information needs of users and prospective users.[27]

Specific points made in the Guidelines which are important to the concept of service orientation include: the need "to anticipate user needs and demands," the need for "a published service code . . . ," "services are to be reviewed," the importance of "continuous feedback from users," "plan for the instruction of individuals in the use of informational aids," "access is to be promoted," and "referrals to other sources and agencies are to be a standard level of information service operation."

In this cursory assessment of the library field's professional culture, the words of William Goode (about the 1938 Code of Ethics) are still true in 1976; that the idea of a task, a destiny, and a set of issues still needs to be delineated for the profession. An operational definition of service along with a measurement instrument for service, the expected results of the current study, would contribute to this task.

Concept of Values

One of the questions in this study was concerned with the importance of service orientation as a value in the field of library and information services. In order

to assess a particular value, it is first necessary to define values, how they relate to attitudes and behavior, and to examine the state of research in the area. Values have been a research concern of several social psychologists, especially Kluckhohn, Catton, and Rokeach.

About Values

A value has usually been defined as a conception of something which is desirable. A well-known definition by Kluckhohn proposes:

> A value *is a conception, explicit or implicit, distinctive* of an individual or characteristic of a group, of the desirable which influences the selection from available modes, means, and ends to action.[28]

Value orientation is used to mean the empirically measured tendency to react favorably or unfavorably to *certain generalized conceptions, such as individualism,* familiarism, security, and the like. It is understood that values must be inferred from behavior--both what people say and from what people do. A pattern of regularity of choices then allows the researcher to infer value orientations.

A more commonly defined concept is that of attitude, and this concept seems to be the target of most of the research in the area. However, according to Rokeach, "an attitude differs from a value in that an attitude refers to an organization of several beliefs around a specific object or situation" while "a value, on the other hand, refers to a single belief of a very specific kind."[29] Rokeach presents a definition that helps in the distinction

between values and attitudes:

> To say that a person has a value is to say that he has an enduring, prescriptive or proscriptive belief that a specific mode of behavior or end-state of existence is preferred to an oppositive mode of behavior or end-state. This belief transcends attitudes toward objects and toward situations; it is a standard that guides and determines action, attitudes towards objects and situations, ideology, presentations of self to others, evaluations, judgements, justifications, comparisons of self with others and attempts to influence others. Values serve adjustive, ego defensive, knowledge, and self-actualizing functions. . . .[30]

Five assumptions about the nature of human values are presented by Rokeach:

1. The total number of values that a person possesses is relatively small.
2. All men everywhere possess the same values to different degrees.
3. Values are organized into value systems.
4. The antecedents of human values can be traced to culture, society, and its institutions, and personality.
5. The consequences of human values will be manifested in virtually all phenomena that social scientists might consider worth investigating and understanding. (For examples, attitudes and behavior.)[31]

The basic thesis of Rokeach is that knowing a person's values should allow one to predict behavior in experimental and real-life situations. He suggests that

> . . . a major reason psychologists have paid more attention to the attitude than to the value concept is that more sophisticated methods have been available for measuring attitudes because of the efforts of such men as Bogardus, Thurstone, Likert, and Guttman.[32]

Bauer comments on the importance of value structures in the following:

> Every society exhibits a complex and shifting structure

> of values. This value structure may be regarded as a patterned set of general attitudes toward what is desirable or undesirable.[33]
>
> By values we mean those things that the people want, are willing to commit resources to and work for, and for which they have some sense of priority.[34]

Measuring Values

In a brief review of the empirical research on measuring values and a discussion of the theoretical issues, Levitin reports that more attention has been paid by anthropologists and sociologists than psychologists to the conceptualization of values.[35]

In the 1930's the Allport-Vernon Study of Values[36] emerged as the most used instrument. This instrument was largely influenced by the work of Spranger on "types of men."

In another effort, Catton demonstrated the intercorrelation of three methods for eliciting information about six ultimate values--"choosing between paired alternatives, selecting the 'most infinite' value, and rating values according to ultimacy or importance."[37]

Two problems have developed in this area of measurement: the belief

> that because values were based on irrational or inexpressable feelings they were not accessible to available psychometric techniques . . . [the need] to find a fruitful conceptual or theoretical framework from which to initiate research.[38]

The measurement issue has not been solved, but the work of Rokeach indicates that the problem is not insurmountable. The conceptual problem is one long debated in

the whole area of attitudes, values, and behavior research. Most psychologists seem to prefer one definition suggested by Adler--"values may be seen as present in man (or men), as preferences held by people (whether learned, innate, or both)."[39] In this way, value becomes a

> kind of "meta-attitude"--not directly accessible to observation but inferable from verbal statements and other behaviors and useful in predicting still other observable and measurable verbal and nonverbal behaviour.[40]

Rokeach has stated that

> . . . the concept of values, more than any other, is *the core concept across all the social sciences*. It is the main dependent variable in the study of culture, *society, and personality, and the main independent* variable in the study of social attitudes and behavior.[41]

He explains that

> . . . values and attitudes are intervening variables . . . presumed to be the main genotypes that underlie or determine social behavior . . . are functionally related in certain ways.[42]

Goode and Hatt, in 1952, agreed with Rokeach's statements:

> The central position of value judgments in the social science lies in the fact that value judgments are merely the formalized expressions of sentiments and emotions derived from the culture and impelling men to action. Values are thus major determinants of human behavior and hence major areas for study by social science. . . . The description of this value conflict is a scientific operation. . . . The exposure of logical contradictions in value systems is a legitimate scientific activity, even though special pleading for one system or the other is not.[43]

More recently, Bauer in Social Indicators summarized the current state of the art:

> One way or another, an assessment of the values of the

> population is always done. It may be via the intuitive judgment of an experienced political labor or social leader. Or more formally as in recent times, it may be via public opinion polls, which have even in some instances given us good trend data on people's attitudes toward a variety of institutions and issues.[44]

Kluckhohn's work is probably the most complete work on a theoretical foundation for research on values.[45]

A Value Survey Instrument developed by Rokeach et al.

> has been found to discriminate among many different groups . . . can be used as a diagnostic tool to identify the needs, goals, aspirations, and conflicts within and between individuals and groups.

The Survey is an all purpose instrument for research on human values, is simple in design, economical to administer to individuals and groups, and can be used in approximately 10 to 20 minutes to secure measures. Data are now available on two national surveys using this instrument through the National Opinion Research Council. Respondents rank order 18 terminal values (ends) and 18 instrumental values (means). One part of the instrument includes these terminal values:

A comfortable life	Inner harmony
An exciting life	Mature love
A sense of accomplishment	National security
A world at peace	Pleasure
A world of beauty	Salvation
Equality	Self-respect
Family security	Social recognition
Freedom	True friendship
Happiness	Wisdom[46]

A seemingly simple procedure has produced "interesting results in value-change and behavior-change experiments using the Survey."[47] These are discussed more fully along

with a conceptual exploration of beliefs, attitudes, values, and their relationships in Rokeach's Beliefs, Attitudes, and Values.

Sikula has used the Rokeach Value Survey to report the values and value systems of fifty-four male governmental executives employed by the Federal Department of Health, Education, and Welfare who were classified grade 14 or above within the Civil Service classifications and were from a six state region in the Midwest. He found that governmental executives gave their highest priorities, in order, to the goals (end-states of existence) of Family Security, Self-Respect, A Sense of Accomplishment, Freedom, and Equality, and the least emphasis on Pleasure, A Comfortable Life, A World of Beauty, and Salvation. He summarized:

> In general, this study supports the contention that personalities within certain occupations and careers have unique value and value system characteristics. . . . Additional insight into all types of human behavior can be obtained by analysis of individual values and value systems.[48]

Sikula suggests that selection and placement procedures could be improved by use of value data, in "matching" an individual's value profile to the value prototype of any job, position, occupation, or career. While Kuder and Strong tests[49] are sometimes used for this purpose the Rokeach instrument would be faster and more economical.

About Work Values

There have been numerous attempts at dealing with unidimensional values such as achievement, occupational,

and religious values. Occupational or work values are the things that people want to be, to have, to enjoy, as a result of their occupations. Perhaps the best-known study of occupational choice is that of Morris Rosenberg and others, which relates values to the types of occupations chosen by college students.

The Rosenberg Occupational Values Instrument consists of a list of ten occupational values with accompanying directions for a respondent to "consider to what extent a job or career would have to satisfy each of these requirements before (he) could consider it IDEAL." A ranking of high, medium, or low is first done; then the high items are ranked in order of importance. An attempt was made to categorize people into occupational value complexes, described as "self-expression-oriented," "people-oriented," and "extrinsic-reward-oriented."[50] Intercorrelation of the ten responses showed that the three clusters of orientation did appear.

Rosenberg's (1957) original study[51] also uncovered some interesting value differences between college students whose studies were apparently heading them into different professional and managerial professions. He found that people who enter different kinds of occupations have different outlooks on work as a part of life.

Fifty-nine percent of the college women and 39 percent of the college men named "work with people" as a highly important occupational value. A "compliant personality

type" was identified in Rosenberg's study. He found that the occupational values most characteristic of "compliant students" in his sample were the people-oriented values that appealed mainly to women. Replies to value questions seemed to fall into three clusters: compliant (anxious to be well-liked, liking to take orders but not to give them, and expressing a positive view of human nature); aggressive (concerned about being successful, not bothered by giving orders, and suspicious); and detached (concerned about independence, preferred to make their own decisions, and bothered by having to take orders).[52]

As might be expected, compliance predominated among those in the social sciences and teaching; aggressiveness in business, management, and law; and detachment among artists and scientists. Highest scores in the "self-expression" complex were students opting for architecture, art, journalism, and drama; in the "people-oriented" complex were those planning to enter social work, medicine, teaching, social science, and personnel work; while the "extrinsic-reward" complex included those planning on real estate or finance, sales promotion, hotel management, law, advertising, and business.[53]

More recently a large National Opinion Research Center (NORC) study of the professional labor force used this short form.[54] In the NORC study,

> some expected but interesting differences emerged when the scores on these two classes of factors were summed for professionals with graduate degrees. Academically

> employed professionals in each of eleven fields showed higher interest than non-academics in intrinsic values and lower interest in extrinsic values for eight of the eleven fields.[55]

Another interesting finding, of importance to the current study, is that "among professionals, 'working with people' seems to have more of a leadership or manipulative connotation than an altruistic or affiliation one."[56] However, the NORC study was largely concerned with the scientific and engineering fields and the findings may not be of interest to the current study except for comparison purposes.

Further work done on Rosenberg's instrument led to a category breakdown by the three value orientations by Gurin et al.[57] This is illustrated in table 1.

The findings of Rosenberg's work suggests that

> . . . people who enter different kinds of occupations have basically different outlooks on work as a facet of life. To some, work is an end in itself, valued for the opportunity it gives to express oneself directly. To others, work may be only a means to obtain leisure and luxury off the job. To still others, work itself is of value, but more for the chance it provides to deal with people or be of service to them than for any intrinsic interest in the tasks or skills of work.[58]

Other work on occupational values has been done by Simpson and Simpson. This work involved three broad occupational groups--business, scientific and esthetic, and general cultural occupations. The findings on the general cultural group have implications for much of the library field. Among teachers, professors, ministers, and lawyers, involvement and direct contact with people to whom services

TABLE 1

CODE CATEGORIES FOR RESPONSES TO QUESTIONS CONCERNING WORK VALUES

	Self-Expression	People-Oriented	Reward-Oriented
EXTRINSIC			
Economic			Stable, secure future
Social standing			Chance to earn a great deal of money
INTRINSIC			
Achievement-related	Opportunity to use special abilities/ aptitudes	Sense of accomplishment by contributing to society	Social status or prestige
	Commitment to a profession		
Independence	Permit me to be creative-original		
Influence-related		Chance to exercise leadership	
Affiliation-related		Opportunity to be helpful to others	
		Opportunity to work with people rather than things	

are provided is the usual situation. One might expect, therefore, that people entering these fields would greatly value the contribution their work makes to society or to other people. This idea was supported in the study as general cultural respondents were the most likely to rank "opportunity to be helpful to others" or "make a contribution to society" among their top three occupational values.[59] The authors summarized their research by saying:

> Generalized values of the kind which this research has studied in connection with occupational choice can weaken or prevent strong identification with work as a value. . . . But such values are so general that they can be satisfied in many different occupations . . . the personal relationships someone has within his work setting probably have more effect than the values he began with on the outlook he eventually develops toward his work.[60]

The early work of Allport and Vernon has continued. The current version of Allport-Vernon-Lindzey's A Study of Values,[61] though designed to tap general values, has been utilized in several studies of occupational groups. It was used by Douglass, Denis, Reeling, Finks, and Fortin to study groups of librarians. This instrument ascertains relative preferences for six different kinds of ideas and activities: theoretical, economic, aesthetic, social, political, and religious. Though used more often to type college students according to their dominant interests, this instrument is appropriate for differentiating between occupational groups, but probably not within such groups.

Summary

To establish the conceptual background for the current study, literature of the following areas was searched: the sociology of the professions, librarianship as a profession, and sociological and psychological views of the concept of values. Service orientation as an integral characteristic of a profession was discussed in relationship to the process of professionalization. Most of the work in this area had assumed that the professional model is the best model for aspiring occupations. More recently, this assumption has been challenged. The current study did not make such an assumption; in fact, each of the ideal types including the Traditional-Professional Type will be tested as a possible definition of service as perceived by those in the field.

The literature revealed that librarianship has been evaluated in light of the professional model--philosophically but not empirically--by Goode, Wasserman and Bundy, and Edwards among others. Each of these writers has concluded that librarianship does not fulfill enough of the requirements to qualify as a profession. More recently, Hanks and Schmidt have raised the question of the appropriateness of the traditional-professional model for the field. They proposed an alternative for the library and information field--the open-systems model--which they present as one that could be responsive to the changing nature of the field. Their model was also tested as an ideal type.

The concept that a professional culture includes an organization, a set of standards, and a code of ethics has been reviewed. In this review, the American Library Association has been criticized in its role as a professional association, and for its failure to endorse a strong code of ethics which would set standards for the field. The lack of inclusion of the concept of service orientation in the newest code of ethics developed by the association is a case in point.

An initial step in the current study, but a secondary one in terms of purpose, was the assessment of the importance of service orientation as a work value.

CHAPTER II: NOTES

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[53]Robinson et al., Measures of Occupational Attitudes and Occupational Characteristics, p. 63.

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CHAPTER III

REVIEW OF THE LITERATURE

The current investigation is only one small aspect of a concern of the sociology of occupations. The specific concept of service--the focus of the current study, though recognized by the student in the sociology of occupations--is only a part of the process of professionalization. The previous chapter has attempted to conceptualize the problem area. This chapter examines research relevant to the current study in the areas of personality characteristics, interests, attitudes, and values of librarians; librarianship as a profession; and the concept of service.

About Librarians

Studies of librarians and those selecting librarianship as a career seem to be minimal. Although some of the studies to be briefly noted in this section are not directly related to the current study, it is important to be aware of their general findings. Several studies have centered on personality traits of specific groups of librarians and library school students.[1] Table 2 briefly summarizes the procedures and findings of these studies. Generally, these studies show librarians in rather an unfavorable light; as

TABLE 2

SUMMARY OF STUDIES ABOUT PERSONALITY TRAITS
OF LIBRARIANS AND LIBRARY SCHOOL STUDENTS

Researcher	Year	Group Studied	Variables	Method	Findings
Bryan	1952	Public librarians (N = 1,700)	Interests, values, personality	Standardized personality test	"Personality Profile" includes: 1. submissive 2. lack of leadership 3. lack of confidence 4. "bookish" by nature 5. reasonably well-adjusted
Douglass	1954	Library school students (N = 545)	Personality traits	Questionnaire, personality inventories (Allport, Minnesota Multiphasic Personality Inventory)	"Average" librarians: 1. orderly 2. meticulous and neat 3. conscientious 4. conservative 5. conforming 6. apathetic and passive
Morrison	1958	Academic librarians (N = 707)	Personality traits	Self-descriptive inventory	Characteristics similar to middle managers and salaried professionals: 1. highly intelligent 2. self-assured 3. many lack initiative
Clayton	1968	Library school students (N = 150)	Personality traits	Standardized personality test (California Psychological Inventory)	Few "outstanding" characteristics: 1. high on feminity scale 2. not strongly inclined toward innovation or experimentation

submissive, lacking confidence, as conservative and conforming, as lacking initiative and leadership traits. Morrison, for example, found many existing challenges in the professional role for librarianship, but a lack of people willing to respond to those challenges. Most of these studies indicate that traits are "feminine" whether the respondent is male or female, though it is widely accepted that the profession is largely a female-dominated profession.

A second group of studies focus on attitudes, interests, and values of librarians.[2] A summary of these studies can be found in table 3. Librarians are shown as being nonauthoritarian, not inclined toward innovation and experimentation, more "aesthetic" and "theoretical" than "political" or "economic" in their value structures. Generally, they are basically satisfied with the library field, more "intrinsic" than "extrinsic" reward-oriented, and score low on the need for autonomy. Most of these studies used standardized tests, especially the Allport-Vernon Study of Values.

About Professionalism

Though there are many research studies of the status of a particular occupation in terms of professionalism, such as the collection recently edited by Freidson,[3] it was decided to delete these as being too specialized to be directly related to problems within librarianship.

TABLE 3

SUMMARY OF STUDIES ABOUT ATTITUDES AND VALUES OF LIBRARIANS

Researcher	Year	Group Studied	Variables	Method	Findings
Thornton	1959	Practi-tioners (N = 113)	Attitudes toward librarianship		Academic librarians have less "favorable" attitudes than other groups of librarians
Ryan	1967	Active members of two national library groups (N = 320)	Satisfaction with library field; demo-graphic variables	Question-naire	Librarians are: 1. satisfied with the field 2. large number of people with intrinsic-reward orientation 3. affinity for books and learning
Denis	1969	Academic and public librarians (N = 648)	Personality, types of libraries	Standardized tests, inventories (Allport)	No major differences in two groups, all scored high on "aesthetic" and "theoretical" scales of Allport
Reeling	1969	Potential library recruits (N = 650)	Intelligence, personality, values, demographic variables	Question-naire, stan-dardized instruments (Allport) (EPPS)[a] (SAT)[b]	Profile of recruit indicates: 1. high intellectual aptitude 2. enjoys aesthetic values (likes to read) 3. frequent user of libraries 4. is orderly 5. lack of leadership 6. low on needs for autonomy and political values 7. career-oriented 8. low on economic values

TABLE 3--Continued

Researcher	Year	Group Studied	Variables	Method	Findings
Busha	1970	Library school students (N = 96)	Authoritarian personality, attitude toward censorship	Likert-type scales	Only a small percentage had high authoritarianism score
Finks	1973	Library school students (N = 204)	Attitude toward aspects of the field, e.g., service	Likert-type scales	Student attitudes toward these aspects were not greatly changed by library education

[a]Edwards Personal Preference Schedule.

[b]College Entrance Examination Board Scholastic Aptitude Test.

Most of the research efforts have been concerned with what differentiates professional occupations from non-professional occupations. Ritzer, in the previously cited work, raised an equally important question--"What differentiates professional individuals from non-professional individuals?"[4] His contention is that in the study of professionalism, there are two continua; an occupational continuum and an individual continuum. Though recognizing the relationship between the occupational and individual levels of professionalism which Ritzer speaks of as the ". . . relationship between social structure (in this case the structure of an occupation) and individual attitudes and behavior,"[5] he focused on the individual level which has been ignored up to this point. He has translated six accepted structural characteristics of a profession into individual characteristics (attitudinal and experiential characteristics) including:

1. General, systematic knowledge
2. Authority over clients
3. Community rather than self-interest which is related to an emphasis on symbolic rather than monetary rewards
4. Membership in occupational associations, training in occupational schools, and existence of a sponsor
5. Recognition by the public that he is a professional
6. Involvement in the occupational culture[6]

Ritzer stressed the importance that when

> . . . using these dimensions empirically, the researcher must be careful to use all six and not just one or two [and that] . . . what is needed is a composite score of individual professionalism based on the operationalization of each of the six dimensions.[7]

In comparing occupational and individual levels of

professionalism, it is necessary to examine cases of discrepancies and cases of congruencies. These would depend on three factors: individual (intelligence, personality--especially need-achievement, and degree of involvement in the occupational culture); organizational (structure of the organization--degree of supervision, allowing behavior in accord with occupational norms rather than organizational norms); and occupational (how professional is the occupation?).

Ritzer's concern is with professional socialization (skills, knowledge, norms, and values needed for an individual to be considered a professional) in contrast to the professionalization of the occupation. He contends that in failure to socialize its new members, the professional standing of the occupation will be jeopardized. His differentiation of the two levels of professionalism serves ". . . to clarify some theoretical issues in the sociology of occupations."[8] This is an important clarification which relates to the current study; an examination of the service orientation of the individual librarian rather than the service-oriented policies of an organization, i.e., a library.

Studies which have looked at the library field as a profession will be examined in more detail. Dale Shaffer[9] tried to test the maturity of librarianship as a profession. His work, originally a master's thesis at Kent State, looked at librarianship within the traditional-

professional model framework. Nitecki has incisively attacked the narrow focus of the work

> . . . [as] the fallacy of misplaced emphasis. Professional status is not something good in itself; an effort to develop "a standardized, universally accepted list of professional criteria to measure the true professional status" is still a myth.[10]

As Nitecki pointed out, the goal of the field is not to "become a profession" but rather to "serve the reader" and if, in that process, certain criteria of professionalism are accomplished in the effort to reach the true goal, that is acceptable.

Commitment to the field is an aspect of professionalism. In a study by Grimm[11] the long-term commitment of many college and university librarians is presented as evidence of a "service orientation" which enhances professionalization. However, in his opinion, this favorable influence is offset by the married women in the field who have interrupted careers and who receive fewer professional rewards and opportunities. Grimm also points out that the bureaucratized work setting of librarians negates a long-term interest in the process.

Stone's study attempted to identify the factors that motivate librarians in their professional development. She examined the possible relationships between certain background characteristics such as age, sex, marital status, education, place of employment, and certain employment characteristics; and motivational variables for professional development, such as attitudes of relevant groups

(library school faculty, supervisors, and governing boards). She assumed that qualification "as a professional" is satisfied by: meeting the standards established by the profession (education, skills, and knowledge), as well as additional criteria including social understanding, ethical or altruistic behavior, and scholarly concern. Based on this assumption, she developed a professional index which

> . . . identified each librarian's personal attitude toward his occupational attributes, knowledge, characteristics, and responsibilities. It also measured the degree of participation in professional development activities.[12]

She used the work of Raymond Ranta who had developed a list of twelve criteria which delineated individuals within a profession as those who:

1. Place service to others higher in importance than personal gains.
2. Have a strong sense of public responsibility.
3. Are particularly skillful and proficient in their work.
4. Are especially dedicated to their job and for what it stands.
5. Work in settings where they must basically direct their own programs of work independently; in a sense, practicing autonomy in decision-making.
6. Try to continually improve themselves, and have a never ceasing quest for learning.
7. Are concerned about, and work toward, the improvement of their colleague's welfare.
8. Work within acceptable ethical standards.
9. Have a knowledge of and familiarity with professional literature in their field.
10. Change methods of job procedures when new information based on research is received.

11. Believe in the interchange of information.

12. Utilize and understand the specific language employed in their field of work.[13]

Stone also added a qualification established by the National Education Association for a professional in any field--as being an individual who

> actively participate[s] with his colleagues in developing and enforcing standards fundamental to continuous improvement of his profession and [who always] bide[s] by those standards in his own practice.[14]

One conclusion of the Stone study was

> . . . that the degree of professional improvement motivation was greater for the librarians who had a higher Professional Index Score, who had become head or assistant head of their libraries, and who perceived the attitudes of their administration or supervisor as being favorable toward their development activities.[15]

There is much agreement between the twelve criteria of Stone's Professional Index and the six individual characteristics posited by Ritzer; in addition, they both included several aspects of service of the Traditional-Professional Type.

About Service Orientation

Related Studies

Little empirical evidence exists on the service ideal as it pertains to particular occupational groups. In several of the previously discussed studies about librarians--those of Douglass, Reeling, Finks, and Denis--the Allport-Vernon-Lindzey Study of Values Instrument[16] was used. These studies assumed that one of the scales of the Study of Values, the social scale, was related to

the service ideal. However, Finks found that the service scale that he developed did not correspond with the social scale of the Allport instrument, indicating that the above assumption needs to be tested before other studies continue to use this instrument for the same purpose. Finks, though more concerned about developing an instrument for measuring attitudes, did try to measure the attitude toward service. Among several other attitudes on aspects of the field, he found service scores the highest.

In the study by Denis, one of the hypotheses is related to the key concept of the current study, service orientation. He hypothesized that

> librarians who choose to begin their professional careers in a public library are more likely to be "service oriented" than are librarians who choose to begin their professional careers in an academic library.[17]

He also measured service orientation by the social scale of the Allport instrument, concluding that male academic and public librarians show values high on this scale along with an aesthetic scale, while ranking low on economic and political scales. The female academic librarians, however, scored low on the social scale along with the economic scale, but high on the aesthetic and theoretical scales. The female public librarians also scored high on the aesthetic and theoretical scales, about average on the social and political value scales, and lowest on the economic and religious scales. No operational definition of service is found in any of these studies, and the social

scale of the Allport instrument has not been validated as a measure of librarians' service orientation.

Fortin[18] found that librarians with more training were better satisfied with the service aspects of school librarianship. Again using the Allport instrument to measure service, Fortin concluded that a scale of satisfaction for administrative and service aspects was needed. He had assumed in his study that librarianship is basically a service profession.

In the studies discussed above, researchers using the terms service ideal or service orientation have not sufficiently defined the terms, but have rather assumed that the definition is clear to the profession and that the existing social scale of the Allport instrument adequately measures the concept. Given these conditions, neither assumption was made in the current study. The review of the literature has confirmed the nebulous nature of the concept in conceptualization and has indicated the weaknesses of the currently used service measurement instruments.

It is difficult to distinguish between the service orientation of the librarian--the focus of the current investigation--and the general orientation of the service policies of the libraries. The problem resembles that addressed by Ritzer in his discussion of the difference between the professionalization of the individual and of the occupation. One study, by Robbins,[19] does report on

the services of libraries. In her study of citizen participation in public libraries, she differentiated between a materials-oriented service, i.e., traditional library service and an information-oriented service. The information was obtained from her respondents through four open-ended "services" questions and one question which asked for a ranking of nine (or more) "service goal priorities." On the basis of these results, Robbins concluded that ". . . these libraries tend to be rather firmly set in their orientation toward traditional library service." She did not find a relationship between active citizen participation and information-oriented service policies (a major focus of her study) though she had assumed that ". . . a new source of input into the decision-making process, citizen participation, might well be expected to alter outputs."[20]

The responses to Robbins' question on "what kinds of library services had been suggested by citizen groups which the respondent librarian felt the library should not offer?" included:

Type of Service	Frequency
Discussion groups	1
Local history collection	1
Referral services	3
New branch library	5
Additional deposit stations	2
Shut-in service	3
Additional audio-visual materials	5
Extended hours	6
Special collections, e.g., musical scores, dress patterns, puzzles	4[21]

The sparcity of responses to this question seemed to

indicate a lack of demands by citizens for more than traditional services--and not too much demand for even traditional services in most cases.

Central Studies

Three studies directly involved the concept of service orientation as the central focus.[22] King surveyed the attitudes of library school students toward reference librarians and reference service. She used a personal background questionnaire and an attitude survey to collect data which she submitted to factor analysis; the analysis resulted in a five factor solution including the factors of status, sex role, job content, job commitment, and personality. These factors influenced attitudes toward the reference librarians and library information service. King concluded that

> the factors or components of the attitude found in this study seem to fit the characteristics of the female semi-professional rather than [support] the more general [job satisfaction], motivation-hygiene theory [of Herzberg].[23]

She theorized that the components of the attitude being measured would conform to Herzberg's theory of job satisfaction.[24] Her "job content" factor implied a professional job which would require certain skills, knowledge, and independence of action; while the professional "job commitment" factor implied a greater emphasis on client-information interface rather than a commitment to library administration. The "job commitment" factor seemed most directly

related to a service orientation. The most significant differences in scores were found for the factors of sex role, followed by (in descending order of importance) status, outgoing personality, job content, and job commitment. This indicated that the job commitment factor did not show "significant differences" in scores among the respondents--indicating some degree of consensus on this item.

Utilizing a conceptual, sociological theory of professions, Scheide investigated professional perceptions of academic librarians and library school students. Through a questionnaire, he surveyed the perceptions of the respondents about the three core traits of professionalism: Body of Knowledge, Service Orientation, and Autonomy. He found that the respondents as a whole ranked the Service Orientation characteristic (as postulated in the study) most evident in practice, and the Body of Knowledge least evident. However, the student sample, when considered as a separate group, placed Body of Knowledge above Service Orientation as most evident. Scheide tried to ascertain whether students view professionalism differently from experienced academic library practitioners. Among the demographic variables which influenced viewpoints toward professional characteristics, professional association activities proved to be the best identifiers of differences in attitude toward both Body of Knowledge and Service Orientation, though not of Autonomy. He concluded, ". . . Practitioners

involved with associations differed strongly about these professional matters."[25]

Within the practitioner group, Scheide found that as the age level rose, these librarians increasingly accepted the major professional characteristics. Prior work experience did influence attitudes of acceptance toward professionalism, also. Those who had prior experience only in a library setting or with no experience presented the least acceptance of the professional concepts.

In the Scheide study, practitioners and students agreed on three items of service orientation which they thought desirable:

1. To gain acceptance as professionals each librarian as an individual should:
   . . . show his concern for competence in library work by helping to set educational standards for librarianship.

2. . . . accept responsibility for getting appropriate custodial care for library materials entrusted to him.

3. Also, to gain acceptance as professionals, librarians as a group should:
   . . . regulate practices of individual librarians with a code of ethics formulated by a majority of the librarians themselves.[26]

The respondents also agreed that when a librarian's own interests conflict with service to patrons, most librarians no longer feel that service to the patron must come first.[27] Items which received differences in responses from the two groups included: the desire to serve society is reflected by those professional librarians who accept relatively low salaries to stay in library work, and the librarians'

willingness to continue in long library careers is an indicator of service.[28]

Scheide suggested that based on the conclusions of his study, further work on the service orientation is necessary; that a statement of the service librarians willingly support and uphold as compared with the service orientation proposed by students of occupations needs to be investigated. A view of the clients' definition of service is suggested as a related investigation. He also suggested further investigation to ascertain librarians' psychological attitudes toward knowledge and community services as values.

The only study exclusively concerned with service orientation was done by Adair. He compared the Librarian Scale of the Adjective Check List (a standardized personality test)[29] and the Librarian Scale of the California Personality Inventory (CPI)[30] in terms of discrimination between the "service-oriented" and "non-service-oriented" library school students. The Scale of the Adjective Check List failed to discriminate, but the CPI scale was successful in such discrimination. Adair concluded that, with further validation, this scale should be successful in distinguishing between the two types of librarians. His recommendation was that the Librarian Scale for the CPI be used, along with other criteria, as an aid in selecting students for library schools as well as the placement of graduates in positions in the field.

The most helpful part of Adair's study for the current investigation is his process of defining service orientation. In identifying criterion groups of librarians who exhibited a high degree of service orientation, Adair used the following definition:

> A person who fits this category would be actively interested in people and their research projects, be imaginative and persistent, be able to communicate with the user in an effective way, and be willing to gear the library's services to the needs of the patron. He should be capable of seeing the library as a totality rather than as merely a collection of particular departments such as acquisitions, cataloging, circulation, or reference . . . be the person whom you would most want to employ.[31]

A person identified as a leader in the field who Adair thought highly of as a service-oriented librarian, Doralyn Hickey, secured the help of sixty-seven practicing librarians who in responding to the Adjective Check List gave pictures of both service-oriented librarians and nonservice-oriented librarians.

> Service-Oriented Librarian. A librarian who, in viewing his profession, sees beyond the day to day functions of his assignment and discerns good for the many rather than for the few, would tend to be active, energetic, enthusiastic, imaginative, and confident. In his own particular position, he would be alert, efficient, capable, dependable, industrious, practical, thorough, and enterprising. As he deals with fellow workers and the public at large, he would be calm, cheerful, helpful, kind, tactful, warm, pleasant, considerate, cooperative, sincere, understanding, outgoing, and sympathetic. In general this person could be described as conscientious, patient, reasonable, organized, stable, healthy, and attractive.
>
> Non-Service-Oriented Librarian. Upon examination of the category "non-service-oriented" it was discovered that two dimensions rather than one were included: more specifically, an aggressive dimension and a submissive dimension. Some adjectives, however, seemed to be applicable to both types. When describing the

> aggressive dimension, the person was found to be sarcastic, unkind, impatient, nagging, obnoxious, argumentative, intolerant, opinionated, bossy, and arrogant. On the other hand, a submissive person was likely to be irresponsible, careless, lazy, aloof, apathetic, indifferent, forgetful, and dull. Adjectives, typically used with both dimensions were resentful, self-centered, complaining, immature, moody, unfriendly, [with] interests--narrow, and rigid.[32]

Adair found that in forming these definitions, that service orientation seemed to cluster around the following three dimensions:

1. The librarian's view of his profession which included such adjectives as "active" and "enthusiastic."
2. The librarian's view of his position which included such adjectives as "alert," "industrious," and "efficient."
3. The librarian's view of his fellow workers and the public which included such adjectives as "cheerful," "helpful," "kind," "tactful," and "warm."[33]

Adair treats service orientation as a profile of personality traits. His definition of the concept came from the responses of sixty-seven practicing librarians predominantly from academic library backgrounds. There is no assurance that this group represents practicing librarians nor that the group was truly a criterion group.

Summary

In the current chapter, research has been examined in the areas of: the individual characteristics of librarians (personality traits, interests, attitudes, and values); the evaluation of librarianship as a profession; and the concept of service.

Generally, the studies about librarians show a profile of librarians including the following traits: submissiveness, a lack of confidence, being conservative, conforming, a lack of initiative, a lack of leadership traits, and a classification of "feminine." Attitudinally, the studies have shown librarians to be: nonauthoritarian, noninnovative, more "aesthetic" and "theoretical" than "political" or "economic" in terms of value structures, and more "intrinsic" than "extrinsic" in terms of rewards. Many of the studies reviewed made use of standardized tests, especially the Allport-Vernon Study of Values.

The studies which concerned librarianship and professionalism focused on particular aspects such as job commitment, commitment to the field, and professional development, in contrast to studies of professionalism in other fields which seem to emphasize the whole process of professionalism. Both the librarian group of studies and another group, which deals more directly with the concept of service orientation, disregard meaningful operational definitions of service which would be useful to other investigators. This makes comparison among studies difficult. The service orientation studies seem to raise more questions than they answer, and some are methodologically questionable.

The review of these areas points to the need for the current investigation. Service orientation has not been defined sufficiently for adequate measurement; for

this reason, this study will attempt operationally to define service for the library field.

The current investigation is quite different from the Adair study in purposively eliciting a definition of service orientation from three subsets of the library profession. Comparing their perceptions on service orientation gleaned from their reactions to a broad set of items representing beliefs and behaviors about service should result in a definition of service representing the diverse groups within the field. It is equally important in the current study to test particular types of service espoused in the literature. These three ideal types of service were explained in chapter I. The idea of beginning with a set definition of service, as Adair had done, was initially rejected for the current study, due to the ambiguity and lack of agreement on the concept existing in the literature of the field. Previous research studies except for the one by Adair made an assumption about the definition in terms of specific measuring instruments; this also was rejected. The conceptualization of service orientation is the main focus of the current study. The specific belief and behavior statements used in the study should be easier for respondents to contend with in a more realistic way, as well as to avoid possible bias in transparently "good" and "bad" terms or adjectives. In being forced to choose between items (by the ranking process), respondents will be assessing service in a more "real life" process.

The current study will attempt to study several of the areas that Scheide has outlined, especially the comparison of the definition of service of librarians with that of the "ideal service orientation" of the professions (traditional-professional model).

CHAPTER III: NOTES

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CHAPTER IV

DESIGN OF THE STUDY

Objectives of the Study

This investigation had two major and related objectives: (1) to explore the concept of service orientation and (2) to develop a methodology for measuring the concept. The first objective was accomplished within the theoretical framework of the sociology of professions as delineated in chapter II. Three ideal types of service orientation had been identified: Traditional-Professional Type, the Semi-professional Type, and the Open-Systems Type. These three types were tested with sample groups that included: library school students, practitioners in the field, and leaders of the major library professional association--the American Library Association. The responses of these groups were examined for the type of service orientation and for the degree of consensus within the group as well as between the three groups.

Questions to Be Tested

In an exploratory and methodological study, formal hypotheses are not necessary nor often even possible; however, in the following section, questions are raised which

have guided the development of the study.

1. What is the meaning of the concept, service orientation, within the framework of the library and information services field?

Is service orientation viewed differently by library school students, practitioners, and by leaders in the profession, or is there consensus among the groups?

2. Are there elements of service orientation which are delineated by the consensual items, which form a definition of the concept?

3. Is service orientation considered an important concept on a scale of work values within the sample groups tested?

4. Are there major differences (intergroup and intragroup) among the sample groups in relationship to sex, age, marital status, library experience, specialization, and professional involvement? Do these variables seem to be related to the type or degree of service orientation?

Variables

The current study has been involved in the measurement of the construct, service orientation. An assessment of the perceptions of the three library groups clarified the meaning of the concept. Though the study was primarily concerned with this construct which served as the dependent variable, certain other variables were also examined to explore possible relationships. These independent

variables, which might affect a particular respondent's reactions on the construct, include: the demographic variables of age, sex, marital status, library experience (both years of experience and experience type), and current position; and the attitudinal variables of professional involvement, specialization, and type of library. In addition, the work values of each of the sample groups were assessed, in order to ascertain the importance of service as a work value.

Population and Sampling

The population being investigated was the membership of the library and information services field. Three subgroups of the field's membership comprised the samples: library school students, library practitioners, and library leaders. The samples were purposively rather than randomly selected from the population as appropriate to the problem. The library school students were students at Rutgers Graduate School of Library Service entering during the Fall of 1974 (N = 99). The practitioner group was randomly selected from a list of all Rutgers graduates of the years 1970 (N = 169), 1971 (N = 167), and 1972 (N = 160). Experience ranged from two years to four years for this group which was considered the beginning practitioner. From this total group of 496 graduates, a random sample of one hundred graduates was chosen (through the use of a computer program for random numbers), with the resulting

sample sizes for each graduating class: 36 (1970), 31 (1971), 33 (1972). Approximately 25 percent of the Rutgers Library School classes during those years were students interested in school librarianship. To check on the representativeness of the chosen sample to the particular Library School classes of those years, the number of school librarians (students selecting this specialization) was ascertained. The number of school librarians was twenty-four out of the one hundred (24 percent) in that category, a match with the "real" proportion. Computer lists of addresses were available from alumni records on these former students.

The library profession's leaders were chosen from two sources: officers of the American Library Association (presidents of ALA) of the last five years, all divisional presidents for the same five-year period, and from those receiving awards from the American Library Association during the last five years. The awards were essentially service awards or awards for "contribution to the field" (within different specialized areas such as reference, cataloging and classification, and service to youth). Awards included and the purpose of each award are listed in appendix C. The list of ALA divisions is included in appendix D. Questions could be raised about the suitability of choosing leaders of the field from only the ALA. The main justification for this is that it is the largest and most all-inclusive organization of the field. Officers

of the divisions and award winners do represent people who are also active in other organizations. For example, those in Information Science and Automation Division (ISAD) are often also members of the American Society for Information Science (ASIS); those in the American Association of School Librarians Division (AASL), members of the Association for Educational Communications and Technology (AECT); and members of both the Reference and Adult Services Division (RASD) and Resources and Technical Services Division (RTSD) also members of the Special Libraries Association. Because of the divisional structure of the ALA, it is also possible to insure the inclusion of most of the major practitioner groups within the field such as information scientists; school, public, and academic librarians; library educators; library administrators, people working within state libraries, etc. The approximately equal representation of these groups seemed more important for this study than the actual number of each of the groups in the real population. It is fully recognized that generalizability of the data from these samples to the general population of the library field is limited. However, the exploratory nature of the study in beginning to define and measure a construct allows this sampling approach.

Research Techniques and Instrumentation

Initial Pretest

During the week of April 21-25, 1975, a pretest of an initial questionnaire instrument designed to assess the

concept of service orientation was administered. The pretest group included: 19 faculty (7 responding), 12 doctoral students (8 responding), and 6 M.L.S. students (2 responding) at the Graduate School of Library Service at Rutgers--The State University; plus 3 practitioners in nearby academic libraries (2 responding). The questionnaire was an eighty-five item, Likert-like instrument with a scale of seven choices (one to seven) ranging from positive to negative. The respondents were asked to respond to the items in terms of the question--what concept of service do you think should motivate the librarians and information workers of this generation? The results of the pretest served a very useful purpose--it clearly indicated that the instrument was unacceptable for the current study. Criticisms from respondents included: a general reaction to the questionnaire technique itself--what, another questionnaire? to specific comments such as "the items are ambiguous," "those items are redundant," "they are apparent," and "how is this related to service orientation?" Response sets were obvious with most loadings on the more positive poles. The instrument did not allow, or more importantly, force, respondents to rank items of importance. The length of the instrument (a total of eighty-five items) was also found objectionable. The emotional reactions to the instrument revealed that the concept of service orientation is "somewhat like motherhood"--everyone feels they know what it is and is not--

even though the respondents generally do not agree with each other. Though everyone agreed that service orientation is "good," it was also shown to be a nebulous, all-encompassing concept.

From a preliminary data analysis effort and further discussion of the instrument, it became apparent that an instrument was needed that would force respondents to rank items in terms of priorities.

Selection and Formation of Items

The current study involved the collection of a pool of items concerning the concept of service orientation. These items were selected from several sources:

1. The literature about service orientation as a characteristic of the professions from the writings of the sociologist William Goode.[1]

2. The literature about service orientation as a characteristic of the semiprofessions from the sociologists Amitai Etzioni and Richard and Ida Simpson.[2]

3. The writings about characteristics of the library field as it relates to the process of professionalism by William Goode, Paul Wasserman and Mary Lee Bundy, L. C. DeWeese, Gardner Hanks and C. James Schmidt, and others.[3]

4. The opinions, comments, and reactions of Rutgers Library School faculty, doctoral students, and master students, as well as their responses to several pretests of the items.

Three working definitions or ideal types of service orientation were presented in chapter I: the Traditional-Professional Type, the Semiprofessional Type, and the Open-Systems Type. From each of these definitions, particular statements concerning beliefs and behaviors of service orientation were formed. The fifty-four statements categorized under each of the three ideal types and the fourth untyped category are listed in appendix F.

Q-Methodology

A technique known as the Q-sorts seemed uniquely suited to the purposes and needs of the current investigation. The technique would allow the ranking of all of the items finally selected for inclusion. An analysis of the Q-sort data by factor analysis would parsimoniously present the results by illuminating any patterns evident in the sorts of the respondents. It is possible to build into a Q-sort, i.e., structure the sort, the theoretical definitions posited as ideal types allowing the investigation to determine the match between these ideal types and the factor types formed by the empirical data.

The Q-sorts technique has been widely used in research in psychology and communication. Q-methodology is a general name used by William Stephenson[4] to express a group of psychometric and statistical procedures he developed. Q-technique is a set of procedures used in the implementation of Q-methodology involving:

> . . . particularly the sorting of decks of cards called Q-sorts and the correlations among the responses of different individuals to the Q-sorts . . . a sophisticated form of rank-ordering objects and then assigning numerals to subsets of the objects for statistical purposes.[5]

Though appendix H will present a more detailed overview of Q-methodology, important aspects will also be presented as the procedures used in the current study are discussed.

In the current study, the set of objects to be ranked (the Q-sorting) are the written statements developed from the definitions of the ideal types. The statements and the directions which form the Q-sort are found in appendix E. According to Kerlinger, "sorting instructions and the objects sorted vary with the purposes of the research."[6] Respondents in the current study reacted to a hypothetical situation presented in the directions by ranking the belief and behavioral statements describing the "service-oriented" person most desired for the particular job description given.

> For statistical stability and reliability, the number of cards in a Q distribution should probably be not less than 60 (40 or 50 in some rare cases) nor more than 140, in most cases no more than 100.[7]

The set of items is always sorted according to some criterion. For this study, a set of fifty-four items was finally selected from a much larger pool of items, by the results of several pretests of the items. Though the Q distribution is a matter of choice, the normal or quasi-normal forced distribution as used in this study provides more statistical advantages. Many of the more sophisticated

statistical procedures and all parametric statistics are based on the assumption of a normal distribution. The forced distribution in this case forces the normal distribution, making all the means and standard deviations the same.

Q-sort pretest

A pretest of an initial Q-sorts instrument was administered on April 29, 1975, to a research methodology class at Rutgers. Seventeen students including M.L.S. students, sixth-year students, and continuing education students (with library experience) participated in the pretest. A discussion of the technique, reactions and comments on the instruments, and a visual (but not complete) analysis of the data formed the basis of a revision of the instrument. Students were observed during the experience in terms of problems with directions, space and time allotments, and any general frustrations as well as lack of interest in the process. The hypothetical situation presented to the respondents as the background for their responses was revised due to some confusion on the part of the respondents. There was some misunderstanding between the object of the service orientation--the library or the librarian. The revision of the situation reflected that the object was the librarian.

Changes in the instrument included: elimination of six of the initial sixty statements, making a new group of

fifty-four statements; cutting two categories of the eleven original sorting categories, making a new set of nine categories; rewording several statements where confusion or ambiguity was indicated by the respondents; and revision of the directions for further clarity and to resolve technical problems. A copy of the Q-Sort Service Instrument developed for the current investigation can be found in appendix E.

Following this pretest, an analysis of the data using the QUANAL computer program for Q-data was undertaken, in order to become familiar with the program and to work out any problems with it in terms of the particular data collected. The factor analysis of the pretest data indicated a one factor solution, with a high degree of consensus on service orientation on the part of the student respondents. The results "made sense" in terms of the homogeneity expected of a group of library science students taking a research course. In such a one factor solution, the program terminates in terms of not giving any further information such as item agreement and disagreement, and so forth.

Values Instrument

The importance of the service concept as a value of the library and information field was assessed through a Work Values Instrument. Initial consideration was given to using the Rokeach Value Survey,[8] discussed in chapter II.

This instrument was rejected since it was designed to measure general values and the current study was only concerned with values connected with work. A more acceptable values instrument was found in a survey of measures of occupational attitudes,[9] the Rosenberg Occupational Values Instrument, also briefly discussed in chapter II.

Pretest of the work values instrument

A pretest of two variant forms of the Rosenberg Instrument[10] took place during the week of April 21-25, 1975. The two instruments were given to groups including: 19 faculty members, 12 Ph.D. students, and 6 M.L.S. students of the Graduate School of Library Service at Rutgers University, as well as 3 practitioners from an academic library setting, and 2 practitioners from a public library setting. Returns were received from 7 faculty, 8 Ph.D. students, 2 M.L.S. students, as well as 2 practitioners.

After completion of the two instruments, respondents were also asked to comment on the instrument with which they felt most comfortable. It was clear from these results which Rosenberg instrument was preferred, better served the purpose in terms of the specific items, and was the simpler of the two to complete--an important factor in terms of the complexity and time frame of the other instrument being administered, the Q-Sorts Instrument.

However, on the basis of the pretest, it was decided to drop two of Rosenberg's items: "provide me with

adventure" and "leave me relatively free of supervision by others"; and add two items: "a sense of accomplishment by contributing to society" (from Rokeach's Value Survey) and "commitment to a profession" which seemed important to this study. It was expected that those respondents placing either of these last two items high in terms of importance would be more altruistic and career involved. Both the first of these two items as well as one included from Rosenberg's original items--"an opportunity to be helpful to others"--would seem to indicate the service orientation value. A copy of the Work Values Instrument used in the current investigation can be found in appendix E.

Data Analysis Plan

There were three different sets of data collected in this particular study: data collected with the Q-sorts, Service Orientation Instrument; the demographic and attitudinal data from the Background Sheet; and the data on values from the Work Values Instrument. Each set of data was analyzed separately and with different statistical procedures; these will be described in detail in the following section.

Q-Sorts Data

Q-methodology includes a particular factor analysis procedure. According to Rummel, factor analysis

> can be applied in order to explore a content area, structure a domain, map unknown concepts, classify or reduce data, illuminate casual nexuses, screen or

> transform data, define relationships, test hypotheses, formulate theories, control variables, or make inferences.[11]

These are overlapping usages which can be related to aspects of scientific method: induction and deduction; description and inference; causation, explanation, and classification; and theory. Primarily, the current research is involved with classification and description. Factor analysis is being used as a tool for developing an empirical typology of service orientation. Patterns of types of people result, each pattern representing the way that a group of people feels about the concept. Also, in the current study, factor analysis was used to "test theory" by the deductive approach; several dimensions (types of service orientation) have been hypothesized from the literature--a factor analysis of the data determines if the dimensions emerge. As a further test of the theoretical types, the data were factor analyzed providing a check on the match of the empirical data to the theoretical types.

A factor analysis always involves coefficients of correlation among the variables as the patterns discovered by a factor analysis consist of those variables highly intercorrelated.[12] In Q-analysis, a correlation matrix is used in which the columns are persons and the rows are statements in contrast to the R-methodology (the usual factor analysis procedure) which uses correlations between tests (or items of a test) in which the columns are items and the rows are people. The correlation of persons takes

into account the fact that an individual is ranking his preferences among a variety of alternatives. The data in the correlation matrix have been standardized by reducing the raw data in terms of the same mean and standard deviation.

> When a matrix of raw data is standardized along both the rows and columns, it is called a doubly-centered matrix. The practical necessity for using a doubly-centered matrix in performing Q factor analysis is that it converts heterogeneous R measurements for factors into a form amenable to measuring "the individual's abilities about the mean of his abilities."[13]

In Q analysis the factor scores are the important focus; these are the scores attained by a statement in a given factor dimension. In other words, which statement received the most weight compared with others for a given factor? A number of persons may be loaded on a particular factor because the pattern of response to the different statements has tended to be identical in some manner. The pattern of statement arrangement is different across the factor dimensions. The statistical task is to distinguish significantly different statement arrangements for each of the factors.

A computer program, QUANAL, was used in the current investigation for analysis of the Q-sort data. This program was developed by Van Tubergen[14] of the Mass Communication Research Bureau of the School of Journalism at the University of Iowa. QUANAL was designed primarily for use with Q studies, as an extended factoring program. Providing a single-execution method for handling all phases of

the Q analysis as developed by Stevenson, it is a multiphase program which allows data manipulation, correlation, principal components factoring, orthogonal or oblique rotation to simple structure, and a summary procedure called WRAP which in Q analysis indicates the response patterns of the different types of people to the items.

In terms of statistical procedures, the program involves the computation of Pearson product-moment correlations of each person's responses with each other person's responses, and then a factor analysis of these correlations resulting in a particular factor solution. Each factor represents a pattern of responses of the participants to the total pool of items. The specific steps involved in the factor analysis procedure using QUANAL can be found in appendix H. The three samples in this study--the student group, the practitioner group, and the leader group--which represented subsets of the field at large, were each analyzed as a group in terms of intragroup (1) similarities, differences, and consensus on the concept of service orientation, and (2) how each of the three groups fit into the three ideal types. Finally, the subsamples, thirty respondents from each group selected randomly, were analyzed by the QUANAL program as a combined group in order to ascertain (1) similarities, differences, and consensus on the concept of service orientation between the three groups (intergroup differences), and (2) how the library group as a whole fits into the three ideal-types

scheme. This composite sample was randomly selected from each group equally for a total of 90 respondents. Thirty students and 30 practitioners were selected randomly for the combined sample using a table of random numbers. The leader group remained stratified by division, presidential group, and award winners. Two members were randomly selected from each of the 12 divisions, plus 2 from the presidential group and 4 from the 7 awards groups providing the total group of 30 leaders.

Background Data

The data obtained from the Background Sheet represented the independent variables: the demographic variables of age, sex, marital status, library experience, and current library position; along with the attitudinal variables of professional involvement, specialization, and type of library. These data were analyzed by the Crosstabs subprogram of the Statistical Package for the Social Sciences (SPSS)[15] for the purpose of showing significant relationships of these independent variables with the dependent variable of service orientation. Percentage figures were reported, along with frequency distributions.

Work Values Data

The data from the Work Values Instrument were analyzed by another subprogram of SPSS, named Codebook.[16] This program provides frequency distributions, means, medians, modes, measurements of kurtosis and skewness,

standard errors, standard deviations, variances, as well as minimums, maximums, and ranges. The medians were utilized for ranking the items in composite scores, allowing a composite ranking within each of the sample groups (leaders, students, and practitioners) as well as a composite ranking of all of the three groups of each of the value items.

Testing the Theoretical Types

As a part of the process of analyzing the concept of service orientation, the data on each of the individual types of service orientation were separately submitted to a factor analysis to determine the match of the empirical data with the theoretical ideal types of service orientation (Traditional-Professional Model, Semiprofessional Model, and the Open-Systems Model). This process sometimes referred to as a confirmatory factor analytic procedure involved deriving the significant items from each of the types (those items on that series of factors that load significantly). Those items not loading significantly were deleted from that subscale (representing a particular type of service orientation). All of the untyped items, Type 4, were submitted in each of the other three factor analyses. The final step to this procedure was the submission of the remaining items (those loading significantly) to another final analysis. These final items were those that empirically formed a pattern of service orientation. Further research using these items will be needed, however, for

verification because a large number of respondents is needed to build adequately a new scale of service orientation. This was not possible within the main purpose of this particular study.

The 19 items of ideal Type 1, 11 items of ideal Type 2, and the 13 items of ideal Type 3 were submitted to the separate analyses. The 11 untyped items were included within each of the other types. The cut-off loading magnitude was arbitrarily decided to be + or - .40. In order to perform a factor analysis of these items, the previous data matrix had to be inverted from a Q-data set of variables to a R-data set of items. This was done through a computer data transformation program. The Statistical Package for the Social Science (SPSS)[17] computer program, subprogram Factor Analysis, was used for the process of building new scales as that program is set up to handle R data more easily than the QUANAL program. The program limit of 110 variables in the QUANAL program does not allow for the 203 cases which needed to be analyzed. All of the responses of the 74 students, the 69 leaders, and the 60 practitioners were included in this part of the analysis.

Assumptions and Limitations

The major assumptions of the study pertain to service orientation as a general concept in the sociology of professions, to the socialization into a profession

process, and to the professionalization process.

It is assumed for the purposes of the study that there is such a process as socialization into a profession and that students during library school and practitioners during the first few years of their practice undergo this process.

> The prolonged occupation of any role in a social system affects the individual's thinking, feeling, and behavior . . . role-playing can change . . . an organism . . . just to speak the part may change our attitudes and opinion. . . . The personal service professional may only go through the motions and repeat certain verbal formulae which he has learnt to regard as near-automatic responses as cues not only to the client but also to the professional practitioner.[18]

In other words, if the professional expresses the attitudes and values to the client, even though not really believing it fully, he will gradually come to accept those values of the professional role. For this reason, it is valuable to look at the concept of service orientation from the perspectives of students, practitioners (relatively new to the profession), and leaders (generally more experienced in the profession).

It is also assumed for the purposes of this study that service orientation is a positive ideology for the library profession. The collective value of service orientation (in Goode's terms) is a positive element within an occupation which is classified as a service, helping, or person profession. An occupation holding such a value is a more professional occupation in the sense that it shares one vital attribute or characteristic of the professions.

However, contrary to several other studies such as that of Scheide,[19] the assumption is not being made in this study that professionalization in the traditional model sense is desirable. This investigator agrees with the critics of the library profession (Wasserman and Bundy, William Goode, DeWeese, and others) that the library field needs to be improved both in its image of itself and its image to the outside world. However, the direction this change should follow is not clear-cut in terms of the current theory of professionalization.

Another assumption for this study has been clearly stated by Rosenberg:

> American occupational structure provides an opportunity for an individual to find an occupation which suits his values and needs, although it is not readily known whether this will satisfy him.[20]

It is assumed that occupational values as well as other value orientations can be measured, as Rosenberg and others have done.

It should be recognized that an exploratory and methodological study has certain limitations due to the focus of the study. The purposive rather than purely random sampling in this study precludes generalization concerning the results to the total library field population. Also, due to the lack of valid hypotheses concerning the concept of service orientation, it was not possible to begin the study with an operational definition of the concept but rather to formulate a definition based on

results of the study. Future research will be needed to further validate the particular items relating to service orientation, and a refinement of the scale will be necessary with other groups within the field.

Summary

Two major objectives have been presented as the basis of the current investigation:

1. to explore the concept of service orientation, and
2. to develop a methodology for measuring the concept.

Service orientation has been defined in several ways through the three ideal types presented: the Traditional-Professional Type, the Semiprofessional Type, the Open-Systems Type, and the untyped items forming a fourth type. Three samples of the library field population were drawn including: library school students (N = 99), practitioners in the field (N = 100), and leaders of the major professional association, the American Library Association (N = 90).

Questions guiding the course of this study have been raised; the major concern was with the type of service orientation perceived important to the groups delineated, as well as with the degree of consensus both between the three sample groups and within each sample group. Attitudinal and demographic variables were examined to form tentative hypotheses about possible relationships to

service orientation. Service orientation as a work value among several other work values was assessed with each of the respondents.

Within the general framework of Q-methodology, service orientation was measured by a Q-sorts technique and the data were analyzed by factor analysis. An adapted form of the Rosenberg Work Values Instrument was used to determine the importance of service orientation as a work value. Demographic and attitudinal data were gathered by a short questionnaire. Pretests helped to establish the appropriate instruments, and to improve the items used in the Q-sorts instrument.

A test of the ideal, theoretical types was attempted to determine the match of the empirical data with these types. This served as the initial effort in building a scale or series of scales on service orientation.

CHAPTER IV: NOTES

[1]William J. Goode, "Community within a Community: The Professions," American Sociological Review 22 (April 1957):194-200; Idem, "The Librarian," pp. 306-20; Idem, "The Theoretical Limits of Professionalization," pp. 266-313.

[2]Etzioni, The Semi-Professions and Their Organization; and Simpson and Simpson, "Women and Bureaucracy in the Semi-Professions," pp. 196-265.

[3]Goode, "The Librarian"; Bundy and Wasserman, "Professionalism Reconsidered," pp. 5-26; DeWeese, "A Paradigm of Commitment Toward Professional Identity," pp. 541-50; and Hanks and Schmidt, "An Alternative Model of a Profession for Libraries," pp. 175-87.

[4]William Stephenson, The Study of Behavior: Q Techniques and Its Methodology (Chicago: University of Chicago Press, 1953).

[5]Fred Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart, & Winston, 1964), pp. 581-99.

[6]Ibid., p. 583.

[7]Ibid.

[8]Rokeach, The Nature of Human Values, p. 359.

[9]Robinson et al., Measures of Occupational Attitudes and Occupational Characteristics.

[10]Ibid., p. 235.

[11]R. J. Rummel, "Understanding Factor Analysis," Journal of Conflict Resolution 11 (December 1967):444-80.

[12]Ibid., p. 461.

[13]William Stephenson, "The Inverted Factor Technique," British Journal of Psychology, General Section 26 (1936):346.

[14]N. Van Tubergen, "Q Analysis (QUANAL)," University of Iowa, n.d. (Mimeographed documentation.)

[15]Norman Nie et al., SPSS, Statistical Package for the Social Sciences (New York: McGraw-Hill, 1975).

[16]Nie et al., SPSS, Statistical Package for the Social Sciences.

[17]Ibid.

[18]Paul Halmos, The Personal Service Society (New York: Shocken Books, 1970), p. 153.

[19]Scheide, "A Study of Professionalism in California Academic Librarianship."

[20]Rosenberg, Occupations and Values.

PART II

DATA COLLECTION AND ANALYSES

CHAPTER V

DATA COLLECTION

The preceding chapter outlined the methods to be used in the current study including the specific instrumentation and data analysis plan. This chapter will summarize the data collection procedures. The response rate will also be examined.

Student Group

The administration of the Q-Sorts Service Orientation Instrument and the Work Values Instrument to the group of ninety-nine students was done through class distribution, during the weeks of May 12 to May 23, 1975. The material was either distributed by the instructor of the course or by the researcher. Two cover letters were included with the instruments; one from the researcher, and the other from the Dean of the Library School, encouraging the students to participate in the study. Copies of the cover letters are found in appendix G, examples 1 and 2. Due to the timing of the research at the end of the school term, students were instructed to return material to the next class session or to mail the instruments when they had had time to complete them.

The initial response rate was 31 percent, a total of twenty-seven returns. Late in May, a student follow-up was done by mail in the form of a postcard which was written by longhand. A third follow-up was done by mail or by distribution during classes for those students in summer school; this was a typed letter to each of the nonrespondents. By the end of July, an 83 percent response rate was achieved; and shortly thereafter in August, a total of seventy-four returns had been received, and an adjusted response rate of 85 percent. Some personal telephone calls had been made in the interim.

Leader Group

The packets of materials to the ninety leaders were mailed during the first two weeks of June by third class mail. A cover letter was signed by both the researcher and Professor Mary V. Gaver, a member of the committee, former faculty member at Rutgers, a well-known leader in the field, and a former ALA president (see appendix G for a copy of the cover letter). A follow-up was planned during the ALA Annual Conference during the first week of July. However, as many of these respondents would be busy participating in the preparations for the ALA conference, it was expected that the initial leader response rate would be low.

During the ALA conference, follow-up letters were put in the mail services of the various hotels of the conference. An attempt was made to personally meet many of

the respondents and to ask for their help in the study. The letters for those not attending the conference were sent by mail upon return from the ALA conference (see appendix G for a copy of this letter, example 4). Two persons attending ALA had indicated that they had not received the initial packets, and new packets were given to them. A third follow-up letter was sent to the leader group on August 1, requesting all returns by the end of August (see appendix G, example 5). For several packets returned due to wrong addresses, a second mailing was done. Early in September, sixty-nine returns were received. The adjusted response rate was 80 percent.

Practitioner Group

As discussed in chapter IV, a randomly selected sample of Rutgers M.L.S. graduates formed the practitioner group. The instruments were mailed to this group the week of June 8-13, 1975, by first class mail. The one hundred participants each received a cover letter co-signed by both the researcher and Professor Gaver, who is well-known to Rutgers alumni (see appendix G for a copy of the letter). With this group, as might be expected, a problem developed with incorrect addresses. A computer list of addresses had been secured from the Alumni Office at the University; however, they were not always up-to-date or accurate. Several packets were returned due to wrong addresses; in most cases, a second mailing was done to these people at another

address. Several of these were eventually returned, as were several of the follow-up mailings.

A follow-up letter was sent to all the practitioner nonrespondents early in July. A third follow-up was sent early in August to about forty nonrespondents. Examples of both of these letters can be found in appendix G, examples 7 and 8. Late in September, a total of sixty returns had been received, making an adjusted response rate of 67 percent.

Response Rates

The student group (N = 99) had the highest response rate as might be expected due to the distribution procedure. Four of the students had been involved in the pretest, and eight others had withdrawn from school, thus eliminating twelve students from the study. Out of the potential eighty-seven student participants, 85 percent or seventy-four students responded--generally considered an excellent response rate. Table 4 summarizes the response rates and the explanation for calculation of an adjusted response rate.

The leader group (N = 90) had the next highest response rate. Two leaders were eliminated from the study due to lack of an address and illness. Of the eighty-eight possible respondents, 79 percent or seventy leaders responded. However, one was later found to be unusable due to the noncompletion of the total instrument, and

TABLE 4

RESPONSES TO THE STUDY INSTRUMENTS

Response/Nonresponse	Students (N=99)	Leaders (N=90)	Practitioners (N=100)
1 Packets returned/ wrong address	0	1[a]	7
2 Partial responses	0	1	0
3 Illness	0	1	1
4 Responses received/ too late	0	1	2
5 Involved in pretest	4	0	0
6 Students withdrawn from school	8	0	0
7 (Complete) responses	74	70	60
8 Refusal to participate	2	5	3
9 Adjusted n/ n=n-items 1, 2, 3, 4, 5, and 6	87	86	90
10 Percent response	85	80	67

NOTE: Total average response rate was 77 percent.

[a]Never sent due to unavailability of address.

another was received too late to be used. A total of sixty-nine leader responses were used from a possible total of eighty-six, or a response rate of 80 percent. Forty-nine of the respondents had been presidents of ALA or divisions of ALA, and twenty had been award winners. The response rate was considered well above average for survey research.

The practitioner group (N = 100) had the greatest number of wrong addresses and returned packets, a total of seven. One respondent wrote saying she was too ill to participate, and two responses were received too late to use. After these ten nonrespondents were eliminated, a total possible response group of ninety remained. A total of sixty responses were received, with a 67 percent response rate.

Even though the possible participants were warned of the length of time the study would involve, only ten possible respondents (two students, five leaders, and three practitioners) wrote, indicating they were not able to participate due to "lack of time." During the pretest, the time to complete the instruments ranged from 45 minutes to 65 minutes. The pretest group did not complete the Background Data Sheet as did the leaders and practitioners in the "real situation." The directions accompanying the instruments stated that the completion time would be approximately 1 hour.

CHAPTER VI

WORK VALUES ANALYSES

In chapter II, the concept of values including work values was discussed from a conceptual and methodological point of view. In chapter IV, a description of the pretest of the work values instruments was presented, and in the preceding chapter, the actual data collection process including work values data was outlined. The purpose of this chapter is to compare the results of the three groups of respondents' responses to the Work Values Instrument (see appendix E for Work Values Instrument), as well as to assess the service indicators. The focus will be on a key question of concern in the current study--is service orientation considered an important concept on a scale of work values within the sample groups tested? In other words, is the concept important enough to those in the library field to place it high in a group of priorities of work values?

Two items of the ten-item instrument were considered to assess directly the "service ideal" in its most altruistic and "ideal" sense: "a sense of accomplishment by contributing to society" and "an opportunity to be helpful to others." The first one seems to encompass Goode's meaning of the Traditional-Professional Type of Service

while the second one has more the quality of Simpson and Simpson's Semiprofessional Type of Service. One other item will be of special interest to this study, "commitment to a profession," as it indicates the degree of career involvement the person believes is important in a set of work values.

Each of the separate samples--students, leaders, and practitioners responses--were coded and submitted to the *SPSS computer program, subprogram Codebook (currently* renamed Frequencies). This program computes one-way frequency distribution tables, i.e., marginals, for discrete or categorical variables. Several descriptive statistics are also calculated. The median was chosen as the best statistic descriptive of these data for the specific purpose of the study. The median figures indicate the midpoint of the frequency distribution, and best describe the results of the ranking process. The lower the median (closer to zero), the more important the value is to the group; the higher the median (closer to ten), the less important the value is. Frequency distributions are not being reported, nor are the other statistics derived such as the mean, mode, measures of kurtosis or skewness, minimums, maximums, ranges, standard errors, nor standard deviations. They would only confuse, and not serve any useful purpose for this study.

Tables 5, 6, and 7 present the composite median data for the student, leader, and practitioner groups, respectively.

TABLE 5

WORK VALUES DATA: STUDENTS

Items	Students (N=74)
Opportunity to use my special abilities or aptitudes	2.143[a]
Opportunity to be helpful to others	2.857
Opportunity to work with people rather than things	3.500
Permit me to be creative/original	4.088
Sense of accomplishment by contributing to society	4.559
Chance to exercise leadership	6.654
Commitment to a profession	6.667
Stable, secure future	7.538
Social status and prestige	8.887
Chance to earn a great deal of money	9.286

[a]Scores of each group are expressed as medians.

TABLE 6

WORK VALUES DATA: LEADERS

Items	Leaders (N=69)
Sense of accomplishment by contributing to society	2.000[a]
Opportunity to use my special abilities or aptitudes	2.893
Opportunity to be helpful to others	3.688
Opportunity to work with people rather than things	4.438
Chance to exercise leadership	4.769
Permit me to be creative/original	4.875
Commitment to a profession	5.947
Stable, secure future	7.828
Social status and prestige	8.850
Chance to earn a great deal of money	10.000

[a]Scores of each group are expressed as medians.

TABLE 7

WORK VALUES DATA: PRACTITIONERS

Items	Practitioners (N=60)
Opportunity to use my special abilities or aptitudes	2.125[a]
Opportunity to be helpful to others	3.250
Sense of accomplishment by contributing to society	3.875
Opportunity to work with people rather than things	4.214
Permit me to be creative/original	4.250
Chance to exercise leadership	6.167
Stable, secure future	6.944
Commitment to a profession	7.250
Social status and prestige	8.700
Chance to earn a great deal of money	8.900

[a]Scores of each group are expressed as medians.

Student Work Values

Students place "opportunity to use my special abilities or aptitudes" as their first choice work value; second, however, is an indicator of service--"opportunity to be helpful to others." In the middle of the group of ten items (ranked fifth) is the other indicator of service--"sense of accomplishment by contributing to society." They do not rate "commitment to a profession" (ranked seventh) very high, an indicator of career involvement. Overall, students combine two types of work values--self-expression and people-oriented values (based on table 1 presented in chapter II). They value least the reward-oriented values--"chance to earn a great deal of money," "social status and prestige," and "a stable, secure future."

Leader Work Values

The leader group places a "sense of accomplishment by contributing to society" as their first choice work value; as their second choice, they rank "opportunity to use my special abilities or aptitudes"--the students' number one value. Their number one choice is one of the indicators of service; and the other service indicator, "opportunity to be helpful to others," is their third choice. Obviously, the leaders place the service value as a priority item. "Commitment to a profession" somewhat surprisingly is in the same position as the student group--seventh place. Four of their first five choices are people-oriented

work values; only one--"opportunity to use my special abilities or aptitudes" is a self-expression value. Again, as in the student group, the reward-oriented values are ranked lowest.

Practitioner Work Values

The top two ranked choices of the practitioner group are the same as those of the student group, and the top choice is a self-expression value. Service indicators, "opportunity to be helpful to others," is their second choice; and "sense of accomplishment by contributing to society" is their third choice, placing the practitioners right along with the leader group in terms of the importance of the service concept. It would appear that the student group, perhaps more concerned with their own development and with a more recent career choice, have a somewhat lower service ideal as a work value. Practitioners rank "commitment to a profession" even lower than the other two groups--as their eighth choice.

Composite Ranking of the Groups

Table 8 presents a total summary of the rankings of the three groups, as well as a composite ranking of medians of the combined groups. "Opportunity to use my special abilities or aptitudes" becomes the highest ranked item in this composite grouping; "opportunity to be helpful to others," the second choice; and "sense of accomplishment by contributing to society," the third choice. The two

TABLE 8

WORK VALUES DATA: COMPOSITE OF GROUPS

Items	Students (N=74)	Leaders (N=69)	Practi-tioners (N=60)	Compo-site
Opportunity to use my special abilities or aptitudes	2.143 (1)[a]	2.893 (2)	2.125 (1)	2.387 (1)
Chance to earn a great deal of money	9.286 (10)	10.000 (10)	8.900 (10)	9.395 (10)
Permit me to be creative/ original	4.088 (4)	4.875 (6)	4.250 (5)	4.404 (5)
Sense of accomplishment by contributing to society	4.559 (5)	2.000 (1)	3.875 (3)	3.478 (3)
Chance to exercise leader-ship	6.654 (6)	4.769 (5)	6.167 (6)	5.863 (6)
Opportunity to work with people rather than things	3.500 (3)	4.438 (4)	4.214 (4)	4.051 (4)
Commitment to a profession	6.667 (7)	5.947 (7)	7.250 (8)	6.621 (7)
Opportunity to be helpful to others	2.857 (2)	3.688 (3)	3.250 (2)	3.278 (2)
Social status and prestige	8.887 (9)	8.850 (9)	8.700 (9)	8.812 (9)
Stable, secure future	7.538 (8)	7.828 (8)	6.944 (7)	7.770 (8)

[a]The scores of each group are expressed as medians. The number in parentheses after the medians are composite ranking scores.

service indicators, ". . . helpful to others" and ". . . contributing to society," are the second and third choices --an indication that the total group of librarians and information people being studied are interested in the service concept for the field. Leadership, however, ranks sixth--rather low in the total scheme; even the leader group ranks it as their fifth choice. "Commitment to a profession" remains seventh in the composite rankings, again a low ranking.

Summary of the Work Values Results

Both the students and the practitioners rated "opportunity to use special abilities or aptitudes" first in importance and "opportunity to be helpful to others" as second. The leaders, however, rated a "sense of accomplishment by contributing to society" as of most importance, placed "opportunity to use special abilities . . ." as their second choice, and "opportunity to be helpful to others" as their third choice. The results indicate a somewhat higher emphasis on contributing to society on the part of the leaders--the more altruistic value listed here. Students appeared to be the least interested group in contributing to society.

The least valued for all three groups are the reward-oriented values: "chance to earn a great deal of money" and "social status and prestige."

"Commitment to a profession" ranks very low for

all three groups, with the practitioners ranking it eighth (out of ten) and the students and leaders ranking it seventh.

All three groups are definitely in the intrinsic, people-oriented occupational value complex as defined by Rosenberg. However, the student and practitioner groups both rank "opportunity to use special abilities or aptitudes" above all others, showing that these two groups are somewhat more self-expressive than people-oriented as compared with the leader group. Students are least interested in "contributing to society" of the three groups even though they do want to be "helpful to others." It would seem that service orientation in the altruistic sense is not as important to them. Two possible influences on this might be that students are in a self-expressive period and/or that the student group has not been fully socialized into the profession.

Generally, the results do seem to support other studies that the field is people-oriented. However, the first choice of both the student and practitioner groups also indicates that their greater interest "in using special abilities or aptitudes" than any other work value supports the Goode definition of service orientation over that of Simpson and Simpson ("exercising technical skills and abilities" over "helping others" and especially more than "working with people"). Obviously, neither the Goode type nor the Simpson and Simpson type are clear-cut in this

profession--perhaps suggesting again the need for a special definition of the term for this particular field--the main focus of the current study.

CHAPTER VII

SERVICE ORIENTATION CONCEPT ANALYSES

Q-Sorts Data

Before presenting the results of the analysis of the Q-sorts data, some discussion on the rationale for particular decision making involved in the factor analyses will be presented. Specifically, the choice of the "best solution," the conditions for "interpretation of the factors," and the bases for comparison between solutions will be discussed. More detailed information is presented in appendix H.

One problem of factor analysis is that

> . . . there are many statistically equivalent ways to define the underlying dimensions of the same set of data. . . . This indeterminacy in a factor solution is in a way unfortunate because there is no unique and generally accepted best solution . . . one is left to choose the best rotational method to arrive at the terminal solution that satisfies the theoretical and practical needs of the search problem.[1]

The initial factors extracted (before rotation) are independent from one another; that is, the factors are orthogonal. A choice must be made whether to use orthogonal or oblique rotation after this solution is reached. Gorsuch has recommended that the varimax sequence (used in the QUANAL program) provides a basis for determining

whether orthogonal or oblique factors are more acceptable:

> If the correlations among the oblique factors are negligible, then the varimax solution would be accepted as a reasonable solution. If the correlations seem significant, the oblique solution would be the choice.[2]

Regardless of rotation procedure, the rotation will attempt to rotate factors so that each variable is loaded on as few factors as possible, making it a simpler factor. The simple structure solution is the most parsimonious solution possible. In an orthogonal rotation, a simple factor is one with only one's and zero's in the column.

Other designated parameters will include: the request for any number of factors, for a one factor solution, and for a two factor solution. For as Gorsuch has explained: "When several rotation procedures have been applied to the same data, they can be compared on a series of dimensions."[3]

Another decision at the outset will affect the rotation--specificity of the conditions of the factor analysis including: the number of factors to be extracted and rotated, the minimum eigenvalue to be accepted, or reliance on the default options of the program. In an exploratory study such as the current investigation, where the theoretical domain is not fully explored, it seems more advantageous to move heuristically; that is, to first rely on default options, allowing the program to make decisions on parameters which are considered the most used and of more general applicability. Then, the researcher can base

future decisions on the results of the first solution (result of factor analysis) in terms of number of factors discovered, percentage of variance accounted for by the total number of factors, and so forth.

It is important to explain also the rationale at this point for not using significance tests in the current study; according to Gorsuch, significance tests do not, generally, apply to transposed factor analysis, i.e., Q analysis.[4]

The important determinant of the specific loading to be accepted, however, is based on Gorsuch's definition of a salient loading as one

> . . . which is sufficiently high to assume that a relationship exists between the variable and the factors . . . and that the relationship is high enough so that the variable can aid in interpreting the factor and vice versa.[5]

The current investigation will interpret absolute values of .40 as salient or significant loadings.

In order to understand fully the importance of the particular factor interpretations resulting from the present study, a caution put forth by Comrey is presented below.

> Factor interpretation at its best becomes an activity to be developed over a series of related studies rather than something to be based solely on a single investigation.[6]

Consequently, the factor interpretations of this study need to be tentative, and used as future researchable hypotheses.

Reporting the Solutions

Though most factor analysis textbooks recommend that the correlation matrices be presented in a report of a particular factor analysis, it has been decided to exclude all of them from the report except the results of the combined group matrices. Due to the large dimensions of the matrices, it is simply not feasible to do so. The Pearson product-moment correlation method is used in both the QUANAL and the SPSS computer programs. The matrices ordinarily presented in the solution (initial factor matrices, factor score matrices, and so forth) will also not be presented. The combined group matrices are presented in appendix I.

Factor analysis of the four groups (students, leaders, practitioners, and the combined samples group) included several separate solutions which will be presented comparatively in the following tables, followed by a comparison of the best solutions of each of the sample groups.

Student group Q analysis

Several factor analyses solutions were obtained for the student Q-sort data. The three different solutions are presented in table 9, along with the parameters of each analysis, the percentage of variance accounted for in the total solution as well as of each of the factors within a solution, plus the correlations between the factors.

Solution 3 was considered the best solution for the

TABLE 9

COMPARISON OF FACTOR SOLUTIONS OF THE STUDENT GROUP, Q-SORT DATA
(N = 74)

Requested Parameters:	Solution 1					Solution 2		Solution 3
1 Rotation	Orthogonal					Oblique[a]		Oblique
2 Eigenvalue	1.00					1.00		1.00
3 Factors	...					2		1
4 Number of factors	1	2	3	4	5	1	2	1
5 Percent of variance								
Before rotation	59	3	2	2	2	59	3	59
After rotation	20	13	13	10	12	34	28	...[b]
6 Eigenvalues	44	2	2	2	1	44	2	44
7 No. of persons in each factor	33	13	13	5	10	48	26	74
8 No. of consensus items			32				52	54
9 Correlations between types								
1	1.00	.84	.88	.81	.88	1.00	.90	
2	.84	1.00	.80	.75	.84	.90	1.00	
3	.88	.80	1.00	.78	.86			
4	.81	.75	.78	1.00	.76			
5	.88	.84	.86	.76	1.00			
10 Percent of total variance			68			62		59

NOTE: All numbers are rounded to nearest whole number if over .5, even the two decimal place eigenvalues--for ease in presentation.

[a]Reverts to orthogonal due to complex roots.

[b]No rotation for one factor solution.

student data in terms of the goals of the current study. Fifty-nine percent of the variance is accounted for in the one factor solution. In a one factor solution, no rotation is attempted; all of the persons are included in this factor, and all of the items are consensus items. Table 10 lists the most accepted items and the most rejected items of the one factor solution, with + or - 1.00 being the cutoff point for listed items.

This student type can be characterized as: aware of the need for interpersonal and communication skills, open and people-oriented, community-user-oriented, flexible, and as one who will probe reference questions as well as work to insure that the information is accurate. Though this is a combination of primarily ideal Type 3 (4 items) and ideal Type 2 (3 items), one ideal Type 1 item and one Type 4 (untyped) item are also included in the "most accepted" items. In terms of the "most rejected" items of this student type, they include mostly Type 4 items (7, 22, 32, 47, 50, and 52) and a few ideal Type 2 items (6, 10, and 54). Students reject those items that can be characterized as: thing-oriented, passive, present-user-oriented, lack of risk-taking, being negative toward change, and that indicate a lack of confidence.

Overall, this seems to indicate a very positive image of the service orientation of the student group. Though largely accepting of Type 3 (ideal type), there are enough items from ideal Type 2 to consider the

TABLE 10

STUDENT SAMPLE: SOLUTION 3--DESCENDING ARRAY OF ITEM DESCRIPTIONS AND z SCORES

Item No.	Statement	Average z Score	Ideal Types
	Most Accepted		
27	Feels that interpersonal and communication skills are as important as knowledge of libraries and books.	1.77	3
28	Wants to be involved in the process of bringing information and books together with people.	1.52	3
25	Is especially interested in helping people.	1.51	2
4	Believes in treating patrons with an open, personal manner.	1.45	2
51	Works to insure that all information given by library personnel is the most accurate information available.	1.35	4
3	Feels that library staff members should act as a liaison to other libraries and agencies when not able to supply information.	1.14	3
23	Will plan services based on the needs of the total community.	1.10	3
1	Feels that it is important to question a patron to ascertain actual needs when faced with a reference question.	1.06	1
18	Believes that materials should be organized in ways users will find the most convenient.	1.01	2
	Most Rejected		
32	Wants to be in the quiet, peaceful atmosphere of books and libraries.	-1.86	4

TABLE 10--Continued

Item No.	Statement	Average z Score	Ideal Types
	Most Rejected		
7	Expects patrons to use reference tools by themselves.	-1.82	4
9	Believes in treating patrons with a business-like, reserved manner.	-1.81	1
52	Takes for granted that library personnel gives out accurate information to patrons.	-1.77	4
50	Will initiate new programs and services only after they have proved successful in other libraries.	-1.62	4
6	Accepts what patron initially says he wants when answering reference questions.	-1.61	2
47	Prefers to work in an orderly, predictable environment.	-1.51	4
19	Feels that the best way to provide access for the most patrons is to follow circulation rules conscientiously.	-1.35	1
10	Feels that staff members should spend time exclusively on needs and services of current patrons.	-1.33	2
54	Needs to have approval expressed by patrons and colleagues.	-1.21	2
22	Believes that programs should be provided for groups with special needs only if additional resources are available.	-1.00	4

formation of a new ideal type which will be further commented on in chapter X.

Solution 3 differs from Solutions 1 and 2 in the following ways. One unique item is found in the most accepted items of Solution 3--item 18, "believes that materials should be organized in ways users will find the most convenient." Solution 2 included two unique items in the most rejected category--item 12, "believes libraries should be under the control of a policy-making board," and item 41, "believes that librarians should support the library whenever complaints are heard from outsiders." However, the similarity of items between the three solutions adds to the credibility of the choice of the one factor solution as the best solution for the student group.

Leader group Q analysis

Similar factor analyses were attempted with the Q-sort data of the leaders. The three different solutions are presented in table 11, again with the parameters of the analyses, the variance accounted for, the correlations between factors, and so forth. Solution 1 which attempted a varimax (orthogonal) rotation failed due to a lack of convergence of the seven unrotated factors, causing the program to terminate.

Solution 3, the one factor solution for the leader group, accounts for almost as much variance as Solution 2 (57 percent as compared to 61 percent); and has been chosen

TABLE 11

COMPARISON OF FACTOR SOLUTIONS OF THE LEADER GROUP, Q-SORT DATA (N = 69)

Requested Parameters:	Solution 1							Solution 2		Solution 3
1 Rotation	Orthogonal							Oblique[a]		Oblique
2 Eigenvalues	1.00							2.00		1.00
3 Factors	...							...		1
4 Number of factors	1	2	3	4	5	6	7	1	2	1
5 Percent of variance:										
Before rotation	57	3	3	2	2	2	2	57	4	57
After rotation	...[b]							36	25	...[c]
6 Eigenvalues	39	2	2	1	1	1	1	39	2	39
7 No. of persons in each factor								48	21	69
8 No. of consensus items	...							51		54
9 Correlations between types										
1								1.00	.84	
2								.84	1.00	
10 Percent of total variance	17							60		57

NOTE: All numbers are rounded to nearest whole number if over .5, even the two decimal place eigenvalues--for ease in presentation.

[a]Reverts to orthogonal; due to complex roots.

[b]No convergence possible; program terminates after one hundred iterations.

[c]No rotation for one factor; program terminates.

as the best solution for the leader group. The high correlations between factors in Solution 2 (.84) should be noted. Included in the most accepted item group are: five items of ideal Type 3, two items of ideal Type 2, and one of Type 4. In terms of the most rejected items, they are primarily Type 4 (seven items), ideal Type 1 (three items), and ideal Type 2 (three items) (see table 12).

Description of the leader group

The leader "type" can be characterized as: aware of interpersonal and communication skills, people-oriented, community-user-oriented, aware of the role of bringing books and information together with people, one who insures accurate information, and one who believes in the liaison role of a library. The leader is primarily of ideal Type 3 orientation.

The leader group rejects: the view of the library as a quiet, peaceful and orderly place; being reserved in dealing with users; the passive, cautious, and local orientation; and a seemingly contradictory two items--needing approval expressed and acting regardless of other's approval.

Comparison of student and leader groups

The leader group most accepts item 16, "believes in meeting with potential user groups to assess needs and plan services" (ideal Type 3), and item 21, "attempts to determine satisfaction of users with current services"

TABLE 12

LEADER SAMPLE: SOLUTION 3--DESCENDING ARRAY OF ITEM DESCRIPTIONS AND z SCORES

Item No.	Statement	Average z Score	Ideal Types
	Most Accepted		
27	Feels that interpersonal and communication skills are as important as knowledge of libraries and books.	1.72	3
28	Wants to be involved in the process of bringing information and books together with people.	1.53	3
25	Is especially interested in helping people.	1.47	2
51	Works to insure that all information given by library personnel is the most accurate information available.	1.32	4
23	Will plan services based on the needs of the total community.	1.31	3
16	Believes in meeting with potential user groups to assess needs and plan services.	1.24	3
3	Feels that library staff members should act as a liaison to other libraries and agencies when not able to supply information.	1.13	3
21	Attempts to determine satisfaction of users with current services.	1.04	2
	Most Rejected		
32	Wants to be in the quiet, peaceful atmosphere of books and libraries.	-1.98	4
19	Feels that the best way to provide access for the most patrons is to follow circulation rules conscientiously.	-1.68	1

TABLE 12--Continued

Item No.	Statement	Average z Score	Ideal Types
	Most Rejected		
50	Will initiate new programs and services only after they have proved successful in other libraries.	-1.67	4
7	Expects patrons to use reference tools by themselves.	-1.61	4
6	Accepts what patron initially says he wants when answering reference questions.	-1.59	2
47	Prefers to work in an orderly, predictable environment.	-1.51	4
52	Takes for granted that library personnel gives out accurate information to patrons.	-1.46	4
54	Needs to have approval expressed by patrons and colleagues.	-1.37	2
10	Feels that staff members should spend time exclusively on needs and services of current patrons.	-1.34	2
22	Believes that programs should be provided for groups with special needs only if additional resources are available.	-1.31	4
41	Believes that librarians should support the library whenever complaints are heard from outsiders.	-1.13	4
9	Believes in treating patrons with a business-like, reserved manner.	-1.05	1
53	Acts according to personal convictions regardless of other's approval.	-1.05	1

(ideal Type 2) while the student group does not. Students, however, most accept item 1, "feels that it is important to question a patron to ascertain actual needs when faced with a reference question" (ideal Type 1); item 4, "believes in treating patrons with an open, personal manner" (ideal Type 2); and item 18, "believes that materials should be organized in ways users will find the most convenient" (ideal Type 2). The leader group rejects everything that the student group does plus item 41, "believes that librarians should support the library whenever complaints are heard from outsiders" (ideal Type 4), and item 53, "acts according to personal convictions regardless of other's approval" (ideal Type 1). Both groups are predominantly "ideal Type 3"; both groups include the same ideal Type 2 item, "is especially interested in helping people," again supporting the notion of some mix between these two ideal types.

Practitioner group Q analysis

The three solutions obtained from the factor analyses of the practitioner Q-sorts are found in table 13. Solution 1, an oblique rotation attempt, reverted to an orthogonal solution due to complex roots.

Solution 3 has been chosen as the best solution, due to the high correlation between factors in Solutions 1 and 2 plus the high clustering of persons in one factor of Solution 1. The results of this solution are found in

TABLE 13

COMPARISON OF FACTOR SOLUTIONS OF THE PRACTITIONER GROUP, Q-SORT DATA
(N = 60)

Requested Parameters:	Solution 1					Solution 2		Solution 3
1 Rotation	Oblique[a]					Ortho-gonal		Ortho-gonal
2 Eigenvalues	1.00					1.00		2.00
3 Factors	...					2		...
4 Number of factors	1	2	3	4	5	1	2	1
5 Percent of variance								
Before rotation	55	3	3	2	2	55	3	55[b]
After rotation	27	10	11	10	7	33	25	...
6 Eigenvalues	33	2	2	1	1	33	2	33
7 No. of persons in each factor	37	9	7	4	3	39	21	60
8 No. of consensus items			13			50		54
9 Correlations between types								
1	1.00	.80	.79	.80	.58	1.00	.88	
2	.80	1.00	.69	.65	.57	.88	1.00	
3	.79	.69	1.00	.69	.54			
4	.80	.65	.69	1.00	.54			
5	.58	.57	.54	.54	1.00			
10 Percent of total variance			65			58		55

NOTE: All numbers are rounded to nearest whole number if over .5, even the two decimal place eigenvalues--for ease in presentation.

[a] Reverts to orthogonal due to complex roots.

[b] No rotation for one factor solution; program terminates.

table 14. In Solution 3, the most highly accepted items include: four statements from ideal Type 3, four statements from ideal Type 2, and one each from ideal Type 1 and Type 4. These seem to be in agreement with the student and leader group solutions. A new type emerges which is a mix between ideal Types 2 and 3, with a predominance of items from ideal Type 3. All of the most accepted items of the practitioners are the same as those of the student group except that the practitioners also include item 26, "would like to spend a majority of their work time in working with people," an ideal Type 2 item. Several of the most accepted items of the practitioner group differed from those of the leader group. Practitioners include item 1 (ideal Type 1), items 18, 4, and 26 (ideal Type 2) while the leaders do not.

The practitioner type can be characterized as open, active, communicative, wanting to be involved in bringing books and information together with people, people-oriented, community-oriented, flexible, and user-oriented. The items most frequently rejected were: seven items of Type 4, four items of ideal Type 2, and one item of ideal Type 1. The most rejected items are identical to the rejected items of the student group with the exception that the practitioners also reject item 41, "believes that librarians should support the library whenever complaints are heard from outsiders," a Type 4 item with perhaps a local orientation as opposed to a cosmopolitan orientation. The practitioners

TABLE 14

PRACTITIONER SAMPLE: SOLUTION 3--DESCENDING ARRAY OF ITEM DESCRIPTIONS AND z SCORES

Item No.	Statement	Average z Score	Ideal Types
	Most Accepted		
27	Feels that interpersonal and communication skills are as important as knowledge of libraries and books.	1.71	3
51	Works to insure that all information given by library personnel is the most accurate information available.	1.49	4
25	Is especially interested in helping people.	1.46	2
28	Wants to be involved in the process of bringing information and books together with people.	1.44	3
1	Feels that it is important to question a patron to ascertain actual needs when faced with a reference question.	1.43	1
18	Believes that materials should be organized in ways users will find the most convenient.	1.36	2
3	Feels that library staff members should act as a liaison to other libraries and agencies when not able to supply information.	1.34	3
4	Believes in treating patrons with an open, personal manner.	1.32	2
23	Will plan services based on the needs of the total community.	1.20	3
26	Would like to spend a majority of their work time in working with people--both staff and patrons.	1.02	2
	Most Rejected		
7	Expects patrons to use reference tools by themselves.	-1.91	4

TABLE 14--Continued

Item No.	Statement	Average z Score	Ideal Types
	Most Rejected		
32	Wants to be in the quiet, peaceful atmosphere of books and libraries.	-1.79	4
6	Accepts what patron initially says he wants when answering reference questions.	-1.72	2
52	Takes for granted that library personnel gives out accurate information to patrons.	-1.57	4
47	Prefers to work in an orderly, predictable environment.	-1.48	4
9	Believes in treating patrons with a business-like, reserved manner.	-1.42	1
50	Will initiate new programs and services only after they have proved successful in other libraries.	-1.39	4
19	Feels that the best way to provide access for the most patrons is to follow circulation rules conscientiously.	-1.32	1
10	Feels that staff members should spend time exclusively on needs and services of current patrons.	-1.25	2
54	Needs to have approval expressed by patrons and colleagues.	-1.24	2
22	Believes that programs should be provided for groups with special needs only if additional resources are available.	-1.07	4
41	Believes that librarians should support the library whenever complaints are heard from outsiders.	-1.04	4

then, perhaps, are less "local." The practitioner group rejected all those items that the leader group rejected. However, the leader group also rejected item 53, "acts according to personal convictions regardless of other's approval," indicating that the leaders feel that other's approval is more important than do the practitioners. Practitioners, like the students, reject those items that are thing-oriented, passive, only present-user-oriented, that avoid risks, that are negative toward change and the lack of confidence.

Summary of the three factor analyses

The several factor analyses of each of the three groups of the sample have been described in some detail. In each case, the best solution selected was a one factor solution accounting for from 55 percent of the variance in the practitioner group, 57 percent in the leader group, to 59 percent in the student group. The other solutions would not have accounted for more than 10 percent in any of the situations, not a particularly large difference when consideration is given to the high correlations between factors and the numbers of persons clustering on the other factors. Generally, the "person type" emerging seemed to be a mix between ideal Type 3, the Open-Systems Type, and ideal Type 2, the Semiprofessional Type. There seems to be more agreement within types than expected; for this reason a decision was made to combine the three subsets--

leaders, practitioners, and students--into a new combined group.

Combined group Q analysis

Drawing the combined groups sample

Due to a limitation of the QUANAL computer program of a maximum of 109 variables, it was not possible to combine merely the three groups (74 students, 69 leaders, and 60 practitioners) for a total of 203 variables--in this case, people. It was therefore decided to draw an equal sample of each of the groups (N = 30) for a total of 90 variables, which would fit within the computer program's limit. Though it would have been possible to transfer to another factor analysis computer program, the QUANAL program with its WRAP phase seemed uniquely suited to the current study. Also, the comparability of the three separate analyses already completed and the combined groups would have been complicated due to separate models of analyses being used in the two different programs.

Chapter IV has described the selection of the sample, with the two random samplings of thirty members of each the student and practitioner groups; and the stratified sampling by division, presidential group, and award winners group of the total leader group.

The new sample of ninety respondents was submitted to several factor analyses. A comparison of the various factor solutions is summarized in table 15. Solution 1

TABLE 15

COMPARISON OF FACTOR SOLUTIONS OF THE COMBINED SAMPLES GROUP, Q-SORT DATA (N = 90)

Requested Parameters	Solution 1[a]									
1 Rotation	Oblique									
2 Eigenvalue	0.0									
3 Factors	...									
4 Number of factors	1	2	3	4	5	6	7	8	9	10
5 Percent of variance:										
Before rotation	57	1	1	2	2	2	1	1	1	1
After rotation	57	1	1	2	2	2	1	1	1	1
6 Eigenvalues	51	-3	+2	-2	-2	+1	+1	+1	-1	-1
7 No. of persons in each factor	86	0	0	1	1	1	0	0	0	1
8 No. of consensus items	...[b]									
9 Correlation between types										
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
10 Percent of total variance	69									

[a]This solution is for the purpose of the scree test.

[b]Factor 2, largely negative, is made positive and forms new factors, exceeding the program limit of ten factors. Program terminates.

(continued)

TABLE 15--Continued

Requested Parameters	Solution 2							
1 Rotation	Oblique							
2 Eigenvalue	1.0							
3 Factors	...							
4 Number of factors	1	2	3[a]	4[a]	5[a]	6[a]	7[a]	8[a]
5 Percent of variance:								
Before rotation	57	3	2	2	2	1	1	1
After rotation	57	2	2	2	2	2	2	1
6 Eigenvalues	51	3	2	2	2	1	1	1
7 No. of persons in each factor	85	2	1	1	1	0	0	0
8 No. of consensus items	...[b]							
9 Correlation between types								
1								
2								
3								
4								
5								
6								
7								
8								
10 Percent of total variance								

[a]These are reflected factors.

[b]Splitting bipolar factors creates more than program limit of ten factors. Program terminates.

(continued)

TABLE 15--Continued

Requested Parameters	Solution 3			Solution 4		Solution 5
1 Rotation	Oblique[a]			Oblique[a]		Oblique
2 Eigenvalue	2.0			...		3.0
3 Factors	...			2		...
4 Number of factors	1	2[b]	3[b]	1	2	1
5 Percent of variance:						
Before rotation	57	3	2	57	3	57
After rotation	31	8	23	35	24	...[c]
6 Eigenvalues	51	3	2	51	3	51
7 No. of persons in each factor	53	7	30	59	31	90
8 No. of consensus items	37			53		54
9 Correlation between types						
1	1.00	.71	.91	1.00	.90	
2	.71	1.00	.67	.90	1.00	
3	.91	.67	1.00			
10 Percent of total variance	62			60		57

[a]Reverts to orthogonal solution due to complex roots.

[b]These are reflected factors.

[c]No rotation for a one factor solution.

was merely for the purpose of performing the scree test. Cattell gives a detailed discussion of this procedure which provides a solution with a minimum number of factors accounting for the maximum amount of variance. The term, scree, denotes the rubble at the bottom of a cliff. The rationale for this test is given by Gorsuch ". . . that the battery of variables is measuring a limited number of factors well and a larger number of trivial, specific, and error factors much less well."[7] In the principal factor solution (unrotated), factors are extracted by size--the substantive factors first, and the smaller, trivial factors later. Plotting these factors on a graph would result in a straight line sloping downward with the dominant factors not falling on this line. Specifically, the value of the roots are plotted along the ordinate and the root's factor number as the abscissa. A line is drawn across the bottom portion of the roots where they form an approximate straight line. The point where the factors curve above the straight line gives one the number of factors. Cattell had originally suggested using the first factor on the straight line as the number of factors to be extracted; since then he and others have suggested that the number immediately before the straight line be taken as the number of factors. A rough approximation of such a scree test is produced in figure 4 to illustrate the point. The scree test would seem to indicate that the best number of factors should be either two or three factors. This will be

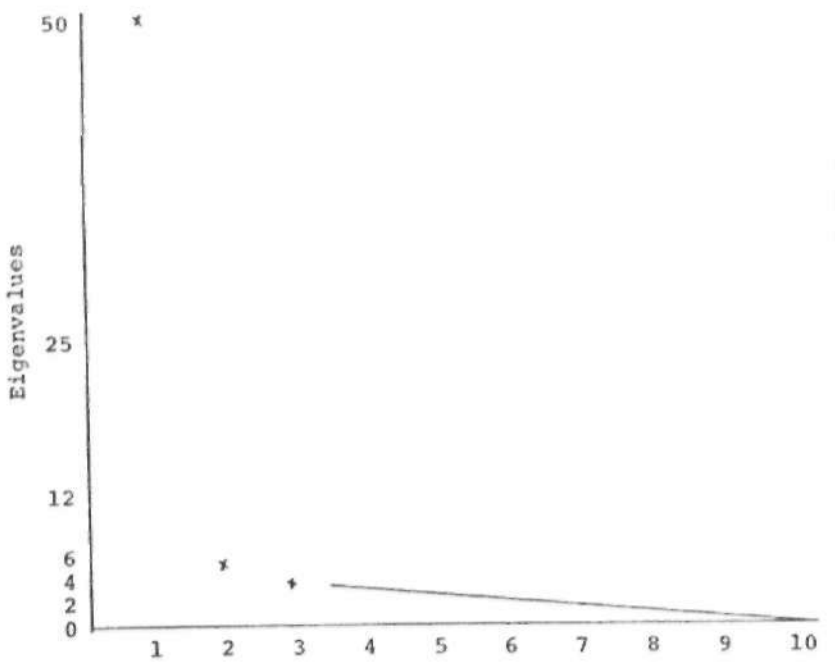


Fig. 4. Plot of the service characteristic roots.

considered as the rest of the solutions are examined and compared.

Solution 3. Table 16 summarizes the item description and z scores for each of the three factors in Solution 3 in a descending array of scores. It should be pointed out that in this solution, Factors II and III are "reflected" factors, meaning that due to predominantly negative factor loadings on these two factors, the direction of all of the loadings has reversed--reversing the direction of the factor. Many rotation problems require this reflection of factors during the rotation process to eliminate a predominance of unwanted negative signs in the factor loadings for a given factor.

A breakdown of the numbers of persons of each subgroup included within each factor, along with the percentages of each, follow in table 17.

It is possible to compare each of the three factors by looking at any item that was given a "significantly" higher or lower ranking in one as compared with the other. Table 18 shows the differences (+1 or -1 or greater) between the z scores of each factor compared with each other factor. Table 19 presents the items of each type of the combined samples group (three factor solution) which are greater than and less than all other items. This serves to distinguish the most unusual and most important items of each factor type.

TABLE 16

COMBINED SAMPLES: SOLUTION 3--DESCENDING ARRAY OF ITEM DESCRIPTIONS AND z SCORES

Item No.	Statement	Average z Score	Ideal Types
	Factor I--Most Accepted		
27	Feels that interpersonal and communication skills are as important as knowledge of libraries and books.	1.75	3
28	Wants to be involved in the process of bringing information and books together with people.	1.39	3
23	Will plan services based on the needs of the total community.	1.36	3
3	Feels that library staff members should act as a liaison to other libraries and agencies when not able to supply information.	1.29	3
16	Believes in meeting with potential user groups to assess needs and plan services.	1.27	3
4	Believes in treating patrons with an open, personal manner.	1.24	2
51	Works to insure that all information given by library personnel is the most accurate information available.	1.15	4
25	Is especially interested in helping people.	1.08	2
21	Attempts to determine satisfaction of users with current services.	1.03	2
18	Believes that materials should be organized in ways users will find the most convenient.	1.03	2
24	Feels it is important to assess needs of nonusers.	1.00	3

TABLE 16--Continued

Item No.	Statement	Average z Score	Ideal Types
	Factor I--Most Rejected		
32	Wants to be in the quiet, peaceful atmosphere of books and libraries.	-1.93	4
7	Expects patrons to use reference tools by themselves.	-1.69	4
50	Will initiate new programs and services only after they have proved successful in other libraries.	-1.64	4
52	Takes for granted that library personnel gives out accurate information to patrons.	-1.64	4
6	Accepts what patron initially says he wants when answering reference questions.	-1.55	2
47	Prefers to work in an orderly, predictable environment.	-1.51	4
19	Feels that the best way to provide access for the most patrons is to follow circulation rules conscientiously.	-1.47	1
10	Feels that staff members should spend time exclusively on needs and services of current patrons.	-1.47	2
22	Believes that programs should be provided for groups with special needs only if additional resources are available.	-1.32	4
9	Believes in treating patrons with a business-like, reserved manner.	-1.31	1
54	Needs to have approval expressed by patrons and colleagues.	-1.20	2
53	Acts according to personal convictions regardless of other's approval.	-1.09	1

TABLE 16--Continued

Item No.	Statement	Average z Score	Ideal Types
	Factor I--Most Rejected		
41	Believes that librarians should support the library whenever complaints are heard from outsiders.	-1.02	4
	Factor II--Most Accepted		
28	Wants to be involved in the process of bringing information and books together with people.	1.90	3
37	Reads current professional journals and books regularly to keep up-to-date.	1.65	1
30	Is especially interested in building library collections.	1.52	1
2	Feels that it is important to provide opportunities for instruction in the use of libraries and books.	1.52	4
51	Works to insure that all information given by library personnel is the most accurate information available.	1.47	4
21	Attempts to determine satisfaction of users with current services.	1.34	2
25	Is especially interested in helping people.	1.32	2
40	Feels that all programs and services should reflect the goals of the particular library.	1.26	3
27	Feels that interpersonal and communication skills are as important as knowledge of libraries and books.	1.13	3
42	Expects to spend a major part of the total day at work or on work-related activities.	1.09	1
1	Feels that it is important to question a patron to ascertain actual needs when faced with a reference question.	1.02	1

TABLE 16--Continued

Item No.	Statement	Average z Score	Ideal Types
	Factor II--Most Rejected		
32	Wants to be in the quiet, peaceful atmosphere of books and libraries.	-1.96	4
7	Expects patrons to use reference tools by themselves.	-1.96	4
52	Takes for granted that library personnel gives out accurate information to patrons.	-1.62	4
53	Acts according to personal convictions regardless of other's approval.	-1.57	1
6	Accepts what patron initially says he wants when answering reference questions.	-1.30	2
24	Feels it is important to assess needs of nonusers.	-1.27	3
9	Believes in treating patrons with a business-like, reserved manner.	-1.26	1
41	Believes that librarians should support the library whenever complaints are heard from outsiders.	-1.20	4
19	Feels that the best way to provide access for the most patrons is to follow circulation rules conscientiously.	-1.06	1
29	Has a special interest in preserving the record of knowledge for the future.	-1.00	1
	Factor III--Most Accepted		
27	Feels that interpersonal and communication skills are as important as knowledge of libraries and books.	1.78	3
25	Is especially interested in helping people.	1.72	2

TABLE 16--Continued

Item No.	Statement	Average z Score	Ideal Types
	Factor III--Most Accepted		
1	Feels that it is important to question a patron to ascertain actual needs when faced with a reference question.	1.54	1
28	Wants to be involved in the process of bringing information and books together with people.	1.53	3
4	Believes in treating patrons with an open, personal manner.	1.50	2
51	Works to insure that all information given by library personnel is the most accurate information available.	1.48	4
26	Would like to spend a majority of their work time in working with people--both staff and patrons.	1.13	2
	Factor III--Most Rejected		
6	Accepts what patron initially says he wants when answering reference questions.	-1.80	2
47	Prefers to work in an orderly, predictable environment.	-1.71	4
32	Wants to be in the quiet, peaceful atmosphere of books and libraries.	-1.70	4
7	Expects patrons to use reference tools by themselves.	-1.66	4
50	Will initiate new programs and services only after they have proved successful in other libraries.	-1.58	4
9	Believes in treating patrons with a business-like, reserved manner.	-1.57	1
19	Feels that the best way to provide access for the most patrons is to follow circulation rules conscientiously.	-1.42	1

TABLE 16--Continued

Item No.	Statement	Average z Score	Ideal Types
	Factor III--Most Rejected		
52	Takes for granted that library personnel gives out accurate information to patrons.	-1.42	4
54	Needs to have approval expressed by patrons and colleagues.	-1.33	2
10	Feels that staff members should spend time exclusively on needs and services of current patrons.	-1.13	2

TABLE 17

PERSONS WITHIN EACH FACTOR OF SOLUTION 3
(N = 90)

Sample Group	Factor I	Factor II	Factor III	Total
Leaders	22	3	5	30
	(73)[a]	(10)	(17)	(100)
Practitioners	14	3	13	30
	(47)	(10)	(43)	(100)
Students	17	1	12	30
	(57)	(3)	(40)	(100)
	53	7	30	90
	(59)	(8)	(33)	(100)

[a]Those numbers in parentheses represent percentages.

TABLE 18

COMBINED SAMPLES: SOLUTION 3--DESCENDING ARRAY OF DIFFERENCES BETWEEN FACTORS

Item No.	Statement	z Score Differences
	Factors I and II	
	Positive Differences	
24	Feels it is important to assess needs of nonusers.	2.271
45	Prefers to work in a challenging, changing environment.	1.365
17	Believes that children and young adults should have access to other general collections besides those designated for them.	1.351
5	Feels it is important to go out to speak to groups about services of the library.	1.327
18	Believes that materials should be organized in ways users will find the most convenient.	1.028
	Negative Differences	
30	Is especially interested in building library collections.	-1.920
20	Believes materials should be organized following standards of the profession, i.e., classification, filing, subject heading rules, and schemes.	-1.143
22	Believes that programs should be provided for groups with special needs only if additional resources are available.	-1.129
42	Expects to spend a major part of the total day at work or on work-related activities.	-1.100
2	Feels that it is important to provide opportunities for instruction in the use of libraries and books.	-1.089

TABLE 18--Continued

Item No.	Statement	z Score Differences
	Factors I and II	
	Negative Differences	
37	Reads current professional journals and books regularly to keep up-to-date.	-1.030
	Factors I and III	
	None for Positive Differences	
	Negative Differences	
53	Acts according to personal convictions regardless of other's approval.	-1.359
	Factors II and III	
	Positive Differences	
42	Expects to spend a major part of the total day at work on work-related activities.	1.505
40	Feels that all programs and services should reflect the goals of the particular library.	1.451
2	Feels that it is important to provide opportunities for instruction in the use of libraries and books.	1.380
37	Reads current professional journals and books regularly to keep up-to-date.	1.325
30	Is especially interested in building library collections.	1.269
20	Believes materials should be organized following standards of the profession, i.e., classification, filing, subject heading rules, and schemes.	1.088
11	Believes that library staff members need the direction of a supervisor.	1.003

TABLE 18--Continued

Item No.	Statement	z Score Differences
	Factors II and III	
	Negative Differences	
53	Acts according to personal convictions regardless of other's approval.	-1.840
45	Prefers to work in challenging, changing environment.	-1.426
18	Believes that materials should be organized in ways users will find the most convenient.	-1.340
17	Believes that children and young adults should have access to other general collections besides those designated for them.	-1.327
24	Feels it is important to assess needs of nonusers.	-1.300
26	Would like to spend majority of work time with people--both staff and patrons.	-1.224
49	Will initiate new program considered important even if potentially controversial.	-1.218
4	Believes in treating patrons with an open, personal manner.	-1.060

TABLE 19

COMBINED SAMPLES GROUP: SOLUTION 3--ITEMS AND z SCORES GREATER OR LESS THAN CORRESPONDING ARRAY z'S

Item No.	Statement	z Score	Differences
	Factor Type I Items Greater Than All Others		
24	Feels it is important to assess needs of nonusers.	1.003	1.621
5	Feels it is important to go out to speak to groups about services of the library.	0.735	0.959
16	Believes in meeting with potential user groups to assess needs and plan services.	1.269	0.871
17	Believes that children and young adults should have access to other general collections besides those designated for them.	0.793	0.687
23	Will plan services based on the needs of the total community.	1.361	0.576
46	Likes to be part of planning and implementing new programs.	0.872	0.502
3	Feels that library staff members should act as a liaison to other libraries and agencies when not able to supply information.	1.291	0.424
31	Is especially interested in introducing computer and other technological systems into the library setting.	-0.346	0.379
48	Experiments with new programs of potential interest.	0.918	0.329
	Factor Type I Items Less Than All Others		
30	Is especially interested in building library collections.	-0.401	-1.286
22	Believes that programs should be provided for groups with special needs only if additional resources are available.	-1.321	-0.749

TABLE 19--Continued

Item No.	Statement	z Score	Differences
	Factor Type I Items Less Than All Others		
20	Believes materials should be organized following standards.	-0.441	-0.599
10	Feels that staff members should spend time exclusively on needs and services of current patrons.	-1.466	-0.466
25	Is especially interested in helping people.	1.075	-0.448
44	Expects to be able to have time each day for recreational, cultural, family, or leisure activities.	-0.313	-0.437
50	Will initiate new programs and services after they have proven successful.	-1.638	-0.420
	Factor Type II Items Greater Than All Others		
30	Is especially interested in building library collections.	1.520	1.595
42	Expects to spend a major part of the total day at work or on work-related activities.	1.089	1.302
2	Feels that it is important to provide opportunities for instruction.	1.518	1.235
40	Feels that all programs and services should reflect the goals of the particular library.	1.265	1.190
37	Reads current professional journals and books regularly.	1.652	1.177
20	Believes materials should be organized following standards of the profession, i.e., classification, filing, subject heading rules, and schemes.	0.702	1.115
22	Believes that programs should be provided for groups with special needs only if additional resources are available.	-0.192	0.945

TABLE 19--Continued

Item No.	Statement	z Score	Differences
	Factor Type II Items Greater Than All Others		
11	Believes that library staff members need the direction of a supervisor.	0.183	0.836
47	Prefers to work in an orderly, predictable environment.	-0.836	0.775
50	Will initiate new programs and services only after they have proved successful.	-0.854	0.755
35	Tries to implement the goals and standards of the profession into the local work situation.	0.867	0.642
39	Actively participates in local and/or state library and information professional organizations.	0.496	0.547
21	Attempts to determine satisfaction of users with current services.	1.338	0.528
	Factor Type II Items Less Than All Others		
24	Feels it is important to assess needs of nonusers.	-1.268	-1.785
45	Prefers to work in a challenging, constantly changing environment.	-0.545	-1.395
17	Believes that children and young adults should have access to other general collections besides those designated for them.	-0.558	-1.339
18	Believes that materials should be organized in ways users will find the most convenient.	0.003	-1.184
53	Acts according to personal convictions regardless of other's approval.	-1.566	-1.161
49	Will initiate new program considered important even if potentially controversial.	-0.428	-1.068

TABLE 19--Continued

Item No.	Statement	z Score	Differences
	Factor Type II Items Less Than All Others		
26	Would like to spend a majority of time in working with people.	-0.091	-1.035
5	Feels it is important to go out to speak to groups about service of the library.	-0.592	-1.032
4	Believes in treating patrons with an open, personal manner.	0.440	-0.931
27	Feels that interpersonal and communication skills are as important as knowledge of libraries and books.	1.135	-0.628
36	Does *not* believe in removing a book or magazine title considered important for the collection when a complaint is made.	-0.033	-0.603
	Factor Type III Items Greater Than All Others		
53	Acts according to personal convictions regardless of other's approval.	0.274	1.600
36	Does not believe in removing a book or magazine title considered important for the collection when a complaint is made.	0.957	0.883
18	Believes that materials should be organized in ways users will find the most convenient.	1.344	0.826
26	Would like to spend a majority of their work time in working with people--both staff and patrons.	1.133	0.801
49	Will initiate new program considered important even if potentially controversial.	0.789	0.758
45	Prefers to work in a challenging, constantly changing environment.	0.881	0.743
4	Believes in treating patrons with an open, personal manner.	1.500	0.659

TABLE 19--Continued

Item No.	Statement	z Score	Differences
	Factor Type III Items Greater Than All Others		
29	Has a special interest in preserving the record of knowledge for the future.	-0.251	0.578
1	Feels that it is important to question a patron to ascertain actual needs when faced with a reference question.	1.545	0.563
25	Is especially interested in helping people.	1.725	0.527
13	Prefers to make decisions about how own work is to be performed.	0.201	0.493
	Factor Type III Items Less Than All Others		
40	Feels that all programs and services should reflect the goals of the particular library.	-0.186	-0.987
42	Expects to spend a major part of the total day at work or on work-related activities.	-0.415	-0.954
2	Feels that it is important to provide opportunities for instruction in the use of libraries and books.	0.138	-0.836
37	Reads current professional journals and books regularly to keep up-to-date.	0.327	-0.810
11	Believes that library staff members need the direction of a supervisor.	-0.820	-0.669
21	Attempts to determine satisfaction of users with current services.	0.588	-0.597
47	Prefers to work in an orderly, predictable environment.	-1.714	-0.543
39	Actively participates in local and/or state library and information professional organizations.	-0.204	-0.504

Description of the factors

Factor I is made up of the majority of the respondents, with a total of 53 respondents (22 leaders, 14 practitioners, and 17 students) or 59 percent of the total respondents. This factor could be most characterized as an Open-Systems Type of Service as there are six items from the ideal Open-Systems Type, four items from the ideal Semiprofessional Type, and one item from the untyped items.

Persons belonging within Factor I can be characterized as:

aware of interpersonal and communication skills
open
people-oriented
have a total community orientation
flexible
aware of nonusers' and users' needs
work to insure that information is accurate
willing to act as liaison to other agencies
want to bring information and books together with people

These same persons are not:

business-like or reserved
quiet, peaceful, orderly, and predictable environments
local
current patron-oriented
rule conscious
accept what patron says he wants
take for granted that information is accurate

Factor II is made up of the smallest number of respondents, a total of 7 (3 leaders, 3 practitioners, 1 student) or 8 percent of the total. It might best be characterized as a mix of the Traditional-Professional Type and the Open-Systems Type, as there are four items from the ideal Traditional-Professional Type, two items from the

ideal Semiprofessional Type, three items from the ideal

Open-Systems Type, and two items from the untyped items.

Persons belonging within Factor II can be characterized as:

work as major focus
interested in building library collections
read professional materials
feel it is important to question a patron to ascertain needs
provide instruction in use of library and books

Four items in Factor II are the same as in Factor I:

people-oriented
want to bring information and books together with people
work to insure that information is accurate
aware of interpersonal and communication skills

The items that are different than Factor I items that

characterize those people in Factor II are:

work-oriented
read professional literature
believe in library instruction
interested in building library collections
feel it is important to question a patron to ascertain needs
goal-conscious in terms of planning programs and services
attempt to determine satisfaction of users of current services

Like the people in Factor I, these people in Factor II are

not:

business-like or reserved
desire quiet, peaceful atmosphere
rule conscious
take for granted that information is accurate
accept what patron says he wants

In addition, the people in Factor II are not:

expect patron to use reference tools by themselves
act according to personal convictions regardless of other's approval
nonuser-oriented
local-oriented (supports library from all complaints)

specially interested in preserving record of knowledge for the future

Factor III is made up of 30 respondents (5 leaders, 13 practitioners, and 12 students) or 33 percent of the total respondents. It might be best characterized as People-Oriented. It is made up of one item from the ideal Traditional-Professional Type, three items from the ideal Semiprofessional Type, two items from the ideal Open-Systems Type, and one item from the untyped items. Four significant items making up Factor III are:

aware of interpersonal and communication skills
people-oriented
want to be involved in bringing information and books together with people
work to insure that information is accurate

Factor III also included one item found in Factor I but not in Factor II:

an open, personal manner

and one item included in Factor II but not in Factor I:

feel it is important to question a patron to ascertain needs

plus one unique item (not found in Factors I or II):

would like to spend a majority of work time in working with people--both staff and patrons

The people in Factor III are not:

business-like, reserved (as Factors I and II)
desire quiet, peaceful, orderly, and predictable environments (as Factor I and partially Factor II)
rule conscious (as Factors I and II)
accept what patron says he wants (as Factors I and II)
expect patron to use reference tools by themselves (as Factor II)

Table 20 lists the most accepted and most rejected

TABLE 20

COMBINED SAMPLES: SOLUTION 3--CONSENSUS ITEMS AND z SCORES

Item No.	Statement	Average z Score	Ideal Types
	Most Accepted		
28	Wants to be involved in the process of bringing information and books together with people.	1.61	3
27	Feels that interpersonal and communication skills are as important as knowledge of libraries and books.	1.55	3
25	Is especially interested in helping people.	1.37	2
51	Works to insure that all information given by library personnel is most accurate information available.	1.37	4
1	Feels that it is important to question a patron to ascertain actual needs.	1.17	1
3	Feels that library staff members should act as a liaison to other libraries and agencies when not able to supply information.	1.01	3
	Most Rejected		
32	Wants to be in the quiet, peaceful atmosphere of books and libraries.	-1.86	4
7	Expects patrons to use reference tools by themselves	-1.77	4
52	Takes for granted that library personnel gives out accurate information to patrons.	-1.56	4
6	Accepts what patron initially says he wants when answering questions.	-1.55	2

TABLE 20--Continued

Item No.	Statement	Average z Score	Ideal Types
	Most Rejected		
9	Believes in treating patrons with a business-like, reserved manner.	-1.38	1
50	Will initiate new programs and services only after they have proved successful in other libraries.	-1.36	4
47	Prefers to work in an orderly, predictable environment.	-1.35	4
19	Feels that the best way to provide access for the most patrons is to follow circulation rules conscientiously.	-1.32	1
10	Feels that staff members should spend time exclusively on needs and services of current patrons.	-1.16	2
54	Needs to have approval expressed by patrons and colleagues.	-1.13	2
41	Believes that librarians should support the library whenever complaints are heard from outsiders.	-1.04	4

NOTE: This table is an abbreviated form of the thirty-seven consensus items and the average z score for each, including only the most accepted items (with a standard score of +1.00) and the most rejected items (with a score of -1.00).

items within the total group of thirty-seven consensus items. The three factors agree in accepting three ideal Type 3 items (items 28, 27, and 3), one ideal Type 2 item (item 25, "helping people"), one ideal Type 1 item (item 1, "questioning a patron"), and one Type 4 item (item 51, "all information is most accurate"). They most agree on rejecting six Type 4 items (32, 7, 52, 50, 47, and 41), three ideal Type 2 items (6, 10, and 54), and two ideal Type 1 items (item 19 and item 6).

Overall they are people-oriented, aware of the overall service goal of libraries (process of bringing information and books together with people), act in an ethical manner (questioning of patrons to ascertain actual needs and insuring most accurate information), and recognize the importance of interpersonal and communication skills.

Summary of the Q-Sorts Data

A detailed description of the three factor (Solution 3) analysis has already been done in this chapter; however, a summary will be presented here to highlight the major findings of the study.

It is important to note the large number of consensus items among all of the "best solutions" of the four separate factor analyses. The separate student, leader, and practitioner analyses produced one factor solutions as the "best solutions"--meaning that all fifty-four items were consensus items. The combined sample solution was a

three factor solution; the consensus items (37 items)

included three ideal Type 3 items:

> Want to be involved in bringing information and books together with people
> Feel that interpersonal and communication skills are as important as knowledge of libraries and books
> Feel that library staff members should act as a liaison to other libraries and agencies when not able to supply information

Also included are one ideal Type 1 item:

> Feel that it is important to question a patron to ascertain actual needs when faced with a reference question

and one ideal Type 2 item:

> Is especially interested in helping people

and one untyped item:

> Work to insure that all information given by library personnel is most accurate information available.

All of the above items were those consensus items receiving z scores of +1. The consensus items most rejected by this same group are also of interest; they included three ideal Type 2 items:

> Accept what patron initially says he wants when answering questions
> Feel that staff members should spend time exclusively on needs and services of current patrons
> Need to have approval expressed by patrons and colleagues

and two ideal Type 1 items:

> Believe in treating patrons with a business-like, reserved manner
> Feel that the best way to provide access for the most patrons is to follow circulation rules conscientiously

Six of the items most rejected are untyped items and

included:

Want to be in the quiet, peaceful atmosphere of books and libraries
Expect patrons to use reference tools by themselves
Take for granted that library personnel gives out accurate information to patrons
Will initiate new programs and services only after they have proved successful
Prefer to work in an orderly, predictable environment
Believe that librarians should support the library whenever complaints are heard from outsiders

In terms of the differences between groups (students, leaders, and practitioners)--the purpose of combining the three individual samples was to ascertain any differences--the following breakdown by group illustrates important differences:

	Factor I	Factor II	Factor III
Students	17(56.7)*	1 (3.3)	12(40.0)
Leaders	22(73.3)	3(10.0)	5(16.7)
Practitioners	14(46.7)	3(10.0)	13(43.3)
Totals	53(59.0)	7 (8.0)	30(33.0)

Obviously, in looking at this chart, the leader group is decidedly in Factor I (73 percent as compared to 17 percent in Factor II and 10 percent in Factor III). However, the student and practitioner groups are much more equally divided between Factor I (57 and 47 percent, respectively) and Factor III (40 and 43 percent, respectively). Factor II is rather unimportant in terms of the amount of variance being accounted for (8 percent) and the number of persons

*Figures in parentheses are percentages.

clustered in that dimension (seven in all or 8 percent).

In terms of the factor descriptions, the leaders can be said to be most characterized by the ideal Type 3, Open-Systems Type; especially aware of interpersonal and communication skills, as being totally community oriented including users' and nonusers' needs; are aware of the librarians' role as liaison to other sources of information; and are aware of the overall goal of libraries--bringing information and books together with people. They are also people-oriented, believe in relating in an open, personal manner--two characteristics of the ideal Type 2, the Semiprofessional Type. They, also, are very aware of the importance of accuracy of information, an untyped item.

Though the majority of the students and practitioners share these characteristics, another percentage of them fall within Factor III. The "unique" characteristics of this group are: people-oriented, especially "wanting to spend a majority of work time in working with people--both staff and patrons." They also share the awareness of the importance of accuracy of information with Factor I, indicating an overlapping of these factors. Besides their desire to work with people, they also differ from those in Factor I in their recognition of the importance of questioning patrons to ascertain needs.

The small group clustered in Factor II (10 percent of each of the practitioners and of the leaders, and 3 percent of the students) may be characterized as the most

mixed type. Drawing most of its characteristics from ideal Type 1, the Traditional-Professional Type, these persons are work-oriented, involved with reading professional materials, have an interest in building library collections, and in providing library instruction. Unlike the people in the other factors, the persons clustered in this factor are goal conscious in terms of planning services and programs. Like those in Factor III, they feel it is important to question a patron in assessing needs.

CHAPTER VII: NOTES

[1]Nie et al., SPSS, Statistical Package for the Social Sciences, p. 472.

[2]Richard L. Gorsuch, Factor Analysis (Philadelphia: W. B. Saunders Co., 1974), p. 212.

[3]Ibid., p. 207.

[4]Ibid., p. 280.

[5]Ibid., p. 184.

[6]Andrew L. Comrey, A First Course in Factor Analysis (New York: Academic Press, 1973), p. 229.

[7]Gorsuch, Factor Analysis, p. 152.

CHAPTER VIII

DEMOGRAPHIC AND ATTITUDINAL ANALYSES

A question posed in the current study was:

Are there major differences (intergroup and intragroup) between the sample groups in relationship to sex, age, marital status, library experience, specialization, and professional involvement? Do these variables seem to be related to the type of service orientation?

The previous chapter presented the factor analyses of service orientation. Now that the factor types have been tentatively identified and their relationships to the theoretical "ideal types" have been briefly discussed, this part of the data analyses will describe the samples in terms of the demographic variables (age, sex, marital status, library experience, current position) and the attitudinal variables (professional involvement, specialization, and type of library). The last section of the current chapter will analyze relationships between these variables (independent variables) and service orientation (dependent variable) as defined by the three factor types identified in the combined groups sample.

Demographic Variables

The demographic variables will be presented in table 21 (individual groups) and table 22 (combined sample group) in order to display an overview of the characteristics of the respondents.

Age

Overall, of all the respondents, there are 23.3 percent between the ages of 21 and 25; 21.1 percent between 26 and 30; 15.4 percent between 31 and 40; 7.7 percent between 41 and 45; 5.5 percent between 46 and 50; and 20.9 percent over 50 years of age. It should be noted that 5.6 percent of the participants did not respond to this question. Proportionately, the respondents' ages are the most heavy at the younger ages (21 to 30; 44.4 percent) and at the oldest age group (over 50 years; 20.9 percent). Between 31 to 50 years, there are only 28.6 percent which probably is not proportionate to the total library population. The student group, as would be expected, are the youngest group with two-thirds of them falling into the 21- to 25-year-old category. The practitioner group is the middle group, with somewhat less than one-half of the group falling in the 26- to 30-year-old category. However, 7 of the practitioners are over 40 years of age (23.3 percent). The leader group has over half of the group falling in the over 50 category, and none of the leaders are under 30.

Table 23 illustrates the variable of age in

TABLE 21

BREAKDOWN OF THE INDIVIDUAL SAMPLES
BY THE DEMOGRAPHIC VARIABLES
(N = 90)

	Students (N = 30)	Leaders (N = 30)	Practitioners (N = 30)
Sex:			
Male	6 (20.0)	17 (56.7)[a]	5 (16.7)
Female	24 (80.0)	13 (43.3)	25 (83.3)
Totals	30(100.0)	30(100.0)	30(100.0)
Age:			
Nonresponse	0	4 (13.3)	1 (3.3)
21-25	20 (66.6)	...	1 (3.3)
26-30	5 (16.6)	...	14 (46.6)
31-40	4 (13.3)	3 (10.0)	7 (23.3)
41-45	0	4 (13.2)	3 (10.0)
46-50	0	2 (6.6)[b]	3 (10.0)
Over 50	1 (3.3)	17 (56.6)	1 (3.3)
Totals	30 (99.8)	30 (99.7)	30 (99.8)
Marital status:			
Nonresponse	0	0	1 (3.3)
Single	20 (66.7)	9 (30.0)	8 (26.7)
Married	8 (26.7)	21 (70.0)	19 (63.3)
Divorced or separated	2 (6.7)	0	2 (6.7)
Totals	30(100.1)	30(100.0)	30(100.0)
Years of library experience:			
None	4 (13.3)	0	0
1-5	26 (86.6)	0	24 (79.9)
6-10	0	5 (16.6)	4 (13.3)
11-15	0	3 (9.9)	2 (6.6)
16-20	0	1 (3.3)	0
21-25	0	3 (10.0)	0
26-30	0	4 (13.2)[c]	0
Over 30	0	13 (43.2)	0
Totals	30 (99.9)	29 (96.2)	30 (99.8)
Experience type:			
None	4 (13.3)	0	0
Professional	1 (3.3)	30(100.0)	30(100.0)
Paraprofessional	6 (20.0)	0	0
Clerical	5 (16.7)	0	0
Student aid	13 (43.3)	0	0
Volunteer	1 (3.3)	0	0
Totals	30 (99.9)	30(100.0)	30(100.0)

TABLE 21--Continued

	Students (N = 30)	Leaders (N = 30)	Practitioners (N = 30)
Current position:			
Nonresponse	0	0	1 (3.3)
Chief librarian	0	11 (36.7)	2 (6.7)
Associate/assistant	0	2 (6.7)	0
Department/division head	0	5 (16.7)	6 (20.0)
Head of school/ department library	0	1 (3.3)	7 (23.3)
Library school	0	8 (26.7)	1 (3.3)
Public services	0	0	10 (33.3)
Technical services	0	0	3 (10.0)
Both public/technical	0	0	0
Administration	0	0	0
A-V specialist	0	0	0
Systems analyst	1 (3.3)	0	0
Other	8 (26.7)	3 (10.0)[d]	0
Nonprofessional	10 (33.3)	0	0
Unemployed	11 (36.7)	0	0
Totals	30(100.0)	30(100.0)	30(100.0)

[a]Numbers in parentheses are percentages.

[b]Over fifty category for the leader group includes the following breakdown:

51-55	3(10.0)
56-60	5(16.6)
61-65	6(20.0)
66-70	3(10.0)

[c]Two leaders have over forty years of experience.

[d]Some of these included semiretirement.

TABLE 22

BREAKDOWN OF THE COMBINED SAMPLE
BY THE DEMOGRAPHIC VARIABLES
(N = 90)

	Frequency	Percentages
Sex:		
Male	28	31.1
Female	62	68.9
Totals	90	100.0
Age:		
Nonresponse	5	5.6
21-25	21	23.3
26-30	19	21.1
31-40	14	15.4
41-45	7	7.7
46-50	5	5.5
Over 50	19	20.9
Totals	90	99.5
Marital status:		
Nonresponse	1	1.1
Single	37	41.1
Married	48	53.3
Divorced, separated	4	4.4
Totals	90	99.9
Years of library experience:		
None	5	5.6
1-5	50	55.6
6-10	9	10.0
11-15	5	5.5
16-20	1	1.1
21-25	3	3.3
26-30	4	4.4
Over 30	13	14.3
Totals	90	99.8
Experience type:		
None	4	4.4
Professional	61	67.8
Paraprofessional	6	6.7
Clerical	5	5.6
Student aid	13	14.4
Volunteer	1	1.1
Totals	90	100.0

TABLE 22--Continued

	Frequency	Percentages
Current position:		
Nonresponse	1	1.1
Chief librarian	13	14.4
Associate/assistant	2	2.2
Department/division head	11	12.2
Head of school/department library	8	8.9
Library school	9	10.0
Public services	10	11.1
Technical services	3	3.3
Systems analyst	1	1.1
Nonprofessional	10	11.1
Other	11	12.2
Unemployed	11	12.3
Totals	90	99.9

TABLE 23

AGE OF RESPONDENTS BY FACTOR TYPES

Factor Types	Age of Respondents (Frequency and Percentage)							
	0.0	21-25	26-30	31-40	41-45	46-50	Over 50	Row Totals
I	3	10	11	6	4	4	15	53
Open-Systems	3.3	11.1	12.2	6.6	4.4	4.4	16.5	58.9
II	0	1	0	2	2	0	2	7
Mixed-Type (Traditional and Open-Systems)	0.0	1.1	0.0	2.2	2.2	0.0	2.2	7.8
III	2	10	8	6	1	1	2	30
People-Oriented	2.2	11.1	8.8	6.6	1.1	1.1	2.2	33.3
Totals	5	21	19	14	7	5	19	90
	5.6[a]	23.3	21.1	15.4	7.7	5.5	20.9	100.0

[a]Total respondents, not row nor column totals.

relationship to the factor scores. In terms of factor relationships, the younger people (ages 21 through 30) seemed almost equally divided between Factors I and III. The older one becomes, however, the proportion changes: those over fifty years old are almost exclusively in Factor I, 16.5 percent (in comparison to 2.2 percent in each of Factors II and III). This would indicate that age seems to influence factor type.

Sex

There are 31.1 percent males to 68.9 percent females in the total proportion of respondents. This is a much greater ratio of males to females than in the librarian population at large.* It is obvious that the leader group distorts the true proportion. In the leader group, there are 57 percent males and 43 percent females. A truer proportion is seen in the student group (20 percent male to 80 percent female) and the practitioner group (17 percent male to 83 percent female).

Table 24 indicates that both males (21.1 percent) and females (37.8 percent) are highly represented in Factor I. However, there is a much larger percentage of females than males making up Factor III (26.7 percent female and 6.7 percent male). There may be two types of females being

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*Librarianship as a profession is 84 percent female, according to the U.S. Department of Labor Bureau of Labor Statistics, Library Manpower: A Study of Demand and Supply (Washington, D.C.: U.S. Government Printing Office, 1975).

examined; so sex itself may not be an influence on factor type.

Marital Status

Of the total respondents, 41.1 percent are single, 53.3 percent are married, and 4.4 percent are divorced or separated. There were 1.1 percent who did not respond to this question. The student group has the largest singles group, 67 percent, as compared to the leader group, 30 percent, and the practitioner group, 27 percent. Table 25 compares the demographic variable, marital status, by factor scores. There does not seem to be any differentiation on the basis of marital status in terms of factor types. Factor I is made up of 23.3 percent single respondents, 32.3 percent married, and 3.3 percent divorced or separated. Factor III is comprised of 13.3 percent single respondents, 17.8 percent married, and no respondents divorced or separated.

Library Experience

Two variables represent library experience: the number of years of experience and the type of experience (professional, paraprofessional, etc.). The combined group has 55.6 percent of the respondents working from 1 to 5 years; 10 percent, 6 to 10 years; 14.3 percent working over 11 to 30 years; and 14.3 percent working over 30 years. Counting "all kinds of experience," it was found that approximately 87 percent of the students have between

TABLE 25

MARITAL STATUS BY FACTOR TYPES

Factor Types	Marital Status (Frequency and Percentage)				
	0.0	Single	Married	Divorced or Separated	Totals
I	0	21	29	3	
Open-Systems	0.0	23.3	32.2	3.3	53.0
II	0	4	3	0	
Mixed-Type	0.0	4.4	3.3	0.0	7
III	1	12	16	1	
People-Oriented	1.1	13.3	17.8	1.1	30.0
Totals	1	37	48	4	90
	1.1[a]	41.1	53.3	4.4	100.0

[a]Column percentage totals.

one and five years of experience; 80 percent of the practitioners also have one to five years of experience; and none of the leaders are in that category. Fifty-six percent of the leaders have over thirty years of experience. Only 6 percent of all the respondents have had no library experience.

Two tables illustrate the experience variable as related to factor type: table 26 shows the number of years of experience while table 27 shows the type of experience.

Of those respondents with one to five years of experience, the majority of respondents, 33 percent are in Factor I while 21.1 percent are in Factor III. Of those with the most experience (over thirty years), almost all are in Factor I (11.9 percent) with only 2.2 percent in Factor II, and 1.1 percent in Factor III. Those with no experience are almost equally divided between Factor I (2.2 percent) and Factor III (3.3 percent). Whether the age or years of experience is really the influencing variable would be difficult to ascertain.

In terms of type of experience (professional, paraprofessional, etc.), all types except volunteers are largely in Factor I: professional (41.4 percent), paraprofessional (4.4 percent), clerical (3.3 percent), and student aids (8.9 percent). However, Factor III has 20 percent of the professional group, 1.1 percent of the paraprofessionals, 2.2 percent of clericals, and 5.6 percent of the student aids group.

TABLE 26

YEARS OF EXPERIENCE BY FACTOR TYPES

Factor Types	Years Experience (Frequency and Percentage)								
	None	1-5	6-10	11-15	16-20	21-25	26-30	Over 30	Row Totals
I	2	28	5	1	1	2	4	10	53
Open-Systems	2.2	33.0	5.5	1.1	1.1	2.2	4.4	11.0	58.9
II	0	3	1	1	0	0	0	2	7
Mixed-Type	0.0	3.3	1.1	1.1	0.0	0.0	0.0	2.2	7.7
III	3	19	3	3	0	1	0	1	30
People-Oriented	3.3	21.1	3.3	3.3	0.0	1.1	0.0	1.1	33.3
Totals	5	50	9	5	1	3	4	13	90
	5.6[a]	55.6	10.0	5.5	1.1	3.3	4.4	14.2	100.0

[a]Column percentage totals.

TABLE 27

EXPERIENCE TYPE BY FACTOR TYPES

Factor Types	Experience Type (Frequency and Percentage)						
	0.0	Profes-sional	Parapro-fessional	Cleri-cal	Student Aid	Volunteer	Row Totals
I	1	37	4	3	8	0	53
Open-Systems	1.1	41.1	4.4	3.3	8.9	0.0	58.9
II	0	6	1	0	0	0	7
Mixed-Type	0.0	6.7	1.1	0.0	0.0	0.0	7.8
III	3	18	1	2	5	1	30
People-Oriented	3.3	20.0	1.1	2.2	5.6	1.1	33.3
Totals	4	61	6	5	13	1	90
	4.4[a]	67.8	6.7	5.6	14.4	1.1	100.0

[a]Column percentage totals.

Current Position

Of the total respondents, the largest number of them, 14.4 percent are chief librarians; 12.3 percent are unemployed; 12.2 percent are department or division heads; while another 12.2 percent are "other." Eleven percent are involved in public services while another 11 percent are working in a nonprofessional position. Ten percent are involved in library education. The smallest percentages are in systems analysis positions (1.1 percent), associate or assistant librarian positions (2.2 percent), and technical services positions (3.3 percent). No data on students are included here. In terms of practitioners, only 7 percent are chief librarians as compared to 37 percent of the leaders. The largest number of practitioners are in public services (33.3 percent) while none of the leaders are in public services. The next largest percentage of practitioners are in middle management positions, department or division heads (20 percent), and head of school or department library (23 percent), for a total of 43 percent.

The leaders are mostly chief librarians (37 percent), or are involved in library education (27 percent), with the rest in middle management: in associate or assistant positions (7 percent), department or division heads (17 percent), and heads of school or department libraries (3 percent).

In terms of the relationship of their current position to factor types, Factor I is largely made up of:

department or division heads (8.9 percent), library school people (8.9 percent), "other" (8.9 percent), and chief librarians (7.8 percent). It is interesting to note that the largest group (chief librarians) are quite divided in terms of factor types: 7.8 percent in Factor I, 3.3 percent in Factor II, and 3.3 percent in Factor III. The most similar group (department or division heads) are divided between Factor I (8.9 percent) and Factor III (3.3 percent), as are the associate or assistant librarians group (1.1 percent) in each of the Factors I and III.

Only the public services group (6.7 percent in Factor III compared to 3.3 percent in Factor I) and the technical services group (2.2 percent in Factor III compared to 1.1 percent in Factor I) have a larger proportion in Factor III. The technical services total (only three respondents) is too small to have any meaning. However, the public services group with a total of six respondents might be a more credible number. Table 28 illustrates the relationship of position with factor types.

Attitudinal Variables

The attitudinal variables will be presented in table 29 (individual groups) and table 30 (combined sample group) to provide an overview of these characteristics of the respondents.

TABLE 28

CURRENT POSITION BY FACTOR TYPES

Factor Types		Current Position (Frequency and Percentage)												
		Chief Librarian	Associate or Assistant Librarian	Department or Division Head	Head of School or Department Library	Library School	Public Service	Technical Service	Systems Analyst	Unemployed	Nonprofes-sional	Other	Row Totals
I	0	7	1	8	5	8	3	1	1	5	6	8	53.0
Open-Systems	0.0	7.8	1.1	8.9	5.6	8.9	3.3	1.1	1.1	5.6	6.7	8.9	58.9
II	0	3	0	0	2	0	1	0	0	0	1	0	7
Mixed-Type	0.0	3.3	0.0	0.0	2.2	0.0	1.1	0.0	0.0	0.0	1.1	0.0	7.8
III	1	3	1	3	1	1	6	2	0	6	3	3	30
People-Oriented	1.1	3.3	1.1	3.3	1.1	1.1	6.7	2.2	0.0	6.7	3.3	3.3	33.3
Totals	1	13	2	11	8	9	10	3	1	11	10	11	90
	1.1[a]	14.4	2.2	12.2	8.9	10.0	11.1	3.3	1.1	12.3	11.1	12.2	100.0

[a]Column percentage totals.

TABLE 29

BREAKDOWN OF THE INDIVIDUAL SAMPLES
BY THE ATTITUDINAL VARIABLES
(N = 90)

	Students	Leaders	Practi-tioners
Type of library:			
School	4 (13.3)[a]	4 (13.3)	7 (23.3)
Public	8 (26.7)	12 (40.0)	12 (40.0)
Academic	10 (33.3)	7 (23.3)	5 (16.7)
Special	6 (20.0)	2 (6.7)	5 (16.7)
State	0	2 (6.7)	0
None specified	2 (6.7)	3 (10.0)	1 (3.3)
Totals	30(100.0)	30(100.0)	30(100.0)
Specialization:			
School libraries	4 (13.3)	3 (10.0)	6 (20.0)
Work with children and/or young adults	2 (6.7)	5 (16.7)	5 (16.7)
Reference work	11 (36.7)	0	11 (36.7)
Administration	3 (10.0)	12 (40.0)	1 (3.3)
Library education	0	5 (16.7)	0
Cataloging/technical services	1 (3.3)	1 (3.3)	3 (10.0)
Information science	2 (6.7)	0	1 (3.3)
"Special" clients	2 (6.7)	1 (3.3)	2 (6.7)
Networks/systems	0	3 (10.0)	0
Audio-visual	5 (16.7)	0	1 (3.3)
Totals	30(100.1)	30(100.0)	30(100.0)
Professional involvement:			
ALA member	1 (3.3)	30(100.0)	12 (40.0)
AASL	0	7 (23.3)	3 (10.0)
ACRL	0	11 (36.7)	1 (3.3)
AHIL	0	6 (20.0)	0
ASLA	0	3 (10.0)	0
CSD	0	6 (20.0)	3 (10.0)
ISAD	0	7 (23.3)	0
LAD	0	9 (30.0)	0
LED	0	9 (30.0)	0
PLA	0	13 (43.3)	0
RASD	0	7 (23.3)	1 (3.3)
RTSD	0	9 (30.0)	1 (3.3)
YASD	0	6 (20.0)	0
ALA president	0	2 (6.7)	0
ALA divisional president	0	24 (80.4)	0
ALA award winner	0	4 (13.3)	0

TABLE 29--Continued

	Students	Leaders	Practitioners
Other organizations:			
ARL member	...	1 (3.3)	1 (3.3)
ASIS	...	6 (20.0)	0
SLA	...	9 (30.0)	3 (10.0)
AECT	...	4 (13.3)	2 (6.7)
State library organization	...	19 (63.3)	8 (26.7)
Other work-related organizations	...	16 (53.3)	12 (40.0)
AALS	0	4 (13.3)	0
Part-time employment		1 (3.3)	
Unemployed			3 (10.0)

[a]Numbers in parentheses are the percentage figures.

TABLE 30

BREAKDOWN OF THE COMBINED SAMPLE
BY THE ATTITUDINAL VARIABLES
(N = 90)

	Frequency	Percentages
Type of library:		
School	15	16.7
Public	32	35.6
Academic	22	24.4
Special	13	14.4
State	2	2.2
None specified	6	6.6
Totals	90	99.9
Specialization:		
School libraries	13	14.4
Work with children and/or young adults	12	13.3
Reference work	22	24.4
Administration	16	17.8
Library education	5	5.6
Cataloging/technical services	5	5.6
Information science	3	3.3
"Special" clients	5	5.6
Networks/systems	3	3.3
Audio-visual	6	6.7
Totals	90	100.0
Professional involvement:		
ALA member	43	47.8
AASL	10	11.1
ACRL	12	13.3
AHIL	6	6.7
ASLA	3	3.3
CSD	9	10.0
ISAD	7	7.8
LAD	9	10.0
LED	9	10.0
PLA	13	14.4
RASD	8	8.9
RTSD	10	11.1
YASD	6	6.7
ALA president	2	2.2
ALA divisional president	24	26.4
ALA award winner	4	4.4
None of above	60	66.6

TABLE 30--Continued

	Frequency	Percentages
Other organizations:		
ARL member	2	...
ASIS	6	...
SLA	12	...
AECT	6	...
State library organization	27	...
Other work-related organizations	28	...
AALS	4	...
Part-time employment	20	22.2
Unemployed	...	...

Professional Involvement

Overall, 48 percent, or nearly half, of all the respondents are members of the American Library Association (ALA). Memberships in the divisions of the ALA are not as numerous as in the parent organization, and are about equally distributed among the total respondents--approximately 3 to 14 percent belong to each division. Comparing the three sample groups, a completely different picture emerges. Only one student belonged to the ALA but not to any of the divisions, twelve practitioners (or 40 percent) belong to ALA, with three (10 percent) to AASL, three (10 percent) to CSD, and one (or 3.3 percent) belonging to each of ACRL, RASD, and RTSD. Of course, all of the leaders are members of ALA (chosen due to leadership within ALA). The largest number of leaders belong to PLA, thirteen or 43 percent; the next largest to ACRL, eleven or 37 percent, followed by LAD, LED, and RTSD, with nine leaders or 30 percent to each of these. The smallest number represented is to ASLA (three leaders or 10 percent) and next AHIL, CSD, and YASD (six leaders or 20 percent).

Aside from ALA affiliation, no students belong to any other library organization, and very few of the practitioners do: twelve or 40 percent to other work-related organizations, eight or 27 percent to state library organizations, three or 10 percent to SLA, two or 7 percent to AECT, and one or 3 percent to ARL. The leaders make up almost all of this group: nineteen or 63 percent belong

to state library organizations, sixteen or 53 percent to other work-related organizations, nine or 30 percent to SLA, six or 20 percent to ASIS, four or 13 percent to AECT and AALS, and one or 3 percent to ARL.

Membership in professional associations as related to factor types is broken down into two tables. Table 31 shows the affiliations of all the respondents by the major professional organizations in the field. All of the respondents belonging to American Association of Library Schools (AALS), and all of those belonging to American Society for Information Science (ASIS) are in Factor I; the majority of those belonging to ALA (67.4 percent), Special Libraries Association (SLA) (76.9 percent), Association for Educational Communication and Technology (AECT) (85.7 percent), state library organizations (66.77 percent), and other work organizations (61.1 percent) also are in Factor I. However, a rather substantial number of respondents belonging to ALA belong to Factor II (14.0 percent) and to Factor III (18.6 percent). One-third of the respondents whose libraries claim membership in the Association of Research Libraries (ARL) (33.3 percent) can be found in Factor III. Some SLA member respondents are in Factor III (15.4 percent) and in Factor II (7.7 percent). Those belonging to "other work organizations" have one-third of the respondents in Factor III. Many of those belonging to "state library organizations" (23.3 percent) are also in Factor III.

Table 32 shows the affiliation of the respondents

TABLE 31

PROFESSIONAL GROUP AFFILIATIONS OF RESPONDENTS BY FACTOR TYPES

Factor Types	Professional Groups (Frequency and Percentage)							
	ALA	AALS	ARL	ASIS	SLA	AECT	State Library Organizations	Other Work Organizations
I	29	5	2	7	10	6	20	22
Open-Systems	67.4	100.0	66.7	100.0	76.9	85.7	66.7	61.1
II	6	0	0	0	1	0	3	2
Mixed-Type	14.0	0.0	0.0	0.0	7.7	0.0	10.0	5.6
III	8	0	1	0	2	1	7	12
People-Oriented	18.6	0.0	33.3	0.0	15.4	14.3	23.3	33.3
Totals	43	5	3	7	13	7	30	36
	100.0[a]	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Column totals.

TABLE 32

ALA AFFILIATION OF RESPONDENTS BY FACTOR TYPES

Factor Types	ALA Affiliations (Frequency and Percentage)												
	ALA	AASL	ACRL	AHIL	ASLA	CSD	ISAD	LAD	LED	PLA	RASD	RTSD	YASD
I	29	6	8	4	2	8	5	7	9	10	4	6	3
Open-Systems	67.4	60.0	66.7	66.7	66.7	88.9	71.4	77.8	100.0	76.9	50.0	60.0	50.0
II	6	1	3	0	0	0	0	0	0	0	2	2	0
Mixed-Type	14.0	10.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	20.0	0.0
III	8	3	1	2	1	1	2	2	0	3	2	2	3
People-Oriented	18.6	30.0	8.3	33.3	33.3	11.1	28.6	22.2	0.0	23.1	25.0	20.0	50.0
Totals	43	10	12	6	3	9	7	9	9	13	9	10	6
	100.0[a]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a]Column totals.

to ALA and its divisions compared to factor scores. One hundred percent of LED respondents are in Factor I. The largest number of the following respondent groups are also in Factor I: AASL, ACRL, AHIL, ASLA, CSD, ISAD, LAD, PLA, RASD, and RTSD. Only YASD respondents are equally split between Factor I and Factor III. (This was also the case in the leader group's affiliates of YASD.) As compared to the leader group's breakdown, AASL members are now partly found in Factor III (30.3 percent) and an even smaller part in Factor II (10.0 percent). Approximately one-fourth of the respondents in AHIL, ASLA, LAD, and PLA are found in Factor III. Approximately one-third of the respondents in ISAD are found in Factor III. RASD and RTSD have equal proportions in Factor II and III.

Specialization

The totals in each specialty area are interesting in themselves. The specialty areas are ranked in table 33. Factor types by specialization (table 34) is one of the most interesting results. In terms of specialization in relation to factor types, Factor I is predominantly made up of those librarians specializing in: school libraries and administration; Factor III: reference (13.3 percent) predominantly, work with children (5.6 percent) and administration (5.6 percent) at a much lower percentage. Only those specializing in cataloging and information science are predominantly in Factor III.

TABLE 33

SPECIALIZATIONS OF THE SAMPLE GROUPS

	Combined Group (Percentage)
Reference	24.4
Administration	17.8
School libraries	14.4
Work with children	13.3
Audio-visual	6.7
Education	5.6
Cataloging	5.6
Special clients	5.6
Information science	3.3
Systems/networks	3.3
Total	100.0

Students (Percentage)		Leaders (Percentage)		Practitioners (Percentage)	
Academic	33.3	Public	40.0	Public	40.0
Public	26.7	Academic	23.3	School	23.3
Special	20.0	School	13.3	Academic	16.7
School	13.3	None specified	10.0	Special	16.7
None specified	6.7	Special	6.7	None specified	3.3
Total	100.0	State	6.7	Total	99.7
		Total	100.0		

TABLE 34

SPECIALIZATION BY FACTOR TYPES

Factor Types	Specializations (Frequency and Percentage)										
	A-V	School Library	Work with Children	Reference Work	Administration	Education	Cataloging	Information Science	"Special" Clients	Networks/ Systems	Row Totals
I	5	9	7	8	9	5	2	1	4	3	53
Open-Systems	5.6	10.0	7.8	8.9	10.0	5.6	2.2	1.1	4.4	3.3	58.9
III	1	2	0	2	2	0	0	0	0	0	7
Mixed-Type	1.1	2.2	0.0	2.2	2.2	0.0	0.0	0.0	0.0	0.0	7.7
III	0	2	5	12	5	0	3	2	1	0	30
People-Oriented	0.0	2.2	5.6	13.3	5.6	0.0	3.3	2.2	1.1	0.0	33.3
Totals	6	13	12	22	16	5	5	3	5	3	90
	6.7	14.4	13.3	24.4	17.8	5.6	5.6	3.3	5.6	3.3	100.0

In looking at specialties and where they fall in terms of factor scores, we find the following:

Factor I	Percentage
School libraries	10.0
Administration	10.0
Work with children	7.8
Audio-visual	5.6
Education	5.6
Special clients	4.4
Systems/networks	3.3

Factor II

No specialty was placed highest on this factor

Factor III	
Reference	13.3
Cataloging	3.3
Information science	2.2

Type of Library

Overall, the largest number of respondents, 36 percent, are associated with public libraries. Academic libraries rank second (24 percent), school libraries third (17 percent), and special libraries fourth (14 percent). In terms of the sample groups, students most associated themselves with academic (33 percent), public (27 percent), and special libraries (20 percent), while practitioners are largely associated with public (40 percent). Only 23

percent of the practitioners name school libraries, while 17 percent name academic and special libraries. Like the practitioners, 40 percent of the leaders are associated with public libraries. Respondents associated with academic libraries make up 23 percent, with school libraries 13 percent, and with special and state libraries 6.7 percent. Ten percent did not specify a type of library.

Table 35 illustrates the breakdown of the relationship between factor type and type of library. Factor I is largely made up of the majority of those respondents in public libraries (23.3 percent) and school libraries (11.1 percent). The majority of special librarians are also in Factor I (8.9 percent). Factor II has a small number of school librarians (3.3 percent) and of academic librarians (3.3 percent). The largest number of the academic librarians, however, are in Factor III (11.1 percent) as compared to Factor I (10.0 percent) and Factor II (3.3 percent). Also in Factor III can be found approximately one-fourth of the public librarians (12.2 percent) as compared to Factor I (23.3 percent), as well as a substantial number of the special librarians (5.6 percent) as compared to Factor I (8.9 percent). State librarians are equally divided between Factors I and III--1.1 percent. It would appear that experience in a particular type of library does influence a person's factor type.

TABLE 35

TYPE OF LIBRARY BY FACTOR TYPES

Factor Types	Experience Type (Frequency and Percentage)							
	0.0	School	Public	Academic	Special	State	None	Row Totals
I	3	10	21	9	8	1	1	53
Open-Systems	3.3	11.1	23.3	10.0	8.9	1.1	1.1	58.9
II	0	3	0	3	0	0	1	7
Mixed-Type	0.0	3.3	0.0	3.3	0.0	0.0	1.1	7.8
III	0	2	11	10	5	1	1	30
People-Oriented	0.0	2.2	12.2	11.1	5.6	1.1	1.1	33.3
Totals	3	15	32	22	13	2	3	90
	3.3	16.7	35.6	24.4	14.4	2.2	3.3	100.0

Leader group

Table 36 gives a breakdown of the leader group's affiliations: divisions or award winner category in relation to their factor scores.

The respondents from the following divisions were all included in Factor I: ALA, AHIL, CSD, ISAD, LED, PLA, and most of the award winners.

No group was totally in Factor II. Only YASD respondents were totally in Factor III.

The following groups were evenly distributed between Factors I and II: AASL, ACRL, and RASD.

The following groups were evenly distributed between Factors I and III: ASLA, LAD, and RTSD. A large number of award winners were also in Factor III.

In terms of the meaning of this distribution, it would seem that seven of the thirteen groups, those which belong within Factor I, subscribe to the open type of service. YASD respondents as the only group to fall completely within Factor III can be characterized as people-oriented. AASL, ACRL, and RASD respondents fall equally within Factor I, the open type, and Factor II, the mixed, traditional, and open type.

ASLA, LAD, and RTSD fall equally into the open type and the people-oriented type. RTSD falling here might be the biggest surprise in terms of their technical interests. Again only two RTSD respondents make this meaningless.

TABLE 36

LEADER GROUP; ALA AFFILIATION BY FACTOR TYPES

Factor Types	ALA Affiliations (Frequency and Percentage)														
	ALA	AASL	ACRL	AHIL	ASLA	CDS	ISAD	LAD	LED	PLA	RASD	RTSD	YASD	AWARDS	NONE
I	2	1	1	2	1	2	2	1	2	2	1	1	0	4	17
Open-Systems	2.2	1.1	1.1	2.2	1.1	2.2	2.2	1.1	2.2	2.2	1.1	1.1	0.0	4.4	18.9
II	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1
Mixed-Type	0.0	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	1.1
III	0	0	0	0	1	0	0	1	0	0	0	1	2	0	12
People-Oriented	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0	1.1	2.2	0.0	13.3
Totals	2	2	2	2	2	2	2	2	2	2	2	2	2	4	30
	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	4.4	

This set of data on the leaders, due to such small numbers in each subset, is questionable.

Summary

As presented in chapter VII, the factor analyses resulted in three factor types: Factor I, the Open-Systems Type; Factor II, a mixed type with more items of the Traditional-Professional Type; and Factor III, the People-Oriented Type.

The demographic variables that seemed most related to factor types appeared to be age, years of experience, and current position. The older the respondents, the more they clustered into Factor I, while the younger respondents are about equally divided between Factors I and III. The older respondents identified with the Open-Systems Type, while the younger respondents identified with either the Open-Systems Type or the People-Oriented Type. The more years of experience a respondent has, the more they identified with the open-systems factor while the less experienced respondents are about equally divided between Factors I and III. Obviously, the two variables of age and years of experience are related to each other.

Marital status, sex, and type of experience did not seem to affect the factor type. However, there may be major differences between groups of females as reflected in a rather large number of females identifying with both Factors I and III.

The attitudinal variables of specialization and type of library seemed to be related to factor types. School librarians, administrators, library educators, those working with children and with audio-visual materials clustered mainly in Factor I; while those in cataloging, information science, and reference clustered mainly within Factor III. Both specialization and type of library are related variables.

Professional involvement is the most nebulous variable to interpret in this part of the analysis. Library educators (AALS and LED members) are almost totally in Factor I, as are the majority of the special librarians (SLA), media people (AECT), information scientists (ASIS), and school librarians (AASL). Young adult librarians (YASD) are divided equally between Factors I and III; meaning that they identified with both open-systems and people-oriented factors.

Overall, the demographic and attitudinal relationships were not clearly delineated in the current study. Due to the lack of a sufficient sample size and the lack of random sampling, it was not appropriate to apply more rigorous statistical tests. The percentages reported are sometimes misleading due to the small numbers and therefore are interpreted cautiously. However, the investigator can speculate on possible meanings and significance. If the Open-Systems Type of person is the desired one for the profession, continuing education programs might want to

consider how best to include elements of this in program planning. If age and years of experience do not preclude change and/or open-systems thinking, as indicated in the current study, continuing education might be a motivating force in moving toward this philosophy for the profession.

If sex is also not a limiting factor, as suggested in this study, the myth that an occupation dominated by women (as the library field is) leads to the "feminization" of an occupation may be dispelled.

Another important finding--that the open-systems factor is more significant than the people-oriented factor --might cause the "people-oriented" stereotype of librarians to be questioned.

CHAPTER IX

TESTING THE SERVICE ORIENTATION SCALES

In order to test the conceptual base of the study--the three theoretical (ideal) types of service orientation --it was decided to submit the items to a factor analysis. This would determine whether a scale of service orientation is formed by the set of items formulated and used in the Q-sorts. The empirical data on service orientation would either support or not support the conceptual base dependent on these results. The ideal and normal procedure would be to submit the total pool of items, fifty-four items, to a factor analysis; however, this was not possible with the small sample used in the current study. The acceptable sample size would be a minimum of 270 persons, and ideally, 540 persons; this would meet the minimum standard of five to ten respondents per item. This is a limitation of the study, and means that it is not possible to determine the extent of overlap of factors.

For an initial effort in ascertaining the adequacy of the pool of items for measuring service orientation, each subset of items (those representing each of the three ideal types) was submitted to a separate factor analysis as a test of that ideal type. The procedure chosen for

this process has been explained in the data analysis section of chapter IV. Each factor analysis conducted on each of the ideal types (set of items) will support the validity of the scales used, and also aid in creating new scales of greater "purity" than those conceptually derived. One would expect all of the items to load on one factor if the ideal procedure had been followed, and if the items being analyzed really tap a service orientation; within each separate analysis of the ideal type items, one would expect each of these to result in a one factor solution. This could only occur if the three ideal types do exist in reality which is unlikely; ideal types, by definition, are never found in pure form in reality.

There are several factor models in usage; the one used in the QUANAL computer program, used for the analyses of the Q-sorts data, is called principal components factoring which is concerned with patterning all the variation in a set of variables, whether common or unique. In this model, the correlation matrices always have 1.00 (unity), or the self-correlation of a variable in the principal diagonal. The SPSS factor analysis computer program being used for testing the theoretical types, however, uses principal factor analysis, often called common factor analysis. In this model, the principal diagonal will contain communality estimates. These measure the variation of a variable in common with all the others.

Initially, each of the three sets of service

orientation items representing the three ideal types, along with the untyped items (Type 4), were submitted to an oblique rotation during factor analysis. An oblique rotation was first tried due to the control of the degree of correlation that this rotational method allows. Due to the low correlation coefficients found between the factors delineated in the oblique solution, it was determined that the factors are relatively independent. It was then decided to submit the sets of items to the varimax, or orthogonal rotation pattern. In an orthogonal rotation, the criteria restrict the transformation matrix so that the factors are uncorrelated. This rotation process attempts to maximize the variance across all the factors in the matrix. In this attempt to discover factors for the purpose of testing each of the ideal types, it was considered important to simplify each factor. The interest was in learning more about the factors rather than about the variables--the opposite of the factor analysis done to determine the service orientation of the groups of librarians (the Q analysis).

Ideal Type 1 Analysis: Traditional-Professional Type

Thirty items including nineteen of the ideal Type 1 items and eleven of the untyped items (Type 4) were submitted to a factor analysis. A total of twenty-four items loaded significantly (+ or - .40) including fourteen from the original ideal Type 1 items and ten from the untyped

items. Table 37 shows the factor loadings of all of these items with those loading significantly underlined. The variables (items) in each column and the columns themselves are ordered according to the importance of the variable, i.e., the highest loading of absolute values. Ideal Type 1 items 36 and 49 both load positively on one factor and seem to constitute a risk-taking attitude and a support of intellectual freedom. Items 37 and 43, both loading on one factor, relate to professional involvement. All of the other factors are either unique (only one item loads significantly on each factor) or are a mix of ideal Type 1 items and untyped items.

The fourteen items of ideal Type 1 loading significantly are:

1 Feels that it is important to question a patron to ascertain actual needs when faced with a reference question.

13 Prefers to make decisions about how own work is to be performed.

20 Believes materials should be organized following standards of the profession, i.e., classification, filing, subject heading rules, and schemes.

29 Has a special interest in preserving the record of knowledge for the future.

30 Is especially interested in building library collections.

31 Is especially interested in introducing computer and other technological systems into the library setting.

33 Is especially interested in working with a particular subject area.

34 Actively participates in national library and information professional organizations.

TABLE 37

FACTOR ANALYSIS OF SERVICE SCALES: IDEAL TYPE 1[a]

Variables	Ideal Types 1	Ideal Types 4	Factors I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
47		X	659	-177	-075	-243	143	065	-254	-031	027	029	145	-034
32		X	520	-027	022	031	-056	-007	029	127	027	061	031	101
33	X		518	169	138	101	-046	-048	162	-002	-006	024	111	062
36	X		006	744	045	-058	-021	007	-014	-059	026	-020	133	-024
49	X		045	513	-211	208	005	-210	-017	-070	-135	143	-001	-038
37	X		091	067	591	-079	247	063	068	054	009	145	142	-033
43	X		037	-119	583	155	145	008	-090	-120	-078	005	-142	123
52		X	-079	012	-047	-528	110	-190	-076	116	-114	004	-150	067
38	X		-033	026	068	439	173	-059	087	048	-007	115	-163	-047
31	X		-033	053	-024	432	231	-121	-148	035	-156	103	091	320
34	X		-024	-056	224	243	666	-060	-113	-009	180	073	-111	-025
39		X	-030	-082	344	176	566	-079	-113	-071	143	-004	-063	-093
13	X		-050	-053	-103	025	-503	-008	-072	003	-018	060	009	-212
50		X	-047	-061	025	112	086	734	018	-024	-030	023	136	079
22		X	040	-029	016	-111	-094	442	052	250	109	-047	-141	057
1	X		030	042	-044	054	-039	040	585	-084	044	-033	177	-014
20	X		212	-060	-075	-090	121	129	-093	719	-009	-089	078	178
35	X		-047	-118	223	-032	006	-145	-135	228	475	-123	001	-154
7		X	-057	018	087	-007	-043	-074	-038	038	-422	009	-007	-070
41		X	-124	-045	-075	-078	008	008	033	061	044	-670	-061	014
30	X		302	121	073	-058	-142	164	039	186	-050	117	473	066
29	X		324	038	-032	145	034	-083	122	042	-002	-004	456	-130
51		X	011	146	-069	-031	014	053	153	-168	337	110	431	051
2		X	111	-021	029	-018	-000	122	006	106	045	-019	-018	422

NOTE: All numbers in the factor columns are decimal numbers; the decimal points have been eliminated.

[a]+ or - 400 has been selected as a significant loading. These are underlined.

35 Tries to implement goals and standards of the profession into the local work situation.

36 Does not believe in removing a book or magazine title considered important for the collection when a complaint is made.

37 Reads current professional journals and books regularly to keep up-to-date.

38 Feels an obligation to recruit qualified individuals into the library and information field.

43 Believes it is essential to take courses, attend workshops, and meetings for self-improvement.

49 Will initiate new program considered important even if potentially controversial.

The ten items loading significantly which are the untyped items are:

2 Feels it is important to provide instruction.

7 Expects patrons to use reference tools by themselves.

22 Believes that programs should be provided for groups with special needs only if additional resources are available.

32 Wants to be in the quiet, peaceful atmosphere of books and libraries.

39 Actively participates in local and/or state library and information professional organizations.

41 Believes that librarians should support the library whenever complaints are heard from outsiders.

47 Prefers to work in an orderly, predictable environment.

50 Will initiate new programs and services only after they have proved successful in other libraries.

51 Works to insure that all information given by library personnel is the most accurate information available.

52 Takes for granted that library personnel gives out accurate information to patrons.

Ideal Type 2 Analysis: Semiprofessional Type

Twenty-two items were included in this factor analysis: 11 of the ideal Type 2 items and 11 of the untyped items. Results showed significant loadings on 13--8 of the ideal Type 2 items and 5 of the untyped items. Table 38 shows the factor loadings of these items with the significant loadings underlined. The significant items include: the 8 items of ideal Type 2:

6 Accepts what patron initially says he wants when answering reference questions.

10 Feels that staff members should spend time exclusively on needs and services of current patrons.

12 Believes libraries should be under the control of a policy-making board.

18 Believes that materials should be organized in ways users will find the most convenient.

21 Attempts to determine satisfaction of users with current services.

25 Is especially interested in helping people.

26 Would like to spend a majority of their time in working with people--both staff and patrons.

54 Needs to have approval expressed by patrons and colleagues.

and the five items of the untyped items:

22 Believes that programs should be provided for groups with special needs only if additional resources are available.

32 Wants to be in the quiet, peaceful atmosphere of books and libraries.

47 Prefers to work in an orderly, predictable environment.

50 Will initiate new programs and services only after they have proved successful in other libraries.

TABLE 38

FACTOR ANALYSIS OF SERVICE SCALES: IDEAL TYPE 2[a]

Variables	Ideal Types 2	Ideal Types 4	Factors I	II	III	IV	V	VI	VII	VIII	IX
26	X		550	040	234	-230	-154	194	060	259	-269
25	X		467	034	081	-031	-086	-177	051	133	017
50		X	008	584	-098	-003	-021	073	-091	-025	-125
22		X	015	535	-060	139	057	-044	-010	182	174
10	X		-024	476	316	-124	-053	-079	232	-077	195
6	X		049	-019	441	104	052	023	-031	-001	-009
51		X	-115	026	-421	032	053	-018	295	-145	-235
12	X		118	-115	065	654	-214	038	-029	-104	048
47		X	-109	022	134	005	654	059	074	072	-140
32		X	022	043	-093	-174	581	-006	-028	-051	208
54	X		-047	017	031	063	034	730	020	-025	009
18	X		098	036	-082	-062	060	053	657	-047	045
21	X		-120	-040	007	029	-092	000	037	-552	-144

NOTE: All numbers in the factor columns are decimal numbers; the decimal points have been eliminated.

[a] + or - 400 has been selected as a significant loading. These are underlined.

51 Works to insure that all information is most accurate.

Two ideal Type 2 items, items 25 and 26, form one factor and reflect a people orientation. All of the other factors are unique (one item loads significantly on one factor) or a mix of Type 2 and untyped items.

Ideal Type 3 Analysis: Open-Systems Type

Twenty-four items including 13 of the ideal Type 3 items and 11 of the untyped items were submitted to a factor analysis. The results included 14 significantly loaded items--7 ideal Type 3 items and 7 untyped items. The factor loadings of these items are shown in table 39 with significant loadings underlined. The significant items include the following 7 items of ideal Type 3:

5 Feels it is important to go out to speak to groups about services of the library.

15 Believes that the library staff should actively participate in work of their policy-making boards.

16 Believes in meeting with potential user groups to assess needs and plan services.

24 Feels it is important to assess needs of nonusers.

27 Feels that interpersonal and communication skills are as important as knowledge of libraries and books.

45 Prefers to work in a challenging, constantly changing environment.

46 Likes to be part of planning and implementing new programs.

and the following seven untyped items:

2 Feels it is important to provide instruction.

TABLE 39

FACTOR ANALYSIS OF SERVICE SCALES: IDEAL TYPE 3[a]

Variables	Ideal Types		Factors										
	3	4	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
16	X		751	041	061	017	-009	-055	-094	079	-172	-066	123
24	X		624	066	018	007	029	-174	131	258	338	-040	-059
5	X		560	-015	006	-138	-008	-029	040	052	119	171	111
22		X	-449	358	000	040	-078	079	115	220	-148	-069	-095
50		X	-091	776	-049	-044	-006	-075	-005	-070	-094	-048	108
27	X		075	-040	386	-090	046	020	042	027	139	031	062
32		X	-168	-037	-051	809	-021	-013	-004	-071	-083	207	109
47		X	-014	002	-042	456	-258	-011	005	-123	-033	-205	-020
45	X		-039	-002	036	-231	676	032	-042	204	106	-001	062
51		X	-108	012	-050	-023	-085	-702	043	-205	-018	-065	002
39		X	004	006	-030	-002	006	-045	-770	012	036	-076	003
46	X		072	-027	021	-125	126	030	-014	521	042	077	-015
2		X	-060	075	-096	036	-119	-009	065	-022	-501	029	-056
15	X		-044	-070	160	025	054	021	110	056	083	430	095

NOTE: All numbers in the factor columns are decimal numbers: the decimal points have been eliminated.

[a] + or - 400 has been selected as a significant loading. These are underlined.

22 Believes that programs should be provided for groups with special needs only if additional resources are available.

32 Wants to be in the quiet, peaceful atmosphere of books and libraries.

39 Actively participates in local and/or state library and information professional organizations.

47 Prefers to work in an orderly, predictable environment.

50 Will initiate new programs and services only after they have proved successful in other libraries.

51 Works to insure that all information given by library personnel is the most accurate information available.

The first factor has four items loading significantly. Items 5, 16, and 24 are ideal Type 3 items, which reflect an interest in the total possible user population rather than an emphasis on current users only; while item 22, an untyped item, is a negatively loading item also relating to special user groups.

Final Test of Items of Service Orientation

The results of the separate factor analyses of the three ideal types produced a set of the strongest items of the original 54 items which included: 14 ideal Type 1 items, 8 ideal Type 2 items, 7 ideal Type 3 items, and 10 untyped items (referred to throughout the study as Type 4).

These final items were then submitted to another factor analysis. Again, an orthogonal rotation was requested, and a 14 factor solution was determined. The results of this analysis are shown in table 40, with the

TABLE 40

FACTOR ANALYSIS OF SERVICE SCALES: COMBINED TYPES[a]

Variables	Ideal Types				Factors													
	1	2	3	4	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
16			X		742	108	-023	079	049	008	061	015	012	056	101	120	-026	068
24			X		619	-071	042	-073	013	131	055	-134	062	217	-002	-252	-086	-014
5			X		600	-055	-140	-047	019	036	-144	-032	-066	017	006	-007	-027	-101
22				X	-447	-103	015	-028	-082	049	-014	264	-006	173	120	185	-039	-089
34	X				073	814	-006	021	135	102	003	010	-028	020	009	055	029	-068
39				X	-027	685	-019	033	057	069	-053	-058	159	-020	079	-071	013	-069
47				X	-019	036	756	153	-072	031	095	-019	004	-088	034	141	009	127
32				X	-137	-045	471	-063	109	-206	-021	003	056	-111	055	124	041	-054
1	X				049	-094	-110	-573	-040	-094	048	098	042	-310	-004	037	089	-000
6		X			002	046	026	565	-045	071	034	032	010	-011	089	-028	035	048
51				X	-018	003	127	-423	-022	109	189	047	093	-027	-202	000	-050	101
31	X				011	206	-027	061	630	052	-017	090	-027	-011	-093	-041	-006	-152
25		X			-090	-013	-075	082	-592	032	025	095	-091	-099	081	-148	-088	-227
12		X			083	028	-207	061	038	681	-083	-122	001	068	178	-021	-060	068
15			X		-005	-171	-022	-038	016	-581	-114	-121	-066	120	047	-012	-100	124
18		X			000	-117	072	-106	005	012	752	045	-004	-12	054	-079	-112	-002
50				X	-152	058	008	-099	-028	036	-013	583	003	-008	080	067	-004	071

TABLE 40--Continued

Variables	Ideal Types				Factors													
	1	2	3	4	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
37	X				-148	320	068	-058	-088	040	-013	-003	631	-042	-043	128	029	-059
46			X		094	-004	-160	122	054	-052	-011	-014	047	617	022	-022	-006	001
36	X				-102	-039	-025	-167	016	-029	-051	-025	054	-035	-670	-027	019	-041
49	X				124	-094	-020	-058	278	-088	018	-095	-029	024	-499	-069	129	-085
45			X		-055	005	-294	133	164	-028	073	057	-194	269	020	-466	072	015
20	X				-354	-051	247	013	118	192	-255	-013	-150	070	126	459	095	-129
27		X			085	-150	-180	063	034	-060	055	-092	068	-029	078	-183	-612	010
7			X		-007	-111	-118	261	097	-028	-134	-017	156	-095	-043	-074	434	025
54		X			005	-138	007	002	-005	-045	009	073	-041	002	087	-031	-003	691

NOTE: All numbers in the factor columns are decimal numbers; the decimal points have been eliminated.

[a]+ or - .400 has been selected as a significant loading. These are underlined.

significantly loading items underlined. Those significant items include: 7 ideal Type 1 items, 5 ideal Type 2 items, 7 ideal Type 3 items, and 7 untyped items for a total of 26 items left out of the original 54 items. A list of the 26 item numbers, their corresponding ideal types, and their factor patterns are found in table 41.

It is obvious from table 41 that the total group of service-orientation items did not load on one factor, indicating that the items are tapping many subdimensions of service orientation or dimensions other than service orientation. This indicates that the conceptual framework, i.e., the ideal types, are very broad and multidimensional. A weakness of the study is shown in the sense that the conceptual framework is not being supported by the item analysis. In examining the three ideal types in terms of their empirical validity, again the table shows that the ideal types are not "pure"; only Factors I (three ideal type 3 items), XI (two ideal Type 1 items), and III (two Type 4 items) have a cluster of items of the same ideal type.

Though none of the factors are really strong factors in terms of a large number of significant items totally or even from one ideal type, the following interpretation of factors may indicate the key service items. Each factor is named to help in interpretation as well as including a list of the items loading significantly on that factor. The minus signs in parentheses indicate the relationships between items within that factor.

TABLE 41

SIGNIFICANT SERVICE ORIENTATION ITEMS

Original Item Number	Ideal Types				Factors												
	1	2	3	4	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
16			X		742													
24			X		619													
5			X		600													
22				X	-447													
34	X					814												
39			X			685												
47			X				756											
32			X				471											
1	X							-573										
6		X						565										
51			X					-423										
31	X								630									
25		X							-592									
12		X								681								
15			X							-581								
18		X									752							
50			X									583						
37	X												631					
46			X											617				
36	X														-670			
49	X														-499			
45			X													-466		
20	X															459		
27			X														-612	
7			X														434	
54		X																691

Factor I: *Concern for nonusers*

Item 16 Believes in meeting with potential user groups to assess needs and plan services.

Item 24 Feels it is important to assess needs of nonusers.

Item 5 Feels it is important to go out to speak to groups about services of the library.

Item 22 Believes that programs should be provided for groups with special needs only if additional resources are available. (-)

Factor II: Professional organization involvement

Item 34 Actively participates in national library and information professional organizations.

Item 39 Actively participates in local and/or state library and information professional organizations.

Factor III: Preference for quiet, orderly environment

Item 47 Prefers to work in an orderly, predictable environment.

Item 32 Wants to be in the quiet, peaceful atmosphere of books and libraries.

Factor IV: Information processing

Item 1 Feels that it is important to question a patron to ascertain actual needs when faced with a reference question. (-)

Item 6 Accepts what patron initially says he wants when answering reference questions.

Item 51 Works to insure that all information given by library personnel is the most accurate information available. (-)

Factor V: Computer interest over people interest

Item 31 Is especially interested in introducing computer and other technological systems into the library setting.

Item 25 Is especially interested in helping people. (-)

Factor VI: Policy-making process

Item 12 Believes libraries should be under the control of a policy-making board.

Item 15 Believes that the library staff should actively participate in work of their policy-making boards. (-)

Factor XI: Afraid of risk-taking

Item 36 Does not believe in removing a book or magazine title considered important for the collection when a complaint is made. (-)

Item 49 Will initiate new program considered important even if potentially controversial. (-)

Factor XII: Supports standards and uniformity

Item 45 Prefers to work in a challenging, constantly changing environment. (-)

Item 20 Believes materials should be organized following standards of the profession, i.e., classification, filing, subject heading rules, and schemes.

Factor XIII: Favors independent patrons as opposed to use of interpersonal skills

Item 27 Feels that interpersonal and communication skills are as important as knowledge of libraries and books. (-)

Item 7 Expects patrons to use reference tools by themselves.

The other five factors, Factors VII to X and Factor XIV, are all one item factors in terms of significantly loading items and are not reported here. These factors are unique meaning, that there is no significant relationship between items. Only higher order factor analysis could further delineate clusters of items. The current study has shown that further work needs to be done in this area as

the ideal types posited and tested are too heterogeneous to form a scale of service orientation, and even within each ideal type set of items, they do not cluster sufficiently to make scales. Also, if four to six items had clustered on the factors, the Kuder-Richardson reliability coefficient could have been computed to establish the internal reliability of each scale. The effort reported in this chapter on testing the ideal type items has been a secondary part of the total investigation, and is considered sufficient in view of the limits of sample size and the need of second order factor analysis for further clarity.

PART III

SUMMARY, CONCLUSIONS, AND FUTURE RESEARCH

CHAPTER X

SUMMARY AND CONCLUSIONS

Methodology

The current investigation began with two major objectives: (1) to explore the concept of service orientation and (2) to develop a methodology for measuring the concept. The first objective required a review of the concept in the literature of the sociology of occupations as a conceptual framework. This literature presented two of the three definitions of service orientation delineated in the first part of the study: Goode's Traditional-Professional Type, ideal Type 1; and Simpson and Simpson's Semi-professional Type, ideal Type 2. The third definition emerged from the search of library literature--the Open-Systems Type, or ideal Type 3.

After these were posited as the three ideal, hypothetical types, a set of items was developed representing each of the three types. An untyped category was named Type 4 in order to parsimoniously use it in the study; this type evolved from items not fitting the other three categories but considered essential to the service concept within this occupational field. A large pool of items was refined and synthesized through several pretests until

a final group of fifty-four items was selected for the study.

Findings

Study Questions

Each of the four major questions guiding the development of the study will be presented and then briefly discussed in terms of the findings of the study. The order in which they were analyzed in the earlier section will be maintained, as this logical sequence best indicates the findings that can be directly gleaned from the analysis.

Work values

The first study question dealt with in chapter VI, "Work Values Analyses," was formulated as follows:

Is service orientation considered an important concept on a scale of work values within the sample groups tested?

The work values considered to be service indicators --"opportunity to be helpful to others" and "a sense of accomplishment by contributing to society"--were ranked second and third (on a scale of ten) among the composite group of students, leaders, and practitioners. However, another value--"opportunity to use my special abilities or aptitudes"--ranked as the first choice work value. Among the individual sample groups, the leader group ranked the more altruistic service indicator--"sense of accomplishment by contributing to society"--as their first

choice, while the students and practitioners both ranked ". . . special abilities or aptitudes" as their first choice. The student group placed the more altruistic service indicator fifth, and the practitioner groups placed it third.

The second service indicator--"*opportunity to be* helpful to others"--was ranked second by both the students and practitioners, and third by the leaders. Service orientation, as measured by these two indicators, is certainly an important value in the field, according to the perceptions of the current study group. As might be expected, the more altruistic meaning of service was not as important to the student group as it was to the leaders and the practitioners.

Meaning of service orientation

The second study area, and the most important focus of the study, was analyzed in chapter VII, "Service Orientation Concept Analyses." The questions were:

What is the meaning of the concept, service orientation, within the framework of the library and information services field?

Is service orientation viewed differently by library school students, practitioners, and by leaders in the profession? or is there consensus among the groups?

Service orientation was assessed through the perceptions of selected samples of students, leaders, and

practitioners in the library field. Through the use of a Q-sort data collection instrument, a forced ranking device for large numbers of items, each of the separate groups' view was obtained.

There was found to be a great deal of consensus within the individual groups; so much so that a one factor solution which basically indicated one pattern was determined to be the best solution for each of the groups. Table 42 presents the most accepted items of the three separate groups; the six starred items are the consensus items of the three groups. Table 43 presents the most rejected items of the three groups, with the eleven starred items again as the consensus items. Overall, the three groups agreed in accepting:

interpersonal and communication skills
the process of bringing information, books, and people together
helping people
making sure that information is the most accurate
the liaison role of libraries
the need to plan services based on total community

and agreed in rejecting:

a quiet, peaceful atmosphere
expecting patrons to use reference tools by themselves
a business-like, reserved manner
taking for granted accurate information is given
initiating programs and services proved successful
accepting what patron says he needs
an orderly, predictable environment
following circulation rules conscientiously
spending time exclusively on current patrons
need to have approval expressed
providing for special groups only if additional resources are available.

An examination of the combined group analysis

TABLE 42

MOST ACCEPTED ITEMS OF THREE SEPARATE GROUPS AND z SCORES

Item No.	Ideal Types	Statement	Students	Leaders	Practitioners
*27	3	Feels that interpersonal and communication skills are as important as knowledge of libraries and books.	1.77	1.72	1.71
*28	3	Wants to be involved in the process of bringing information and books together with people.	1.52	1.53	1.44
*25	2	Is especially interested in helping people.	1.51	1.47	1.46
4	2	Believes in treating patrons with an open, personal manner.	1.45	...	1.32
*51	4	Works to insure that all information given by library personnel is the most accurate information available.	1.35	1.32	1.49
*3	3	Feels that library staff members should act as a liaison to other libraries and agencies when not able to supply information.	1.14	1.13	1.34
*23	3	Will plan services based on the needs of the total community.	1.10	1.31	1.20
1	1	Feels that it is important to question a patron to ascertain actual needs when faced with reference question.	1.06	...	1.43
18	2	Believes that materials should be organized in ways users will find the most convenient.	1.01	...	1.36
16	2	Believes in meeting with potential user groups to assess needs and plan services.	...	1.24	
26	2	Would like to spend a majority of their time in working with people--both staff and patrons.	...	...	1.02

TABLE 43

MOST REJECTED ITEMS OF THREE SEPARATE GROUPS AND z SCORES

Item No.	Ideal Types	Statement	Students	Leaders	Practitioners
*32	4	Wants to be in the quiet, peaceful atmosphere of books and libraries.	-1.86	-1.98	-1.79
*7	4	Expects patrons to use reference tools by themselves.	-1.82	-1.61	-1.91
*9	1	Believes in treating patrons with a business-like, reserved manner.	-1.81	-1.05	-1.42
*52	4	Takes for granted that library personnel gives out accurate information to patrons.	-1.77	-1.46	-1.57
*50	4	Will initiate new programs and services only after they have proved successful in other libraries.	-1.62	-1.67	-1.39
*6	2	Accepts what patron initially says he wants when answering reference questions.	-1.61	-1.59	-1.72
*47	4	Prefers to work in an orderly, predictable environment.	-1.51	-1.51	-1.48
*19	1	Feels that the best way to provide access for the most patrons is to follow circulation rules conscientiously.	-1.35	-1.68	-1.32
*10	2	Feels that staff members should spend time exclusively on needs and services of current patrons.	-1.33	-1.34	-1.25
*54	2	Needs to have approval expressed by patrons and colleagues.	-1.21	-1.37	-1.24
*22	4	Believes that programs should be provided for groups with special needs only if additional resources are available.	-1.00	-1.31	-1.07

TABLE 43--Continued

Item No.	Ideal Types	Statement	Students	Leaders	Practitioners
41	4	Believes that librarians should support the library whenever complaints are heard from outsiders.	...	-1.18	-1.04
53	1	Acts according to personal convictions regardless of other's approval.	...	-1.05	...

illustration the style of the typical member of the total group, and indicates the individual differences between types. There were thirty-seven consensus items in the three-factor solution chosen as the best solution. Table 44 briefly explains the three factors, the number and type of persons in each factor, and the percentage of variance accounted for by each factor. Overall, the combined group can be characterized in much the same way as was indicated by the consensus items of the three separate analyses, adding a great deal of credibility to the methodology used in combining the three groups. For example, the six most accepted consensus items were identical to those listed for the three individual groups and the eleven most rejected consensus items were also identical.

Differences between the three factors as denoted by the unique items of the table allow the following brief descriptions of the three factors:

Factor I. An open, personal, people-oriented type who has an orientation to the total community, including nonusers. The person is flexible, and wants to be part of a challenging, changing environment.

Factor II. A work-oriented person who reads professional materials, and who is goal-conscious in planning programs and services. Interest is centered in more traditional library activities such as building library collections and providing library instruction.

Factor III. People-oriented, this type is open and

TABLE 44

SUMMARY OF COMBINED FACTOR TYPES

Factor Types	Characteristics	People (Percent)	Variance (Percent)
	"Unique" Items		
Factor I Open-Systems Factor Type	Believes in an open, personal manner	58	31
	Is people-oriented	22 leaders	
	Has a total community orientation (users and nonusers)	14 practitioners	
	Prefers a challenging, changing environment	1 student	
Factor II Mixed Factor Type	Major focus is work	7	8
	Is interested in building library collections	3 leaders	
	Reads professional materials	3 practitioners	
	Provides instruction in use of libraries	1 student	
	Is goal conscious in planning		
Factor III People-Oriented Factor Type	Believes in an open, personal manner	33	23
	Wants to spend majority of work time in working with people	5 leaders	
		13 practitioners	
		12 students	

TABLE 44--Continued

Factor Types	Characteristics	People (Percent)	Variance (Percent)
	Consensus Items--Most Accepted		
	Importance of interpersonal/communication skills		
	Wants to bring information and books together with people		
	Wants to help people		
	Believes in liaison role of librarians		
	Questions patron to ascertain needs		
	Works to see that information is most accurate available		
	Consensus Items--Most Rejected		
	Prefers a quiet, peaceful atmosphere		
	Prefers an orderly, predictable environment		
	Expects patrons to use tools by themselves		
	Takes for granted that information is accurate		
	Accepts what patron says he wants		
	Believes in business-like, reserved manner		
	Initiates proven successful programs only		
	Follows circulation rules conscientiously		
	Spends time exclusively on current patrons		
	Needs to have approval expressed		
	Librarians should support the library		

personal in dealing with others, and some [illegible] majority of real time with people.

Demographic and attitudinal variables

A third important question is how [illegible] the relationships of the factors uncovered to specific demographic and attitudinal variables:

Are there major differences (intergroup and intra group) between the sample groups in relationship to sex, age, marital status, library experience, socialization, and professional involvement? Do these variables seem to be related to the type of service orientation?

Demographic variables

The sample group was proportionately higher at both the younger ages (twenty to thirty years), 55 percent, due to the student group's influence; and the oldest age group (over fifty years), 21 percent, due to the leader group's influence. The younger group was about equally divided between Factors I, Open-Systems Factor Type, and Factor III, *People-Oriented Factor Type*. The older one was, the more they were included within Factor I.

The sample group was disproportionate in the ratio of males to females (31.1 to 68.9 percent) to the proportion in the real world of librarianship--due to the leader group's influence (57 percent male to 43 percent female). Factor I had large numbers of both males and females (21.1 and 37.8 percent, respectively); however, in the People-

Librarian Type Factor III, females predominate (76.2 percent female) to 6.7 percent male. This finding tends to support the traditional or the "librarian" as the predominant stereotype of female members of women. For library workship, however, the above findings may indicate that there are two "types of women" in the profession as delineated by the differences between Factors I and III. Sex may not be the important factor however "type of person" may be more important.

Though marital status showed no differentiation on the basis of factor types, the study group had a rather large number of single people included: 41.1 percent single compared to 53.3 percent married, and 4.4 percent divorced or separated.

Fifty-six percent of the leader group had over thirty years of experience in the field while most of the other respondents (80 percent +) had between one and five years of experience. With less experience (one to five years), the respondents were split within Factor I (33 percent) and Factor III (21.2 percent). With more experience (over thirty years), the respondents were found in Factor I (11.9 percent). The type of experience did not seem to have any influence on factor type: all types except volunteers were largely in Factor I.

The current position of the respondents did relate to the factor types. For example, chief librarians were quite divided between the factor types while other

administrators were identically divided between Factor I and Factor III. Public service people were bimodal in Factor III, the People-Oriented Factor Type, and library educators were almost completely in Factor I, the Open Systems Factor Type.

Obviously, when one-third of the respondents were selected as leaders of the profession, the position level will have a large administrative component. This is shown in the following percentages of the total respondents: 14 percent were chief librarians and 12.3 percent were department or division heads. However, it is important to point out that almost equal representation was found in public services (11 percent); in library education (10 percent); in unemployed librarians (12.3 percent), mostly students; and in "others" (12.2 percent). Very small numbers of respondents were found in systems positions (1.1 percent), associate director positions (2.7 percent), and in technical services positions (3.3 percent). As would be expected, almost all the chief administrators were from the leader group; only 7 percent of the practitioners were chief librarians as compared to 37 percent of the leaders. Practitioners were mostly in public services (33.3 percent) and in middle-management positions (department or division heads, 20 percent; heads of school or department libraries, 23 percent). The other large proportion of leaders were library educators (27 percent).

Overall, the demographic variables of age, years of

experience, and current position seemed to be most related to factor types.

Attitudinal Variables

Professional affiliation, specialization, and type of library interest all appeared to have some relation ship to factor types. The sample group was evenly represented by ALA members due to the particular selection of the leader group from that segment of the population: 48 percent of the total group of respondents were members of ALA. The other professional groups were of course not as well represented; however, there were 2 respondents whose libraries were ASIS members, while individual memberships included: 4 AALS members, 6 ASIS members, 12 SLA members, 6 AECT members, 27 respondents who belonged to state organizations, and 28 who belonged to other "work-related organizations." Most of this number were fairly divided between the leaders and practitioners with only one student even belonging to ALA.

Though most of the division representation was made up of leader respondents, the divisions were about equally represented, with the greater number of respondents being members of PLA (14.4 percent), ACRL (13.3 percent), and AASL (11.1 percent). All of those involved in library education either affiliated with AALS or LED were clustered in Factor I, as were those belonging to ASIS. Those representing divisions of ALA were found with

Factor I spans high between, that is, loadings to YASD were split evenly between Factors I and III. Though Factor I predominated, as Factor I, smaller proportions of several groups also clustered in Factor III; for example, one-fourth of those belonging to AASL, ASIS, LSD, and PLA were found in Factor III while about one-third of those in ISAD and AASL were also in Factor III.

The more interesting findings included: the very large proportion of CSD respondents that were found in Factor I (88.9 percent)--larger than any other division; the equal split of YASD respondents between Factors I and III; and the fact that about one-third of the ISAD respondents clustered in Factor III, the People-Oriented Factor Type.

There appeared to be some relationship between factor type and type of library interest. For example, the largest number of academic librarians were found in Factor III (11 percent) though an almost equal percentage were found in Factor I (10 percent). Though the total sample was largely made up of public librarians (36 percent), academic libraries represented 24 percent of the total; school libraries, 17 percent; and special libraries, 14 percent--quite adequate representation. Students most associated themselves with academic libraries while practitioners and leaders were mostly associated with public libraries. Those associated with school libraries clustered in Factor I, those associated with public libraries were divided

about two to one between Factor I and III, and the general librarians were evenly split between Factors I and III.

Specialization was found to be the most likely attitudinal variable to have a relationship to factor type. Overall, the specialties of the sample were ranked from reference (22 percent), administration (15 percent), school librarian (14 percent), to work with children (13 percent), and as low as 1.3 percent each for information science and systems and networking. Factor I, the Open-Systems Factor Type, had clusters of school librarians, administrators, and those working with children; while Factor III, the People-Oriented Factor Type, had clusters of those in the reference specialty (which would be expected). A surprising result was the representation in Factor III of cataloging and information science specialists.

All of the findings on attitudinal and demographic variables as related to factor types are preliminary and tentative. The numbers of cases studied were not large enough to allow statistical tests of relationships. The percentages reported could be misleading, and do not indicate either positive or a lack of positive relationships. However, they have been examined in order to suggest possible relationships to be investigated. It would appear that age, years of experience, specialization, type of library, and professional affiliations should be explored further in terms of their relationships to the factor types delineated in the current study.

Test of the Theoretical Types

An important part of the present study [illegible] was the analysis of the theoretical ideal types. Through [illegible] the analysis of the empirical data, one of the purposes was to describe each ideal type. These results were reported in Chapter IX. From the original 91 items which were [illegible] to measure service orientation, a final set of 20 items were selected on the basis of significant loadings. Ideal Type 1 was represented in the final solution by 5 items, Ideal Type 2 by 7 items, ideal Type 3 by 7 items, and there were still 2 untyped items that remained. As no ideal type is eliminated or substantially decreased in number of items within a type, it could be said that the hypothetical, ideal types were operational types. In other words, each type was important to the concept--or at least that some items representing each ideal type were important.

However, it is important to realize that these items were distributed throughout fourteen different factors, with no more than four items appearing within one factor. Scales that would clearly delineate the three ideal types as posited in the beginning of the study were not apparent in this analysis. From the current results, it would seem that there were many dimensions being examined in this study. It is apparent that each of the ideal types posited from the literature are multidimensional rather than unidimensional. The present investigation was a test of ideal types of the service concept. The tentative

results of each part of the questionnaire to see if they support the hypothesis definitions of service drawn from the literature may be faulty in two ways. The definitions may be too generalized and/or may be supplied by only a few persons, some of which may not even be experts of people but rather other aspects of the field such as money or style. Before this assertion is considered, however, it would be necessary to undertake higher order factor analysis with a new set of data obtained from a random sampling to further test the ideal types or scales of service orientation.

Conclusions

The current study has been concerned with the concept of service orientation. The study has shown through the assessment of the work values of the three study groups that service is an important value in the field. Leaders and practitioners especially valued the altruistic meaning of service, "contributing to society" while all three study groups (students, leaders, and practitioners) valued the "opportunity to be helpful to others."

In trying to define service orientation, the study has posited and tested statements concerning service and has presented a new set of items for further testing. It was found that not one but several patterns of service do exist in the field. These are reflected in the three factor types of the combined samples analysis: the *Open-Systems Factor Type*, the *People-Oriented Factor Type*, and

the Mixed-Factor Type (Traditional and Technical). Though the three patterns of service have been identified, the general consensus in the field was greater than expected. A set of items which overlapped between the two hypothetical ideal types, the Traditional Type and the Open-System Type, became the consensus items obtained in the factor analysis. They included:

Awareness of the importance of:

interpersonal and communication skills
the process of bringing information, books, and people together
helping people
the accuracy of information given to patrons
the liaison role of libraries
the planning of service based on the total community

In other words, though there was not found one definition of service for the profession, but rather three patterns of service, there were commonalities in the three patterns, forming a "common core." This could be seen as a basic definition of service for the field, though recognizing that this definition needs to be tested and refined. The dimensions of service orientation which have been identified--items such as the recognition of the importance of interpersonal and communication skills, the identification with the total process of bringing together information, books, and people, and so forth--should prove encouraging to the field. The new basic definition of service is positive and exciting.

The study supports the writings of those critics

of the Traditional-Professional Model, which are discussed in chapter II, and the more open aspects of a new service model for the library field. A service-oriented organization which is concerned with the informational needs of specialized publics and/or a general public might function best with an open, flexible systems orientation. The model proposed by Schmidt and Banks referred to throughout the study as ideal Type 2, the Open-Systems Type, has been tested in the study, and supported by the perceptions of people in the field.

There are implications in the results for both graduate library education and continuing education. An examination of curricula and programs of both of these should lead to the addition or substitution of other curricular areas. Important areas relating to the new emphases include: the behavioral sciences especially psychology, sociology, and communication; and the applied sciences such as computer science and operations research. The specific learnings should involve: interpersonal and communications skills, community study, planning and evaluation, the systems approach, and networking among others. The knowledge and expertise required of the person that would successfully perform the service aspects briefly identified above will require a "new breed" of librarian--the desire to help people will still be essential, but will no longer be sufficient as a creed of the profession.

Certain demographic and attitudinal variables have

loop examined in relationship to the service concept. Though further more in-depth research is needed to test statistically their relationship, it may be hypothesized that the variables of age, years of experience, specialization, type of library, and professional affiliation are related to the service concept.

The methodology used in the current study--the Q-sorts instrument, factor analysis of the data, and the development of a "typology of people"--has been successful for the study and should be continued in similar studies. Q-methodology is a practical tool for such a field study and is not bound by statistical significance but is rather more qualitative than quantitative. Consequently, the technique serves useful in exploratory studies.

After testing the ideal types of service and finding that the ideal types were multidimensional rather than unidimensional, the results of the focal point of the study --the factor analyses of the Q-sorts data of the individual groups and the combined group sample--need to be reassessed. The three factors delineated and their related unique service items do indicate patterns and consequently, types of persons. However, whether either the unique items or the consensus items really measure service orientation is still a question. The study has measured the perceptions of each of the sample groups on the ideal types of service. This was the intent of the study, and was accomplished. Due to the apparent lack of construct validity of the ideal types,

it is not proof that service orientation has been adequately measured. This difference is important in discussing the current study. The [illegible] definition of service for the food service industry study obviously needs more testing. Several approaches will be mentioned in the future research section.

Limitations

There are several limitations to the current study. Some are methodological, while others are inherent in the purposes and the content of the study.

A major limitation of the current investigation is the discrepancy inherent between the perceptions of people--what they say they believe and do--and their behavior in actual practice. Of necessity, the current study was assessing the perceptions of people. In order to minimize this problem, each item was a specific belief or intended behavior; however, the problem remained and will be dealt with again under future research. Associated with this problem is the one of social desirability responses--people may be responding according to what they would like to have happen or according to what they feel is expected in their responses. The problems identified are those encountered by all attitudinal research. Controls such as the inclusion of social desirability scales can do much to counteract some of the above problems. However, due to the exploratory and methodological purposes of the

current study, they were not done a priori.

Generalizing to the population beyond the sample group was not an objective of the study. For this reason, a large, random sample was not used, nor were data collected on other helping professions for comparative purposes (and normative training). The purposive sample of the current study cannot be claimed as representative of the general population of the library field. Further studies using random samples will need to be conducted before a true assessment of service is made.

Another limitation of the current study, related to the sampling plan, involves the following question: how common in the field are the perceptions of service orientation obtained from the respondents to this study? Are these positive service indicators shared with the majority of leaders, practitioners, and students? Though this should always be questioned when not using random sampling, the current investigation involved a self-defined leader group--those who had become leaders by virtue of election to a presidency of either a division of ALA or of ALA itself. These leaders may or may not perform true leadership roles (influencing others, as role models); they have received internal rewards but whether due to seniority, popularity, or true leadership cannot be ascertained. The addition of award winners to the leader group might somewhat have neutralized the leaders' effect, however. The term, leader, should therefore be interpreted carefully for

the present investigation. It should also be noted that a very narrow range of practitioners were included in the study, only those with one to five years of experience. Including practitioners with a total experience of over ten years might have modified the results.

One thing not accomplished in the study was a determination of the extent of overlap in the factors identified in the factor analysis of items (for testing the "goodness" of the items). This was not possible with the small sample used in the study; it would have been necessary to have a minimum of four to ten respondents per item, or a total of approximately 540 respondents. If that condition had been met, all of the items would have been factor analyzed together, rather than in the tests of each of the theoretical types individually as done in the current study. As a secondary part of the investigation, the test of the items was only a first step in a way that would be needed to test adequately the items. Also, it is important to recognize that construct validation is never complete. The construct of service orientation needs continued testing; the items derived in this study as being the most significant items need further testing and refinement.

CHAPTER XI

AUTOBIOGRAPHICAL AND FUTURE RESEARCH

Significance of the Study

Shera, writing recently, has remarked:

> The librarians, too, have denied the significance of a philosophical framework reference, and as a consequence have never developed a cohesive synthesis of their activities.[1]

The current investigation was a beginning effort in a continuing interest on the part of the researcher in the development of a philosophical base for the field of library and information studies. However, in building that philosophical base, Shera warns of the "importance of a holistic approach to library problems and needs."[2] This approach from a research point of view would involve the life work of many researchers. However, since the service concept has been identified as central to such a basic philosophy, it subsequently can serve as a starting point.

A philosophical base of service could serve as the underpinnings of a theoretical framework for the library and information field. This raises a basic question--does an applied, professional field such as the library field have a theory of librarianship or even a theoretical framework? This researcher would respond that any

practitioners in the field need a theoretical base, and that only through research with that theory is it to be tested and developed. The relationship of theory, practice, and research is clearly explained in a discussion of the nature and development of theory in the practice discipline of nursing:

> Theory is born in practice, is refined in research, and must and can return to practice if research is to be other than a draining-off of energy from the main business of nursing and theory more than idle speculation.[3]

Theory is defined by these same writers as: "a conceptual framework invented for some purpose."[4] They build an effective argument for levels of theory. In terms of higher level theory building, they speak of "situation-producing theory" as involving:

> 1. goal-content specified as aim for the activity;
> 2. prescriptions for activity to realize the goal content; and
> 3. a survey list to serve as a supplement to present prescription and as preparation for future prescription for activity toward the goal content.[5]

This situation-producing theory, if regarded as an actual attempt to bring into existence the activity suggested by the theory, is called a practice theory. A recent book by Argyris and Schön discusses theory in this same sense. They refer to theories of professional practice as "special cases of the theories of action that determine all deliberate behavior."[6] Most pertinent for this particular study is their explanation of a theory of practice as:

> . . . consist[ing] of a set of interrelated theories of action that specify for the situation of the

> practice that will, under the relevant assumptions, yield satisfactory results.[7]

This agrees with my way of thinking about theories as vehicles for explanation, prediction, or control. Argyris and Schön maintain that a profession ". . . not only has a practice but also a theory of action in which that practice can become a reproducible, valid technique."[8] Though it may be necessary to refer to the current conceptualization of the service concept as applied theory, it is still useful knowledge for the field of librarianship.

Questions Raised by the Study

An impressionistic view of the results of the completed investigation should generate ideas for needed research in the area. Looking back on the findings, several questions can be raised, including:

> Is the Open Systems Model of service as perceived generally by the respondents of the current study being practiced in the library and information services field?
>
> Or, is there fear of technological developments and resistance to change on the part of practitioners in the field?

The difference between rhetoric (what people say they believe and do) and behavior (as observed by others) needs to be assessed before the results of the current study become meaningful. Another related question which is especially pertinent is:

> Are leaders as service-oriented in practice as they are in theory?

Along with an assessment of leaders' behavior, an examination of the impact of their behavior on the organization's environment and other staff members should be undertaken. A problem in the current study, trying to separate the individual's service orientation from the service-oriented library, needs further thought and study. For example, a question to be considered might include:

> What is the relationship between the students' view of service, the faculty's view of service, and the curricula of the same graduate library school?

This seems especially pertinent when considering one result of this study--that library educators clustered predominately in Factor Type I, the Open-Systems Type. Another related question is:

> What is the relationship between the individual practitioner's view of service, the administrator for which they work--his view of service--and the constraints of the work environment (budget, resources, policies, and so forth)?

Future research should involve these relationships.

Future Research

In consideration of the previous discussion and the many questions that have been raised, it is evident that much future research is needed in this area.

The twenty-six service items delineated in the present investigation should be tested on random samples of the library population using Q-methodology. This would allow the results to be generalizable to the entire library field, and would also serve as a test of the ideal types as scales of service orientation. Higher order factor analysis should also be utilized. The present study would then be replicated and the results would be subject to verification, in a study without the limitations of the completed study.

The relationships between the demographic and attitudinal variables (such as age, experience, position, specialization, and professional affiliation) and type of service orientation which have been hypothesized from the results of the present study should be tested. Statistical techniques, such as the chi-square statistic, should be used on data from randomly selected samples of the library and information population.

Probably the most important study needed in this area is to begin again, without the use of the ideal types, to find service indicators. Observations and reports of actual, specific service behaviors could be recorded. These might be obtained by trained field observers, by self-reports (diaries) of activities that could be content analyzed for service, or by users' verbal descriptions of service of librarians that served them. The value of this area of research is its lack of contamination by previously

identified faulty conceptualizations of the writers in sociology and the library field concerning service orientation. A potential problem, however, is the obtrusiveness of some of these measures. However, the educational field, for example, has assessed "good teaching" through interaction analysis observations in the classroom.

An important study would be to match a person's self-report on service items of the Q-sort with measures of their actual behavior in the work situation. The whole relationship between attitudes and behavior could be further explored in this way. Taping actual interviews of the librarian-patron dialogue would be a possibility; interviewing actual users who had contact with respondent librarians would be another. The best method would be the least obtrusive one.

The Q-sorts technique should be further tested for this type of research; the reliability of the technique could be ascertained by repeating a sort of one individual at different intervals of time. The methodology offers a powerful tool for similar studies in the field. Dimensions of the field such as leadership style, reference theory development, and so forth could be explored through this methodology. As a novel alternative to the questionnaire or interview technique, as a rather convenient instrument for forcing choices, and as an efficient technique to form typologies, the methodology has many advantages.

A related study which was an early concern of this

researcher would be a comparison of the most used service instrument to date, the Allport-Vernon-Lindzey Study of Values' service scale with the service items derived as service indicators in the current study. Using the two instruments with the same populations would allow one to compare their effectiveness in measuring service, and to clarify the suitability of the Allport instrument in library studies. The research needs in this area of concern are plentiful, and the importance of building concepts such as service to contribute to a philosophical base of librarianship is essential.

The library and information field has been newly involved with computers and technological changes at the same time that knowledge (or at least information) is multiplying and resources for support services are dwindling. It is a time when goals and means to accomplish them can be easily confused--and at such a time, objectives and goals need clarification. This is true of libraries today, and the service concept is one that could be easily lost but yet may be the most vital to the field. As Evans has recently commented:

> I think all of this will make the future an exciting environment in which to work. In spite of the increased emphasis on scientific management and hard data I am certain the service orientation of the library will not be lost. The most successful librarians will be those who combine management knowledge, with a true interest in people and their needs.[9]

CHAPTER XI: NOTES

[1]Jesse H. Shera, "Failure and Success: Assessing a Century," Library Journal 34 (January 1, 1976):281.

[2]Ibid., p. 283.

[3]James Dickoff, Patricia James, and Ernestine Wiedenbach, "Theory in a Practice Discipline: Part 1: Practice Oriented Theory," Nursing Research 17 (September-October 1968):415.

[4]Ibid., p. 421.

[5]Ibid.

[6]Chris Argyris and Donald A. Schön, Theory in Practice: Increasing Professional Effectiveness (San Francisco: Jossey-Bass, 1974), p. 4.

[7]Ibid., p. 6.

[8]Ibid., p. 149.

[9]Edward G. Evans, Management Techniques for Librarians (New York: Academic Press, 1976):269-70.

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APPENDIX A

STATEMENT ON PROFESSIONAL ETHICS, 1975

STATEMENT ON PROFESSIONAL ETHICS, 1975*

Introduction

The American Library Association has a special concern for the free flow of information and ideas. Its views have been set forth in such policy statements as the Library Bill of Rights and the Freedom to Read Statement where it has said clearly that in addition to the generally accepted legal and ethical principles and the respect for intellectual freedom which should guide the action of every citizen, membership in the library profession carries with it special obligations and responsibilities.

Every citizen has the right as an individual to take part in public debate or to engage in social and political activity. The only restrictions on these activities are those imposed by specific and well-publicized laws and regulations which are generally applicable. However, since personal views and activities may be interpreted as representative of the institution in which a librarian is employed, proper precaution should be taken to distinguish between private actions and those one is authorized to take in the name of an institution.

The statement which follows sets forth certain ethical norms which, while not exclusive to, are basic to librarianship. It will be augmented by explanatory interpretations and additional statements as they may be needed.

The Statement

A Librarian

Has a special responsibility to maintain the principles of the Library Bill of Rights.

Should learn and faithfully execute the policies of the institution of which one is a part and should endeavor to change those which conflict with the spirit of the Library Bill of Rights.

Must protect the essential confidential relationship which exists between a library user and the library.

Must avoid any possibility of personal financial gain at the expense of the employing institution.

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*American Libraries 6 (April 1975):231.

Has an obligation to insure equality of opportunity and fair judgment of competence in actions dealing with staff appointments, retentions, and promotions.

Has an obligation when making appraisals of the qualifications of any individual to report the facts clearly. accurately, and without prejudice, according to generally accepted guidelines concerning the disclosing of personal information.

APPENDIX B

A COMMITMENT TO INFORMATION SERVICES

A COMMITMENT TO INFORMATION SERVICES*

Prepared by the Standards Committee
Reference and Adult Services Division
American Library Association
January 20, 1976

Introduction

The emergence of entirely new and sophisticated information retrieval systems has required rethinking of established concepts and methods of reference and information services. The institutional framework for those services becomes less important than the delivery of services of high quality. In addition, the increasing diversity of the user populations requires a change in the traditional modes of the delivery of information services, particularly in relation to cooperative endeavors and networking arrangements where back-up levels of information resource capability are provided.

The librarian/information specialist must be the intermediary or the negotiator for unlocking these multifarious information resources. This responsibility places the concept of good service on the ability of the librarian/information specialist to be an effective facilitator in this transaction. In all transactions the librarian/information specialist must be impartial and non-judgmental.

It is recognized that service strategies need to be designed that are more sophisticated and sensitive to the complex user patterns never known to our profession before. The guidelines for services, reflect a suggested level of performance in meeting the needs of users in those institutions and agencies which need practical methods of procedure and self-evaluation for the delivery of information services.

The guidelines are directed to all those who have any responsibility for providing reference and information services, including the reference or information specialist, supervisors or department heads, administrators, educators, and trustees. In providing services, they shall consider the needs and interests of all users, including children, young adults, people who do not come to a library/information center, and potential clients.

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*No copyright is claimed in this material. Library Journal 101 (April 15, 1976):973.

Scope

Providing reference services in a library or information center* should be recognized as a critical responsibility in meeting the information needs of users and prospective users. It should be organized to provide, as appropriate, for the coordinated access to the information resources existing within an area or a given field of endeavor.

Since all functions of a library or information center should be viewed, in ultimate terms, as facilitating the transfer of information, the distinguishing feature of reference services is that it specifically ensures the optimum uses of information resources through substantive interaction with the users on direct and indirect levels cited below.

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*The term information center in this document includes any service point from which a user of prospective user may seek information of any level or type through direct or electronic means. Information services is a term used in the guidelines to include all traditional reference and information services and to be the broadest term possible.

APPENDIX C

SELECTED ALA AWARDS:

PURPOSE OF EACH AWARD

SELECTED ALA AWARDS: PURPOSE OF EACH AWARD*

1. Beta Phi Mu Award--1970-1974

"Presented to a library school faculty member or to an individual for distinguished service to education for librarianship."

2. Melvil Dewey Medal--1970-1974

"Presented annually to an individual or a group for recent creative professional achievement of a high order, particuarly in those fields in which Dewey was actively interested: notably, library management, library training, cataloging, and classification, and the tools and techniques of librarianship."

3. Grolier Foundation Award--1970-1974

"Presented to a librarian in a community or a school who has made an unusual contribution to the stimulation and guidance of reading by children and young people . . . usually given for outstanding work with children and young people through high school age, for continuing service, or in recognition of one particular contribution of lasting value."

4. Joseph W. Lippincott Award--1970-1974

"Presented annually to a librarian for distinguished service in the profession of librarianship, such service to include outstanding participation in the activities of professional library associations, notable published professional writing, or other significant activity in behalf of the profession and its aims."

5. Margaret Mann Citation--1970-1974**

"Given to a cataloger or classifier, not necessarily an American, for outstanding professional achievement in the areas of cataloging or classification, either through publication of significant professional literature,

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*"Through its awards program, the American Library Association seeks to honor those who have rendered distinguished service to libraries and librarianship" (ALA Handbook of Organization, 1974-1975, p. 74).

**1970 winner deceased.

participation in professional cataloging associations, introduction of new techniques of recognized importance, or outstanding work in the area of teaching within the past five years."

6. Isadore Gilbert Mudge--1970-1974*

"Given to a person who has made a distinguished contribution to reference librarianship."

7. Esther J. Piercy Award--1970-1974**

"Presented in recognition of a contribution to librarianship in the field of technical services by younger members of the profession through: (a) leadership in professional associations at local, state, regional, or national levels; (b) contributions to the development, application, or utilization of new or improved methods, techniques, and routines; (c) a significant contribution to professional literature; (d) conduct of studies or research in the technical services."

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*1970, 1971 winners were nonlibrarians, and deleted from the study.

**1974, no recipient of the award.

APPENDIX D

LIST OF LEADER GROUP PARTICIPANTS:

ALA PRESIDENTS AND DIVISIONAL PRESIDENTS

LIST OF LEADER GROUP PARTICIPANTS:

ALA PRESIDENTS AND DIVISIONAL PRESIDENTS

ALA Presidents, 1970-1975

Divisional Presidents of ALA, 1970-1975:

1. American Association of School Librarians (AASL)
2. Association of College and Research Libraries (ACRL)
3. Formerly Association of Hospital and Institution Librarians (AHIL); currently, Health and Rehabilitative Library Services Division (HRLSD)
4. Association of State Library Agencies (ASLA); formerly, American Association of State Libraries (AASL)
5. Children's Services Division (CSD)
6. Information Science and Automation Division (ISAD)
7. Library Administration Division (LAD)
8. Library Education Division (LED)
9. Public Library Association (PLA)
10. Reference and Adult Services Division (RASD) (after 1972, two former divisions (RDS) and (ADS) joined)
11. Resources and Technical Services Division (RTSD)
12. Young Adult Services Division (YASD)

APPENDIX E

INSTRUMENTS USED IN THE STUDY

Q-Sort Service Orientation Instrument

Values Instrument

Background Sheet for Leader and Practitioner Groups

INSTRUMENTS USED IN THE STUDY

Q-Sort Service Orientation Instrument

Directions

Begin with this page. In this packet, you should find the following materials: the 3 page set of directions you are currently reading; two packs of 3" x 5" cards (one labeled "A--Statements" and the other labeled "B--Guide Cards"); a Score Sheet with a block-like pyramid diagram; and a Values Instrument sheet.

Before you begin, there are two important directions. First, you will need a large, empty table on which to work; second, you will need to plan on a 45 minute to 1 hour time period to complete the task. As it will be difficult to be interrupted or to start over, try to set aside a quiet, long, time block.

A Hypothetical Situation

Imagine a particular library or information center (could be a public, academic, special, school or any other type of library). The library has always believed that staff members should have a service orientation. A position is open on the staff, and you are a member of the search committee to fill the position.

The new person will not be immediately assigned to a particular department or job category, but will rotate in several departments. Obviously, the person should be able to interact with the public, as well as with peers in each of the departments, plus be able to visualize the total working of the library. Each of the selected candidates meet basic requirements in terms of degrees, experience, and competencies. You are to consider what you believe to be the most desirable characteristics, beliefs, and behaviors for a person filling this position--keeping the service orientation strongly in mind.

General Remarks

You are being asked to participate in a somewhat unusual research technique in order to simulate how you would respond to the above situation. A group of 54 statements which reflect a variety of characteristics, beliefs, and behaviors have been compiled. You will be asked to rank these statements in importance as the most desirable to the least desirable. The particular ranking process is called Q-sorts.

Instructions

You will only need the two packs of 3" x 5" cards at the beginning. The other materials should be put aside for now.

Step 1: Arrange the 9 Guide Cards in a single row across the table, from 1-9.

Step 2: In terms of the hypothetical situation which has been presented to you and your opinions about what is important as desirable characteristics, beliefs, and behaviors for such a person, begin reading through the statements on the "A" cards in order to get a feeling for the types of statements and the variety of opinion expressed.

Step 3: Sort the cards in three separate piles. Put in a pile on your far left, the statements you feel are the most desirable. Put in a pile on your far right, the statements you feel are the least desirable. The statements you feel neutral, doubtful, or ambiguous about, place in a pile in the middle of the table.

Step 4: In order to keep the cards in some kind of order, make sure your Guide Cards are in a row across the middle of the table in front of you. Put the three piles you have already sorted under the Guide Cards: most desirable statements should be under Guide Card 1, the neutral pile under Guide Card 5, and the least desirable statements under Guide Card 9.

Step 5: Now, you are asked to subcategorize the three piles of cards into the 9 categories according to this procedure:

(A) Choose the 3 cards from the first pile of cards (under Guide Card 1) which contain statements you feel are the most desirable. Remember, you are reacting to the job candidate. Place these three cards over Guide Card 1. Notice the 3 in parentheses under the 1 on Guide Card 1.

(B) Choose the 3 cards from the third pile of cards (under Guide Card 9) which contain the statements you feel are the least desirable for the candidate. Place them over Guide Card 9. Keep them open to view, if possible.

(C) Now, move back to the first pile of cards and choose the 4 cards which contain statements you

feel are next most strongly desirable. Place them above Guide Card 2.

(D) Next, from the third pile of cards (on your right), choose the 4 cards which contain statements you feel are next least desirable. Place them above Guide Card 8.

(E) You are asked to continue subcategorizing the cards in this manner. Continue to work with a category on the left, and next on one to the far right, etc. Each category must have exactly the same number of cards as the number in the parentheses under the category number on each Guide Card. If you run out of cards in one of the three main piles, you will need to work with cards from the next pile (for example, if the least desirable group of cards is used up, work from the neutral pile).

(F) When you are through, the 12 cards representing pile 5 (and Guide Card 5) in the middle of all the piles of cards will contain statements about which you feel neutral, doubtful, ambiguous, etc. Feel free to change any card in any pile all through the sort, keeping the right number in each pile, however.

Step 6: Last, each card which you have placed in each pile has a number on the back, 1 through 54. The number of each of these statements is to be entered on the Q-Sort Score Sheet, in the correct column. The order of the statement numbers within any column does not make a difference; however, make sure that only one number is recorded in each block. Do not change or disturb any pile until all categories have been recorded in case of an incorrect number of statements in any pile.

Your Q-sort task is done. Thank you.

You are now asked to do one additional thing. Please respond to the Values Statement sheet.

Last, please put into the large, stamped, enclosed envelope for return to the researcher: the Score Sheet (pyramid diagram), the Values Statement Sheet, and the Background Sheet. (The Background Sheet is only being requested of leaders and practitioners.)

Your cooperation and interest in this study is sincerely appreciated! If you are interested in the results of the study, a summary sheet will be sent to you.

Q-SORT SCORE SHEET

NAME_____

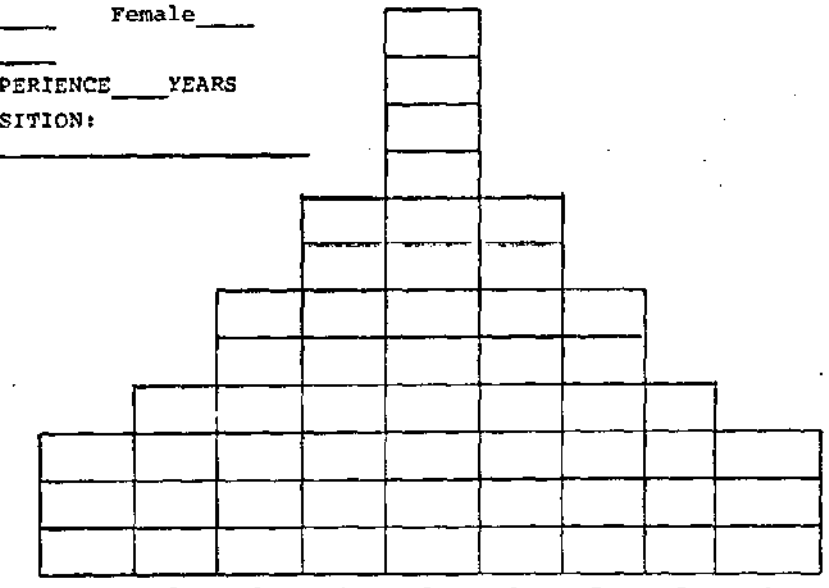
SEX: Male____ Female____

AGE: _____

LIBRARY EXPERIENCE____YEARS

CURRENT POSITION:

_____



Column No.	1	2	3	4	5	6	7	8	9
No. of Statements	(3)	(4)	(6)	(8)	(12)	(8)	(6)	(4)	(3)

= 54 statements

Most Desirable — Neutral, etc. — Least Desirable

Values Instrument

Below is a list of 10 values. I am interested in finding out the relative importance of these values to you.

Study the list carefully. Pick out the one value which is the most important to you, as a guiding principle in your life; place a "1" in front of that value. Then pick out the value which is second most important to you; place a "2" in front of that value. Then do the same for each of the remaining 8 values. The value which is least important to you should be ranked "10."

Work slowly and think carefully. If you change your mind, feel free to change your answers.

____ an opportunity to use my special abilities or aptitudes

____ a chance to earn a great deal of money

____ permit me to be creative and original

____ a sense of accomplishment by contributing to society

____ a chance to exercise leadership

____ opportunity to work with people rather than things

____ commitment to a profession

____ an opportunity to be helpful to others

____ social status and prestige

____ a stable, secure future

THANK YOU FOR YOUR EFFORTS IN HELPING WITH THIS STUDY.

Background Sheet for Leader and Practitioner Groups

If you have a vita or resume available, would you please attach it to this sheet (remove your name if you had rather). Would you also please respond to these brief questions:

1. What is your library specialty? _____

2. What did you initially prepare for in library education? (in terms of specialty, kind of library work)

_____

3. Do you associate yourself with a particular type of library? If so, what kind?

_____

4. What classification best describes your current (or last) position?

( ) Chief Librarian or Director
( ) Associate or Assistant Librarian
( ) Department or Division Head
( ) Head of School/Departmental Library
( ) Library School Educator
( ) Other (specify): _____

( ) Staff Librarian, with most duties in:
( ) Public Service
( ) Technical Processes
( ) Both Public/Technical Services
( ) Administration
( ) Audio-Visual Specialist
( ) Systems Analyst
( ) Other (specify): _____

5. Please indicate the library or information professional and/or scholarly organizations of which you are a member. Check your participation in each.

Organization	Member	Attend Meetings	Serve on Committees	Officer or Committee Chairman
ALA	___	___	___	___
ALA Divisions:				
_____	___	___	___	___
_____	___	___	___	___
_____	___	___	___	___
ARL	___	___	___	___
ASIS	___	___	___	___
SLA	___	___	___	___
AECT	___	___	___	___
Other: _____	___	___	___	___
_____	___	___	___	___

6. Marital status: Married ____ Single ____

7. Number of children: ____

APPENDIX F

IDEAL TYPES OF SERVICE ORIENTATION STATEMENTS

IDEAL TYPES OF SERVICE ORIENTATION STATEMENTS

Type 1, Traditional-Professional Type

Item 1 Feels that it is important to question a patron to ascertain actual needs when faced with a reference question.

Item 9 Believes in treating patrons with a business-like, reserved manner.

Item 13 Prefers to make decisions about how own work is to be performed.

Item 14 Wants to be involved in decision making.

Item 19 Feels that the best way to provide access for the most patrons is to follow circulation rules conscientiously.

Item 20 Believes materials should be organized following standards of the profession, i.e., classification, filing, subject heading rules, and schemes.

Item 29 Has a special interest in preserving the record of knowledge for the future.

Item 30 Is especially interested in building library collections.

Item 31 Is especially interested in introducing computer and other technological systems into the library setting.

Item 33 Is especially interested in working with a particular subject area.

Item 34 Actively participates in national library and information professional organizations.

Item 35 Tries to implement goals and standards of the profession into the local work situation.

Item 36 Does not believe in removing a book or magazine title considered important for the collection when a complaint is made.

Item 37 Reads current professional journals and books regularly to keep up-to-date.

Item 38 Feels an obligation to recruit qualified individuals into the library and information field.

Item 42 Expects to spend a major part of each day at work or on work-related activities.

Item 43 Believes it is essential to take courses, attend workshops, and meetings for self-improvement.

Item 49 Will initiate new program considered important even if potentially controversial.

Item 53 Acts according to personal convictions regardless of other's approval.

Type 2, Semiprofessional Type

Item 4 Believes in treating patrons with an open, personal manner.

Item 6 Accepts what patron initially says he wants when answering reference questions.

Item 10 Feels that staff members should spend time exclusively on needs and services of current patrons.

Item 11 Believes that library staff members need the direction of a supervisor.

Item 12 Believes libraries should be under the control of a policy-making board.

Item 18 Believes that materials should be organized in ways users will find the most convenient.

Item 21 Attempts to determine satisfaction of users with current services.

Item 25 Is especially interested in helping people.

Item 26 Would like to spend a majority of their time in working with people--both staff and patrons.

Item 44 Expects to be able to have time each day for recreational, cultural, family, or leisure activities.

Item 54 Needs to have approval expressed by patrons and colleagues.

Type 3, Open-Systems Type

Item 3 Feels that library staff members should act as a liaison to other libraries and agencies when not able to supply information.

Item 5 Feels it is important to go out to speak to groups about services of the library.

Item 15 Believes that the library staff should actively participate in work of their policy-making boards.

Item 16 Believes in meeting with potential user groups to assess needs and plan services.

Item 17 Believes that children and young adults should have access to other general collections besides those designated for them.

Item 23 Will plan services based on the needs of the total community.

Item 24 Feels it is important to assess needs of nonusers.

Item 27 Feels that interpersonal and communication skills are as important as knowledge of libraries and books.

Item 28 Wants to be involved in the process of bringing information and books together with people.

Item 40 Feels that all programs and services should reflect the goals of the particular library.

Item 45 Prefers to work in a challenging, constantly changing environment.

Item 46 Likes to be part of planning and implementing new programs.

Item 48 Experiments with new programs of potential interest.

Items Not Typed

Item 2 Feels it is important to provide instruction.

Item 7 Expects patrons to use reference tools by themselves.

Item 8 Feels that staff members might suggest that patrons try other libraries or agencies when not able to supply information.

Item 22 Believes that programs should be provided for groups with special needs only if additional resources are available.

Item 32 Wants to be in the quiet, peaceful atmosphere of books and libraries.

Item 39 Actively participates in local and/or state library and information professional organizations.

Item 41 Believes that librarians should support the library whenever complaints are heard from outsiders.

Item 47 Prefers to work in an orderly, predictable environment.

Item 50 Will initiate new programs and services only after they have proved successful in other libraries.

Item 51 Works to insure that all information given by library personnel is the most accurate information available.

Item 52 Takes for granted that library personnel gives out accurate information to patrons.

APPENDIX G

LETTERS TO THE PARTICIPANTS

Example 1: Student Letter No. 1

May 1975

Dear Student:

You may remember being involved in the first phase of my research study by completing a questionnaire in September. The purposes of that instrument were to assess your background and to ascertain your views about librarianship at the beginning of your library education program. At that time, I indicated that some of you would be asked to participate at a later date in the second phase of the study.

This study is concerned with the library profession as a group of people involved in diverse tasks for common goals. Three groups have been selected as subsets of the profession: library school students, library practitioners, and nationally known library leaders. It is hoped that the results of the study will provide important information to the field.

Your cooperation is especially needed in order to match the information you gave me in the fall with the results of this phase of the study. The success of this research study, therefore, depends on your cooperation. I realize how busy you are at this time of the year, being a student myself; however, it was necessary to wait until this time of the year to better assess your opinions at this time.

You may be happy to learn that this part of the study is not a questionnaire; in fact the technique being employed which is called Q-sorts may be a new technique to you. Hopefully, the process will be fun to do, and the total process should only take from 30-45 minutes to complete.

I have the results of the scale of values to share with anyone who would like to see them, and I will be willing to prepare a summary of the results of the student portion of the study for you by this summer.

Remember, that all information is strictly confidential. Your name is required only to match your information with the first phase of the study. Thank you for your participation and contribution to library research.

Sincerely yours,

[Signed]

Shirley Fitzgibbons
Candidate for the Ph.D.
Graduate School of Library Service
Rutgers, the State University

SF/dk

Example 2: Student Letter No. 2

May 1975

Dear GSLS Student:

I would like to make a special request that you cooperate in this research endeavor by Shirley Fitzgibbons, a current candidate for the Ph.D. in Library Service at Rutgers University. It is important to this study's success that the same group of students who participated in the first phase of her research project also complete this *second* phase.

I understand that students in the M.L.S. program are very busy at this time of the year; however, Ms. Fitzgibbons and I would especially appreciate the sacrifice of your time in participating in the study. I'm sure that you realize the need for research in our field and would like to contribute to the advancement of the profession in this way.

Thank you for your cooperation.

Sincerely,

[Signed]

Thomas H. Mott, Jr.
Dean

THM/dk

Example 3: Leader Letter No. 1

May 1975

Dear Colleague:

For my dissertation at the Graduate School of Library Service at Rutgers University, I am involved in a research project which I feel will be important to the library profession. A conceptual definition of service orientation is a major part of the study. An examination of the belief of library school students, library practitioners, and library leaders on service orientation will ascertain the degree of consensus or diversity among these groups.

You have been specially selected as a representative of the leader group in the field of library and information services. Your group will serve as the criterion group for the study. Though it is realized that people like yourself are especially busy and involved with professional activities as well as career assignments, it is felt that your participation in the study is essential. Your cooperation is urgently needed for the success of the study.

The data collection instrument is known as Q-sorts, a technique widely used in the research of communication and psychology. Due to the novelty of the technique and the importance of the concept of service orientation to the profession, it is hoped that you will enjoy participating in the study. The total process should take approximately 45 minutes to one hour; as it will take a rather large work area, it is suggested that you do it at a quiet time, rather in the middle of a busy work day.

All replies received will be kept in strictest confidence. In fact, it is not necessary to record your name on any part of the study; you will notice that a code has been devised that will identify you only as a respondent in the leader group.

Mary V. Gaver, Professor Emeritus of the Rutgers Library School, is a member of the advisory committee for this study. She expresses her particular hope that the leaders selected in this sample will respond to the measures included in this study which should prove important to the profession.

It would be greatly appreciated if you would complete the instrument as soon as possible and return it in the enclosed, stamped, self-addressed envelope. Your cooperation and time in helping this study be successful is sincerely acknowledged.

Sincerely yours,

[Signed]

Shirley Fitzgibbons
Candidate for the Ph.D.

[Signed]

Mary V. Gaver
Professor Emeritus

SF/dk

Example 4 : Leader Letter No. 2

May 1975

Dear Colleague :

About a month ago you were sent a data collection instrument known as Q-sorts and a request to participate in my research project concerning service orientation. Though the response rate has been good to date, your return would add authority and validity to the results.

I realize that as a leader in the profession you may be especially busy before and during the annual conference of the American Library Association. If you have misplaced your instruments, or if you have any questions about the study, I am available during ALA from June 27-July 8. I am staying at the Handlery Motor Inn, and have brought additional copies of the instruments to the conference.

After the conference and when things are quieter, I urge you to complete the instruments and return them to me as soon as possible. As you know, you have been selected as a representative of the leader group in the field of library and information services. Your participation is considered important to the success of my study as you represent a particular specialty of the total leader group.

Thank you for your cooperation as a participant in my study.

Sincerely,

[Signed]

Shirley Fitzgibbons
Candidate for the Ph.D.
Graduate School of Library Service
Rutgers, the State University

Example 5: Leader Letter No. 3

July 30, 1975

Dear

In May you were sent a data collection instrument known as Q-sorts and a request to participate in my research project concerning service orientation. I tried to contact as many of you as possible during the American Library Association Conference in San Francisco, and sent letters via the mail to all those I missed at the conference.

This letter is intended as a follow-up to the request that you participate in the study. Some of the subsets of the library profession are well represented in the responses; others are not as well represented. It is for this reason that I especially urge you to take the time necessary to complete the instruments sent to you to insure that the total professional leadership of our profession is adequately represented. As national leaders of the profession, this part of my study is essential as you form the criterion group, by which the other groups in the study will be measured.

I understand that many of you are probably vacationing at this time; however, I would like to ask you to complete the Q-Sort and the Values Instrument as soon as possible. I am processing the returns as soon as I receive them and will be able to use your return if received by the end of August.

If for any reason, you have misplaced the study instruments, drop me a note and I will send them to you without delay. Most respondents have indicated that they actually enjoyed their participation. Thank you for your cooperation in my study, and in forwarding the research base of our profession.

Sincerely yours,

[Signed]

Shirley Fitzgibbons
Candidate for the Ph.D.
Graduate School of Library Service
Rutgers, the State University

Example 6: Practitioner Letter No. 1

June 1975

Dear Colleague:

For my dissertation at the Rutgers Graduate School of Library Service, I am involved in a research project which I feel will be important to the library profession. Through an examination of the belief of library school students, library practitioners, and library leaders on service orientation I hope to ascertain the degree of consensus or diversity among these groups. A conceptual definition of service orientation is a major part of the study.

You have been selected from Rutgers GSLS alumni as a representative of the practitioner group. Though I realize that practitioners like yourself are especially busy and involved with professional activities as well as job assignments, I feel that your participation in the study is essential. Your cooperation is urgently needed for the success of the study.

The data collection instrument is known as Q-sorts, a technique widely used in the research of communication and psychology. Due to the novelty of the technique and the importance of the concept of service orientation to the profession, I hope that you will enjoy participating in the study. The total process should take approximately 45 minutes to one hour. As it will take a rather large work area, I suggest that you do it at a quiet time, rather than in the middle of a busy work day. A separate set of directions is included.

All replies received will be kept in strictest confidence. In fact, it is not necessary to record your name on any part of the study; you will notice that a code has been devised that will identify you only as a respondent in the practitioner group.

Mary V. Gaver, Professor Emeritus of the Rutgers Library School, is a member of the advisory committee for this study. She expresses her particular hope that the participants selected in this sample will respond to the measures included in this study which should prove important to the profession.

I would greatly appreciate it if you would complete the instrument as soon as possible and return it in the enclosed, stamped, self-addressed envelope. Your cooperation and time in helping this study be successful is sincerely acknowledged.

Sincerely yours,

[Signed]

Shirley Fitzgibbons
Candidate for the Ph.D.

[Signed]

Mary V. Gaver
Professor Emeritus

SF/dk

Enclosures

Example 7: Practitioner Letter No. 2

June 1975

Dear GSLS Alumni:

I would like to request that you cooperate with Shirley Fitzgibbons, a current candidate for the Ph.D. in Library Service at Rutgers University, in her research endeavor described by the enclosed materials. It is important to this study's success that the responses of a diverse group of practitioners be obtained.

We realize that practitioners in the library and information fields are very busy. However, Ms. Fitzgibbons and I would especially appreciate the sacrifice of your time in participating in the study. I'm sure that you realize the need for research in our field and would like to contribute to the advancement of the profession in this way.

Thank you for your cooperation.

Sincerely,

[Signed]

Thomas H. Mott, Jr.
Dean

THM/dk

Enclosures

Example 8: Practitioner Letter No. 3

July 12, 1975

Dear

About a month ago you were sent a data collection instrument known as Q-Sorts and a request to participate in my research project concerning service orientation. Though the response rate has been good to date, your return would add authority and validity to the final results. It is especially important in a small sample group such as that being used in this study that the response rate be as high as possible.

I realize that summer is both a busy time for vacations, family, and relaxation; however, I would appreciate it very much if you would take the approximately one hour to participate in my study.

If you have misplaced your instruments, or if you have any questions about the study, do not hesitate to call or to write concerning these matters. Also, if for any reason you are not working as a librarian at this time, I would still find the results of your Q-Sorts important to my study.

I would appreciate returns as soon after August 1st as possible, as I hope to complete the data analysis by the end of the summer. I will be glad to share a brief summary of the results of the study with you in return for your valuable help and time. Please indicate if you desire such a summary on the completed Q-Sort form.

Thank you for your cooperation as a participant in my study, and in forwarding the research base of our profession.

Sincerely yours,

[Signed]

Shirley Fitzgibbons
Candidate for the Ph.D.
Graduate School of Library Service
Rutgers, the State University

Example 9: Practitioner Letter No. 4

August 4, 1975

Dear

In June you were sent a data collection instrument known as Q-Sorts and a request to participate in my research project concerning service orientation. A follow-up letter was also sent to you in July indicating an August 1st deadline. Due to many vacations of practitioners, it seemed prudent to extend the last date for receiving returns until the end of August. Many respondents have indicated that this would be most convenient.

Also, several prospective respondents have indicated that they are not currently working in a library. I would still appreciate the results of your Q-Sorts as a representative of library school graduates. It seems very important to the study that as many types of library work be represented; therefore, I urge your cooperation as a participant in my study.

Returns are being processed as soon as they are being received, so an early return is preferred. If for any reason the original material has been misplaced, please do not hesitate to call me at my office in the Graduate Library School (201-932-7917) or to drop me a note at the above address and a duplicate will be mailed to you by first class mail.

Most of the respondents have indicated their enjoyment in completing the Q-Sorts. I hope you will reconsider your participation in the study and also enjoy the experience. Again, let me thank you for your cooperation and interest in the research process.

Sincerely,

[Signed]

Shirley A. Fitzgibbons
Candidate for the Ph.D.
Graduate School of Library Service
Rutgers, the State University

APPENDIX H

NOTES ON Q-METHODOLOGY

NOTES ON Q-METHODOLOGY

Stephenson in developing Q-methodology tried to emphasize the importance of the testing of theory and the principle of building this theory into the Q-sorts by the structured sample of items though most Q-sorts have used unstructured Q-sorts. A few definitions will clarify the terminology being used.

Unstructured vs. Structured Q-Sort

> An unstructured Q-sort is a set of items assembled without specific regard to the variables or factors underlying the items . . . like the items of a personality or attitude scale; they are selected and used because they presumably measure one broad variable, like *neuroticism*. . . .
>
> . . . In a structured Q-sort, the variables of a theory, or of a hypothesis, or set of hypotheses, are built into a set of items along Fisherian experimental and analysis of variance design principles [no longer a random sample of items from a population]. . . .[1]

Therefore, the Q-sort is "structured"--the theory one is attempting to build is within the Q-sort. Instead of measuring the characteristics of individuals and differences between individuals, the instruments are being constructed to represent a particular "theory."

A good example of building theory into a measurement instrument is the Allport-Vernon-Lindzey Study of Values.[2] The theory behind this instrument, i.e., types of men would be supported if individuals known with certain "values" such as a minister would select items characterized as the "ideal religious type of man." The

Q-sorts may be structured by a one-way structured sort

(with one basis of variable classification); a two-way (factorial) structured sort; or in other possibilities such as a 3 x 2, 4 x 3, 2 x 4, and even three- and four-variable designs though they are not too practicable.

Forced Sorting and Unforced Q-Sorting

A forced-sort procedure is one in which the sorter is requested to sort a set number of items or objects into various sets (or piles). He is "forced" by the procedure to have, for example, three most desirable, four neutral items, and three least desirable items. There is no choice for the respondent in terms of the number of most desirable, etc.

In an unforced-sort procedure, the sorter decides how many items to place within each set or pile of items. Block[3] found forced sorting equal or superior to unforced procedures. However, researchers differ on this matter. Kerlinger agrees that the forced sort can be most desirable in its usefulness for particular purposes--in forcing an individual to make discriminations they often do not make unless required to do so.

Pros and Cons of Q-Methodology

Q-methodology, according to Kerlinger, is controversial partly because of its liberal use of factor analysis, which has been criticized by many researchers. However, the strengths and weaknesses of the methodology must be weighed in terms of its general usefulness for a

particular purpose. A main strength is its usefulness in exploratory research. It can, for example, help to clarify important variables in a field of study--laying out the operational definitions and working hypotheses for further study. Strengths summarized by Kerlinger include:

1. Its close affinity to theory (especially in the use of structured Q-sorts)
2. Its particular value for the intensive study of an individual (one individual can be given several related Q-sorts or sort a particular Q-sort several times)
3. Its use to test the effects of independent variables on complex dependent variables (through analysis of variance and factor analysis of the data of a structured Q-sorts)
4. Its unusualness and consequent interest in the technique will encourage respondents to participate and actually enjoy the process
5. It is realistic in the sense that it is much like the real world (method forces one to rank items as priorities as budget constraints, etc., do in the real world).[4]

Kerlinger also summarizes the weaknesses of the methodology:

1. The need to use small size samples with Q-sort makes it not feasible for cross-sectional or large sample purposes, decreasing the generalizability of such studies
2. Statistically, the assumption of independence in statistical tests is violated by any forced-choice procedures (this is minimized if a large enough pool of items is used)
3. Some constraints and irritation result on the part of respondents when doing a forced choice Q-sort in the restriction of their freedom of choice
4. In Q, all individuals have the same general mean and standard deviation, i.e., ipsative scores, causing a loss of information on elevation and scatter; also

> two individuals might correlate highly due to similar profiles when in actuality, one individual might be high on a scale and the other low.[5]

An extensive bibliography on Q-methodology compiled in 1968[6] included more than 580 references on the technique and methodology. Applications of Q technique listed in the bibliography fall into the following categories: self-psychology, counseling and psychotherapy, personality theory and research, type psychology, clinical psychology, educational and child psychology, and social relations and social science. The bibliographer points to a growing interest in Q in a variety of social sciences: sociology, education, communication, and political science.

Examples of Q Studies

As one example of a Q study closely related to the current use of the methodology, an investigation by Kerlinger will be examined.[7] He studied educational attitudes of professors and laymen in an attempt to probe the attitude structure of a person. Two different "types of persons" were identified: the "progressives" (named Type A) and the "traditionalists" (named Type B). The differentiation was evident in an examination of the three highly approved items of each type. Type A highly approved of:

> Learning is experimental; the child should be taught to test alternatives before accepting any of them.
>
> No subject is more important than the personalities of the pupils.
>
> Right from the very first grade, teachers must teach the child at his own level and not at the level of the grade he is in.

Type B highly approved of these items:

> Learning is essentially a process of increasing one's store of information about the various fields of knowledge.
>
> The curriculum should contain an orderly arrangement of subjects that represent the best of our cultural heritage.
>
> Schools of today are neglecting the three R's.

Several leadership studies have utilized Q-methodology including the work of Fiedler[8] who examined leader attitudes as related to group effectiveness.

Use of Q-Methodology in the Current Study

For the purposes of this investigation, the advantages of Q-methodology outweighed the disadvantages which have been presented. A structured Q-sort was used since the study tested the theory about service orientations, the theoretically derived definitions, used as ideal types. Handling the data collected to measure the consensus that exists between the three library groups was easily accomplished through the QUANAL computer program. The exploratory and heuristic nature of the study allowed one to use small samples. The forced-choice ranking was a major advantage to the current study rather than a disadvantage, as it more adequately revealed areas of consensus (and differences) among the groups. Consequently, this particular Q-sort was structured by categories (based on theoretical definitions of service orientation), used a forced choice Q-sort, and employed small samples.

QUANAL Computer Program

The specific steps involved in the factor analysis procedure using QUANAL and employed in the current study are:

1. Correlation of each person's Q-sort with every other person's Q-sort, forming a matrix of intercorrelations.

2. The matrix of intercorrelations is submitted to factor analysis with each person as a variable and each item (statement) as an observation.

   a. First, a principal components solution is obtained.

   b. This is submitted to either varimax rotation (orthogonal factors) or oblimax rotation (oblique factors). Orthogonal rotation defines patterns regardless of their correlations. Both types of rotation will be attempted for comparison purposes. Each resulting factor represents a grouping of persons around a common pattern of sorting the items. It might be said that a factor represents a type of person.

   c. The loadings (coefficients) in the rotated factor solution can be looked at as each person's correlation with each of the "hypothetical" types.

3. Each person is assigned to the type they are most like (factor on which they load the highest). An actual weight derived from the following formula is computed using:

$$\text{weight} = \frac{r}{1-r^2}$$

   where r = loading

   The persons assigned to a type are both highly associated with the type and not associated very much with any of the other types. The weighted responses are summed across each item separately. An item array results.

4. Each weighted item score is converted to a z-score and forms the factor array (factor scores). (In an array, a z-score is equal to the weighted score

minus the mean and divided by the standard deviation.)

5. The factor arrays are ordered from most accepted to most rejected for each factor, providing a hierarchy of item acceptance for each factor (or type of person). This will be the most important summary data for this particular study.

6. Each factor array is compared with each other by subtraction. This tells what items differentiate one type from another. An array of difference scores is produced.

7. The last important step is the consensus items, those items of agreement across all the factors (types). This would mean that the z-scores on all factors would be nearly in agreement, or consensus (z-scores differences less than 1.00).[9]

Interpretation of Factor Solutions

Though there are several factor models, the one used in the QUANAL computer program is the principal components factoring which is concerned with patterning all the variations in a set of variables, whether common or unique variation. In this model, the correlation matrices always have 1.00 (unity), or the self-correlation of a variable in the principal diagonal.

The choice between orthogonal rotation or oblique rotation is based on the data of the study; though orthogonal factors are "mathematically simpler to handle . . . the oblique factors are empirically more realistic."[10] In other words, the factors obtained through an orthogonal rotation, which means that the factors are independent of each other (low correlations between factors), are easier to understand and interpret. However, most factors obtained on a concept or dimension are probably more

related (and more highly correlated to each other) if they could be examined in the "real world." For this study, the decision on rotational pattern is not necessary except post hoc, for both patterns will be attempted.

Two matrices are provided in each oblique solution. Authors differ on which matrix is the most important for interpretation. The basic matrix for interpretation of the factors, Gorsuch claims, is the factor structure matrix; an examination of the variables correlating high with the factor and those which correlate low, allows interpretation. Those variables with high loadings on the factor are like the factor; and those with zero or near-zero loadings, are not like the factor. An in-depth look at the like variables will ascertain the basis for the factor that has emerged; that is, what the variables have in common. However, it is important to realize the differences between the two matrices: a factor pattern matrix provides the weights to estimate the variables from the factors, and the factor structure matrix indicates the correlation between factors and variables. In an oblique solution, consequently, the factor pattern matrix will be used; in the orthogonal solution, the correlations of the variables with the factors are equal to the factor loadings and only one matrix is presented in the solution.

Comrey identifies the following three conditions to be considered in identifying the nature of a factor:

1. The higher the factor loadings, the greater is the

degree of overlapping true variance between the data variable and the factor and the more the factor is like the data variable in question. The square of the correlation of the variable with the factor is a good indication of the extent of the overlap. Dividing this figure by the reliability coefficient of the data variable gives the proportion of the data variable's true variance that it shares with the factor. It is also sometimes helpful to divide the correlation of a data variable with the factor by the square root of the reliability coefficient to get an idea about what the correlation between the two would be if the data variable were perfectly reliable.

2. The more factor pure a variable is that defines a factor, the easier it is to make inferences regarding the nature of the factor. If a complex data variable has a substantial loading on a given factor, it is difficult to determine from this information alone which of its many constituent parts is responsible. Data variables of great factor complexity offer little more help in the factor interpretation stage than they did in the factor rotation stage.

3. The greater the number of variables with a substantial loading on the factor, other things being equal, the easier it is to isolate what the factor probably represents. It is still possible to obtain an erroneous impression of the factor's character despite the availability of many highly loaded variables to define it, however, if the sample of variables is biased in some sense important to the factor definition. If the data variables included fail to represent some important aspect of the factor, for example, the picture of what the factor is like will be incomplete. The situation is somewhat analogous to the task of describing a person. Several important correct and revealing characteristics of an individual could be presented, but they might not tell the whole story. A man's employment history and background might look exceedingly impressive, but the inclusion of one additional item, for example, the information that he has spent the last two years in jail following conviction for embezzlement, could make a significant difference to a prospective employer.[11]

The question of what loading is sufficiently high to qualify as significant for interpretation, has no

definitive answer as there is no statistical test that can establish the significance level of a rotated factor loading. However, a fairly commonly used cutoff level for orthogonal factor loadings is .30; that is, no variable with a factor loading below .30 is listed among those data variables defining the factor. A squared value $(.30)^2$, or .09, indicates that a data variable correlating with the factor less than .30 has less than 10 percent of its variance in common with the factor. The other 90 plus percent lies elsewhere, in specific and common factors plus error.[12]

Comrey does not believe in accepting loadings of .30 and below; in fact, he suggests that .32 (10 percent of the variance) rates poor in factor interpretation, and rates loadings in the following way: .44, fair; .55, good; .63, very good; and .71, excellent.

In confirmation of Comrey's view, Gorsuch has suggested that elements greater than an absolute value of .40 could be interpreted if the analyses were based on 100 individuals, or .30, for an n of 175, and so forth.

The present investigation will accept the absolute value of .40 as a significant or salient loading based on the above discussion and the limits of the study: 203 persons in the sample and 54 items being analyzed as service items.

APPENDIX H: NOTES

[1]*Kerlinger*, Foundations of Behavioral Research, pp. 586-87.

[2]Allport et al., Study of Values.

[3]Jack Block, "A Comparison of Forced and Unforced Q-Sorting Procedures," Educational and Psychological Measurement 16 (Winter 1956):481-93.

[4]*Kerlinger*, Foundations of Behavioral Research, pp. 593-94.

[5]Ibid., pp. 594-96.

[6]Steven R. Brown, "Bibliography on Q Technique and Its Methodology," Perceptual and Motor Skills, Monograph Supplement 4-V26, 26 (1968):587-613.

[7]*Fred Kerlinger*, "The Attitude Structure of the Individual: A Q-Study of the Educational Attitudes of Professors and Laymen," Genetic Psychology Monographs 53 (1953):283-329.

[8]Fred E. Fiedler, Leader Attitudes and Group Effectiveness, Final report, ONR Project NR170-106, N6-ori-07135 (Urbana: University of Illinois Press, 1958).

[9]Richard Budd, "Analysis of the Q-Sort Data: Worked Example," n.d. (Typewritten.)

[10]Nie et al., SPSS, Statistical for the Social Sciences, p. 473.

[11]Comrey, A First Course in Factor Analysis, p. 225.

[12]Ibid.

APPENDIX I

COMBINED SAMPLE GROUP MATRICES

Example 1: Correlation Matrix

Example 2: Principal Components Factor Matrix

Example 3: Varimax Rotation: Simple Structure Matrix

Example 1: Correlation Matrix

CORRELATION MATRIX	1	2	3	4	5	6	7	8	9	10	11	12	13
VAR. 1 P102	1.0000	0.6552	0.6034	0.0517	0.6853	0.6250	0.5345	0.6034	0.6767	0.6983	0.6810	0.4914	0.5948
VAR. 2 P104	0.6552	1.0000	0.5948	-0.1638	0.5819	0.4181	0.4828	0.4655	0.7158	0.6940	0.5591	0.4526	0.4914
VAR. 3 P107	0.6034	0.5948	1.0000	0.1076	0.6707	0.4526	0.4741	0.4009	0.6940	0.6509	0.5259	0.3060	0.6638
VAR. 4 P108	0.0517	-0.1638	0.1076	1.0000	0.1293	0.1767	0.1379	0.1207	-0.0388	-0.0172	0.0259	-0.0043	0.0948
VAR. 5 P111	0.6853	0.5819	0.6707	0.1293	1.0000	0.5172	0.5431	0.4138	0.5043	0.6509	0.6207	0.5388	0.5948
VAR. 6 P114	0.6250	0.4181	0.4526	0.1767	0.5172	1.0000	0.5302	0.4655	0.4828	0.2345	0.4828	0.3966	0.4397
VAR. 7 P116	0.5345	0.4828	0.4741	0.1379	0.5431	0.5302	1.0000	0.5948	0.4578	0.5129	0.4310	0.4310	0.5474
VAR. 8 P119	0.6034	0.4655	0.4009	0.1207	0.4138	0.4655	0.5948	1.0000	0.4871	0.5388	0.5991	0.5345	0.5474
VAR. 9 P121	0.6767	0.7158	0.6940	-0.0388	0.5043	0.4828	0.3578	0.4871	1.0000	0.7716	0.6983	0.4397	0.4957
VAR. 10 P124	0.6983	0.6940	0.6509	-0.0172	0.6509	0.2345	0.5129	0.5388	0.7716	1.0000	0.7629	0.4784	0.5474
VAR. 11 P129	0.6810	0.5591	0.5259	0.0259	0.6207	0.4828	0.4310	0.5991	0.6983	0.7629	1.0000	0.4957	0.3448
VAR. 12 P130	0.4914	0.4526	0.3060	-0.0043	0.5388	0.3966	0.4310	0.5345	0.4397	0.4784	0.4957	1.0000	0.3276
VAR. 13 P131	0.5948	0.4914	0.6638	0.0948	0.5948	0.4397	0.5474	0.5474	0.4957	0.5474	0.3448	0.3276	1.0000
VAR. 14 P132	0.5948	0.5819	0.5647	-0.1853	0.6828	0.4440	0.5172	0.5129	0.5086	0.6250	0.4267	0.1190	0.4828
VAR. 15 P135	0.5302	0.6379	0.5388	0.0776	0.6293	0.6293	0.5431	0.4828	0.5733	0.7112	0.5948	0.4052	0.5086
VAR. 16 P137	0.6681	0.6853	0.7026	-0.0603	0.6595	0.4009	0.5216	0.1966	0.7069	0.7845	0.6810	0.4871	0.5647
VAR. 17 P141	0.7414	0.6940	0.6940	-0.0388	0.7155	0.4353	0.4353	0.3621	0.5517	0.6422	0.5431	0.4569	0.5474
VAR. 18 P142	0.7069	0.6940	0.6121	-0.0733	0.5819	0.5905	0.5086	0.6078	0.7371	0.7328	0.7328	0.5388	0.5517
VAR. 19 P143	0.7155	0.6681	0.6121	-0.0862	0.6681	0.5388	0.5647	0.5733	0.6681	0.8190	0.7586	0.4741	0.4784
VAR. 20 P146	0.6293	0.4784	0.6940	0.0302	0.6121	0.5172	0.4914	0.4009	0.5560	0.6379	0.6422	0.3836	0.4267
VAR. 21 P148	0.3836	0.5905	0.3534	0.1034	0.5948	0.5517	0.3793	0.3621	0.4784	0.3836	0.3836	0.2931	0.5181
VAR. 22 P15?	0.6897	0.6379	0.6681	0.2241	0.6466	0.6336	0.5302	0.5086	0.6595	0.7500	0.5388	0.4483	0.5776
VAR. 23 P155	0.6034	0.5259	0.4741	0.1250	0.5690	0.6293	0.5905	0.4784	0.4784	0.5862	0.5000	0.4181	0.4698
VAR. 24 P156	0.4612	0.6164	0.5517	0.0517	0.4526	0.4828	0.4224	0.4233	0.5405	0.5991	0.4526	0.2802	0.6897
VAR. 25 P159	0.7543	0.6422	0.6293	0.0517	0.5991	0.5345	0.5043	0.4784	0.7457	0.8060	0.7414	0.3922	0.5043
VAR. 26 P160	0.6422	0.6336	0.6034	0.0474	0.5948	0.4483	0.4914	0.4741	0.7155	0.8405	0.7543	0.4181	0.4741
VAR. 27 P168	0.7241	0.6897	0.6552	0.1207	0.6552	0.6422	0.6767	0.6207	0.6422	0.7759	0.6293	0.4957	0.5948
VAR. 28 P176	0.7198	0.5172	0.5216	0.0129	0.6422	0.5819	0.5474	0.5862	0.5431	0.6293	0.6638	0.5000	0.4698
VAR. 29 P181	0.7500	0.5172	0.5517	0.0991	0.6293	0.6638	0.5560	0.5086	0.6379	0.6509	0.6552	0.4698	0.4698

VAR. 30 P186	0.7198	0.7241	0.5517	-0.0695	0.7284	0.5043	0.5388	0.4698	0.5991	0.6638	0.4560	0.3603	0.5560	
VAR. 31 P214	0.4612	0.3879	0.4741	0.0774	0.3103	0.3793	0.3793	0.1853	0.3707	0.4655	0.3491	0.1552	0.3664	
VAR. 32 P215	0.6983	0.6552	0.7026	0.0086	0.6897	0.4224	0.3664	0.4784	0.7328	0.7672	0.7284	0.4957	0.5086	
VAR. 33 P226	0.5991	0.6724	0.5603	0.0307	0.5905	0.3922	0.4871	0.5388	0.6422	0.7759	0.6940	0.5129	0.4310	
VAR. 34 P231	0.6509	0.6422	0.6767	-0.0345	0.5560	0.4397	0.5000	0.4181	0.6509	0.6552	0.6336	0.4397	0.4914	
VAR. 35 P234	0.7069	0.6638	0.7112	0.0474	0.6552	0.5690	0.5129	0.4828	0.7543	0.7500	0.6897	0.5172	0.5603	
VAR. 36 P235	0.7241	0.5690	0.5345	0.0819	0.7222	0.5259	0.5905	0.5216	0.5776	0.7716	0.6810	0.5948	0.4138	
VAR. 37 P236	0.6422	0.5647	0.5474	0.0733	0.6853	0.4009	0.4569	0.3362	0.5086	0.6940	0.5431	0.4310	0.4009	
VAR. 38 P237	0.6250	0.4698	0.5129	0.1121	0.5948	0.5431	0.4569	0.5905	0.5388	0.5690	0.6121	0.5690	0.5172	
VAR. 39 P239	0.4181	0.4871	0.4052	0.2112	0.2759	0.4698	0.4267	0.4784	0.4784	0.5086	0.4784	0.3922	0.2586	
VAR. 40 P242	0.6293	0.7586	0.7112	-0.0431	0.5819	0.5474	0.5733	0.3966	0.7112	0.7802	0.6638	0.4784	0.5000	
VAR. 41 P243	0.2371	0.2371	0.2716	-0.0043	0.2629	0.1379	0.1250	0.0043	0.2586	0.3147	0.2500	0.0560	0.1293	
VAR. 42 P244	0.5388	0.4914	0.4914	0.0388	0.3922	0.4224	0.5819	0.4440	0.4353	0.6164	0.4138	0.3362	0.4957	
VAR. 43 P252	0.6681	0.6552	0.5991	-0.0086	0.6121	0.5172	0.4914	0.3362	0.7457	0.7026	0.5819	0.4741	0.4095	
VAR. 44 P253	0.6724	0.6466	0.6897	0.1552	0.6078	0.5000	0.5647	0.5086	0.6293	0.6897	0.5603	0.3836	0.5431	
VAR. 45 P254	0.6940	0.7026	0.7284	0.0776	0.6293	0.5043	0.5216	0.5043	0.6509	0.7845	0.6810	0.4957	0.5172	
VAR. 46 P257	0.4698	0.4440	0.3621	0.0388	0.3922	0.3362	0.4655	0.4483	0.4655	0.5259	0.4828	0.3276	0.3836	
VAR. 47 P258	0.7112	0.6638	0.5905	0.1207	0.6853	0.5905	0.6509	0.5991	0.6293	0.7414	0.6853	0.5216	0.6034	
VAR. 48 P260	0.5603	0.4784	0.4612	0.2931	0.4871	0.4397	0.5259	0.5259	0.4957	0.5043	0.4267	0.4655	0.4353	
VAR. 49 P265	0.5776	0.5129	0.5000	0.0259	0.5388	0.5388	0.4828	0.4526	0.6638	0.6293	0.5991	0.4483	0.4095	
VAR. 50 P266	0.5905	0.5948	0.5690	0.1379	0.5776	0.4224	0.4440	0.3836	0.6724	0.7802	0.6638	0.4909	0.7802	
VAR. 51 P267	0.7155	0.4483	0.6940	0.0690	0.5259	0.4267	0.3793	0.4655	0.6638	0.6767	0.7026	0.2672	0.4957	
VAR. 52 P268	0.7284	0.5603	0.6724	0.1164	0.6250	0.5948	0.4483	0.5776	0.7457	0.6638	0.6897	0.5302	0.5603	
VAR. 53 P269	0.6595	0.6552	0.6250	0.1293	0.5905	0.4440	0.5086	0.4310	0.7284	0.7371	0.7716	0.3664	0.3621	
VAR. 54 P276	0.6121	0.7026	0.5647	0.1034	0.5431	0.4612	0.6078	0.4914	0.6681	0.6034	0.5991	0.4224	0.5000	
VAR. 55 P287	0.6466	0.7500	0.7414	0.0560	0.6422	0.5517	0.5216	0.4009	0.7629	0.7543	0.6422	0.4138	0.5086	
VAR. 56 P288	0.0647	0.2414	-0.0647	-0.0905	0.0474	0.2414	0.0690	0.0517	0.1509	0.0043	0.0388	0.1293	0.0690	
VAR. 57 P289	0.4828	0.3190	0.4483	0.1336	0.4052	0.3319	0.3233	0.3362	0.3276	0.2629	0.3017	0.2371	0.2155	
VAR. 58 P295	0.6250	0.5991	0.6509	0.0647	0.6336	0.4871	0.5905	0.5690	0.6853	0.7069	0.6767	0.5474	0.5905	
VAR. 59 P298	0.5948	0.5560	0.6509	0.0259	0.6250	0.5000	0.4698	0.3922	0.6379	0.6638	0.6422	0.4914	0.5129	
VAR. 60 P299	0.6897	0.6810	0.6853	-0.0302	0.6552	0.4957	0.5259	0.4871	0.6940	0.7845	0.6293	0.5345	0.5345	

VAR*	61 P6	0.6638	0.6999	0.6638	0.1034	0.6250	0.4564	0.4741	0.5086	0.7419	0.8017	0.7898	0.3707	0.4310							
VAR*	62 P7	0.7328	0.6374	0.6681	0.1427	0.6999	0.6202	0.5968	0.5991	0.6985	0.6226	0.6696	0.5991								
VAR*	63 P8	0.6952	0.6336	0.6904	0.1437	0.5819	0.5043	0.4957	0.5388	0.6726	0.7088	0.7802	0.6660	0.5129							
VAR*	64 P9	0.6638	0.6983	0.6422	0.1008	0.5862	0.5431	0.5345	0.5122	0.6681	0.7457	0.7069	0.6612	0.4741							
VAR*	65 P10	0.6036	0.5302	0.6250	0.1259	0.6612	0.3729	0.3742	0.5998	0.6952	0.6323	0.4287	0.5960								
VAR*	66 P11	0.7026	0.6552	0.5991	-0.0044	0.5517	0.4897	0.5842	0.6810	0.7279	0.7974	0.7986	0.5560	0.5349							
VAR*	67 P12	0.7629	0.5276	0.6167	0.1994	0.7069	0.5388	0.5517	0.6121	0.6952	0.7069	0.6810	0.6293	0.6121							
VAR*	68 P13	0.7586	0.5647	0.5819	0.0737	0.5776	0.5431	0.5816	0.5345	0.7326	0.6897	0.7112	0.5960	0.4969							
VAR*	69 P14	0.5905	0.6422	0.5819	0.2284	0.5517	0.4655	0.4397	0.4569	0.6810	0.7128	0.6034	0.5690	0.4397							
VAR*	70 P15	0.6592	0.6164	0.5991	0.2324	0.5948	0.5259	0.5129	0.5216	0.6202	0.7241	0.6952	0.5216	0.4741							
VAR*	71 P16	0.6893	0.7586	0.7069	0.0816	0.6197	0.5948	0.5216	0.5043	0.7226	0.7241	0.6336	0.4095	0.5216							
VAR*	72 P17	0.5388	0.6526	0.6741	0.2414	0.5733	0.5043	0.5130	0.4310	0.6538	0.6078	0.5819	0.5233	0.3190							
VAR*	73 P18	0.5302	0.6828	0.5388	0.1946	0.5866	0.5302	0.4393	0.4957	0.6250	0.4957	0.6741	0.4638	0.4181							
VAR*	74 P19	0.6476	0.5662	0.6909	0.0084	0.5603	0.4397	0.3448	0.5776	0.7586	0.5647	0.3163	0.5129								
VAR*	75 P20	0.6828	0.6526	0.6741	-0.0384	0.4181	0.2974	0.3534	0.3448	0.5216	0.4655	0.2914	0.3319								
VAR*	76 P21	0.7629	0.6853	0.7321	0.0417	0.6897	0.4393	0.5560	0.1845	0.7716	0.7586	0.5345	0.5603								
VAR*	77 P22	0.6895	0.6634	0.7414	0.2297	0.7026	0.5302	0.4655	0.4767	0.7069	0.6995	0.3190	0.6078								
VAR*	78 P23	0.5862	0.5302	0.6204	0.0237	0.5172	0.3578	0.4095	0.4052	0.6034	0.6595	0.6034	0.3448	0.4655							
VAR*	79 P24	0.5819	0.6336	0.6336	0.1121	0.5647	0.4655	0.1829	0.3448	0.6466	0.6250	0.5862	0.4310	0.1922							
VAR*	80 P25	0.6250	0.5259	0.5733	0.0694	0.5690	0.5345	0.5991	0.3922	0.5647	0.6853	0.5172	0.2457	0.5560							
VAR*	81 P26	0.6422	0.5733	0.5690	0.0517	0.5733	0.6250	0.4828	0.4741	0.5819	0.5474	0.5733	0.5690	0.4526							
VAR*	82 P27	0.6569	0.3578	0.4224	0.1557	0.3448	0.3664	0.3621	0.3405	0.5345	0.5631	0.4009	0.3966	0.2372							
VAR*	83 P28	0.6552	0.5474	0.5905	0.0607	0.6293	0.4483	0.3405	0.4526	0.7457	0.7112	0.7716	0.5259	0.4871							
VAR*	84 P29	0.6078	0.5733	0.5603	0.0384	0.5991	0.5259	0.4483	0.4828	0.5560	0.6943	0.6250	0.4224	0.4526							
VAR*	85 P30	0.5735	0.5129	0.5733	0.0127	0.6698	0.3276	0.4009	0.4181	0.5560	0.9276	0.6336	0.3664	0.2316							
VAR*	86 P31	0.6293	0.5086	0.5862	0.1464	0.5172	0.3578	0.4009	0.5259	0.6336	0.5733	0.5819	0.4526	0.4914							
VAR*	87 P32	0.6552	0.5905	0.6164	-0.0120	0.6078	0.5776	0.4267	0.1922	0.5431	0.6767	0.5259	0.4784	0.4828							
VAR*	88 P33	0.6638	0.6336	0.6164	-0.0814	0.5086	0.5172	0.4622	0.2414	0.7802	0.7112	0.4095	0.4784	0.4310							
VAR*	89 P34	0.5991	0.5302	0.6164	0.0574	0.6121	0.4353	0.2974	0.4397	0.4483	0.6207	0.5388	0.4181	0.4138							
VAR*	90 P35	0.6466	0.6466	0.6995	0.0697	0.5424	0.3664	0.4526	0.5172	0.7326	0.6767	0.6164	0.3603	0.5690							

	14	15	16	17	18	19	20	21	22	23	24	25	26
VAR, 1 P102	0.5948	0.5302	0.6681	0.7414	0.7069	0.7155	0.6293	0.3836	0.6897	0.6034	0.4612	0.7563	0.6422
VAR, 2 P104	0.5819	0.6379	0.6953	0.6940	0.6940	0.6681	0.4784	0.5905	0.6379	0.5259	0.6164	0.6422	0.6336
VAR, 3 P107	0.5067	0.5388	0.7026	0.6940	0.6121	0.6121	0.6940	0.3534	0.6681	0.4741	0.5517	0.6293	0.6034
VAR, 4 P108	-0.1853	0.0776	-0.0603	-0.0388	-0.0733	-0.0862	0.0302	0.1034	0.2241	0.1250	0.0517	0.0517	0.0474
VAR, 5 P113	0.4828	0.5259	0.6595	0.7155	0.5819	0.6681	0.6121	0.3448	0.6466	0.5690	0.4526	0.5991	0.5948
VAR, 6 P114	0.4440	0.4224	0.4009	0.4353	0.5905	0.3188	0.5172	0.5517	0.6336	0.6293	0.4828	0.5345	0.4483
VAR, 7 P116	0.5172	0.5431	0.5216	0.4353	0.5086	0.5647	0.4914	0.3793	0.5302	0.5905	0.4224	0.5043	0.4914
VAR, 8 P119	0.5129	0.4828	0.3966	0.3621	0.6078	0.5733	0.4009	0.3621	0.5086	0.4784	0.3233	0.4784	0.4741
VAR, 9 P121	0.5086	0.5733	0.7069	0.5517	0.7371	0.6681	0.5560	0.4784	0.6595	0.4784	0.5905	0.7457	0.7155
VAR, 10 P124	0.6250	0.7112	0.7845	0.6422	0.7328	0.8190	0.6379	0.3836	0.7500	0.5862	0.5991	0.8060	0.8405
VAR, 11 P129	0.4267	0.5948	0.6810	0.5431	0.7328	0.7586	0.6422	0.3836	0.5388	0.5000	0.4526	0.7414	0.7543
VAR, 12 P130	0.3190	0.4052	0.4741	0.4569	0.5388	0.4741	0.3836	0.2931	0.4483	0.4181	0.2802	0.3922	0.4181
VAR, 13 P131	0.4828	0.5086	0.5647	0.5474	0.5517	0.4784	0.4267	0.4181	0.5776	0.4698	0.4957	0.5043	0.4741
VAR, 14 P132	1.0000	0.3017	0.5948	0.5259	0.6164	0.6595	0.4741	0.3491	0.5647	0.4440	0.5086	0.6207	0.6138
VAR, 15 P135	0.3017	1.0000	0.6595	0.4310	0.5388	0.6422	0.4612	0.4310	0.6595	0.5560	0.4784	0.5948	0.7328
VAR, 16 P137	0.5948	0.6595	1.0000	0.7069	0.6379	0.7716	0.6552	0.3578	0.6379	0.5690	0.5560	0.6509	0.6853
VAR, 17 P141	0.5259	0.4310	0.7069	1.0000	0.5819	0.6422	0.6724	0.3750	0.6207	0.4612	0.4052	0.6207	0.5086
VAR, 18 P142	0.6164	0.5388	0.6379	0.5819	1.0000	0.7371	0.6078	0.3603	0.7328	0.5216	0.5216	0.6940	0.6853
VAR, 19 P143	0.6595	0.6422	0.7716	0.6422	0.7371	1.0000	0.7284	0.4181	0.6638	0.6509	0.5043	0.7414	0.8147
VAR, 20 P146	0.4741	0.4612	0.6552	0.6724	0.6078	0.7284	1.0000	0.3707	0.4957	0.5000	0.4009	0.6853	0.5948
VAR, 21 P148	0.3491	0.4310	0.3578	0.3750	0.3603	0.4181	0.3707	1.0000	0.5647	0.4526	0.4784	0.3534	0.3319
VAR, 22 P151	0.5647	0.6595	0.6379	0.6207	0.7328	0.6638	0.4957	0.5647	1.0000	0.5603	0.5733	0.5991	0.6336
VAR, 23 P155	0.4440	0.5560	0.5690	0.4612	0.5216	0.6509	0.5000	0.4526	0.5603	1.0000	0.5517	0.5388	0.5517
VAR, 24 P156	0.5086	0.4784	0.5560	0.4052	0.5216	0.5043	0.4009	0.4784	0.5733	0.5517	1.0000	0.6121	0.5302
VAR, 25 P159	0.4267	0.5948	0.6509	0.6207	0.6940	0.7414	0.6853	0.3534	0.5991	0.5388	0.6121	1.0000	0.8103
VAR, 26 P160	0.6138	0.7328	0.6853	0.5086	0.6853	0.8147	0.5948	0.3319	0.6336	0.5517	0.5302	0.8103	1.0000
VAR, 27 P168	0.6293	0.6810	0.7328	0.6767	0.6638	0.7931	0.5905	0.4957	0.7198	0.7414	0.5086	0.6638	0.6638
VAR, 28 P176	0.6207	0.4440	0.6250	0.5905	0.6207	0.6983	0.5172	0.3621	0.5302	0.6595	0.4310	0.5948	0.5560
VAR, 29 P181	0.4440	0.5517	0.5603	0.5991	0.6724	0.6638	0.5302	0.4353	0.6595	0.4698	0.2716	0.6250	0.6379

VAR. 30 P186	0.5560	0.5345	0.6336	0.681*	0.6295	0.6638	0.4440	0.4440	0.6983	0.4698	0.4914	0.6379	0.6078	
VAR. 31 P214	0.3922	0.4526	0.5259	0.482*	0.3319	0.5000	0.4181	0.3017	0.5560	0.2931	0.4095	0.4698	0.3966	
VAR. 32 P215	0.5345	0.5948	0.7402	0.6427	0.6595	0.7500	0.5690	0.3621	0.6810	0.4741	0.5302	0.6897	0.7543	
VAR. 33 P220	0.5086	0.7198	0.6466	0.5647	0.6681	0.7284	0.5129	0.3621	0.6552	0.5603	0.5560	0.6940	0.7155	
VAR. 34 P231	0.3362	0.6422	0.6379	0.607*	0.6638	0.6034	0.6121	0.3793	0.5560	0.4914	0.4871	0.7026	0.6552	
VAR. 35 P234	0.5474	0.6681	0.7500	0.6164	0.7198	0.7284	0.5431	0.5043	0.7931	0.5000	0.5991	0.6724	0.7026	
VAR. 36 P235	0.5474	0.6681	0.6897	0.6293	0.6336	0.7974	0.6509	0.2759	0.7112	0.5259	0.4828	0.7457	0.7026	
VAR. 37 P236	0.4569	0.5474	0.6638	0.6121	0.4181	0.6595	0.5905	0.2716	0.5259	0.4957	0.4569	0.6207	0.5388	
VAR. 38 P237	0.4526	0.4828	0.5517	0.517*	0.6422	0.5603	0.4483	0.4138	0.6422	0.4397	0.4267	0.5819	0.5431	
VAR. 39 P239	0.3233	0.4828	0.3836	0.331*	0.4310	0.3707	0.3405	0.4440	0.5690	0.4052	0.4310	0.4353	0.4440	
VAR. 40 P242	0.5388	0.6897	0.7888	0.637*	0.7026	0.7328	0.6250	0.5259	0.7457	0.5388	0.6681	0.6681	0.7241	
VAR. 41 P243	0.1379	0.4526	0.3879	0.232*	0.0129	0.3664	0.2672	0.0905	0.1724	0.2414	0.3879	0.2621	0.3405	
VAR. 42 P244	0.3578	0.6379	0.4914	0.474*	0.4698	0.5776	0.4655	0.3750	0.5259	0.4224	0.3664	0.5991	0.6293	
VAR. 43 P252	0.5474	0.5000	0.7500	0.5647	0.5905	0.7069	0.6034	0.4353	0.6638	0.5819	0.6121	0.6681	0.6595	
VAR. 44 P253	0.4784	0.7414	0.6466	0.5567	0.5733	0.6595	0.5690	0.3621	0.7371	0.4871	0.5345	0.5905	0.7026	
VAR. 45 P254	0.5905	0.6422	0.7284	0.7117	0.6207	0.7888	0.6509	0.4052	0.6853	0.5647	0.5086	0.6509	0.7155	
VAR. 46 P257	0.4483	0.4569	0.5259	0.258*	0.4871	0.4181	0.3103	0.1853	0.5043	0.3060	0.4741	0.4828	0.4612	
VAR. 47 P258	0.5905	0.5690	0.6767	0.6466	0.6681	0.7284	0.4914	0.4569	0.7026	0.5690	0.5216	0.6207	0.6638	
VAR. 48 P260	0.4741	0.3448	0.5000	0.4784	0.4871	0.4612	0.3793	0.4224	0.6595	0.5043	0.3879	0.3707	0.3621	
VAR. 49 P265	0.5129	0.4871	0.6164	0.4741	0.6552	0.6983	0.6164	0.4267	0.5431	0.6724	0.4698	0.6466	0.5948	
VAR. 50 P266	0.4181	0.5690	0.6552	0.5007	0.5819	0.7198	0.6207	0.2672	0.6293	0.4741	0.6207	0.7931	0.7931	
VAR. 51 P267	0.5733	0.4828	0.6595	0.5991	0.6422	0.6509	0.5345	0.2629	0.6466	0.4138	0.4224	0.6552	0.6207	
VAR. 52 P268	0.5517	0.5000	0.7112	0.6595	0.6552	0.6638	0.5259	0.4569	0.6810	0.5086	0.5043	0.6293	0.5905	
VAR. 53 P269	0.5431	0.6379	0.7500	0.5647	0.6940	0.7586	0.5690	0.4655	0.6853	0.5388	0.6293	0.7457	0.7414	
VAR. 54 P276	0.4655	0.5517	0.6121	0.482*	0.7198	0.6767	0.5302	0.5259	0.6466	0.5431	0.6810	0.6595	0.6595	
VAR. 55 P287	0.5043	0.6940	0.7328	0.6509	0.6466	0.7629	0.6164	0.5302	0.6983	0.5948	0.6552	0.7328	0.7155	
VAR. 56 P288	0.2198	0.0776	0.1854	-0.0647	0.2888	0.0043	-0.0603	0.4052	0.1853	0.2155	0.2672	-0.1164	-0.0991	
VAR. 57 P289	0.2802	0.1810	0.2845	0.4699	0.2457	0.3362	0.4095	0.2112	0.3534	0.3621	0.1379	0.2888	0.1810	
VAR. 58 P295	0.5129	0.6638	0.6336	0.5647	0.6767	0.7198	0.4828	0.4310	0.6422	0.5905	0.4569	0.5819	0.7457	
VAR. 59 P298	0.4397	0.6595	0.6810	0.5474	0.6509	0.7328	0.4914	0.4052	0.6810	0.5172	0.5216	0.6336	0.7155	
VAR. 60 P299	0.7026	0.5862	0.7716	0.6422	0.7198	0.7672	0.5172	0.3664	0.7672	0.5690	0.5862	0.6207	0.6767	

VAR. 61 P6	0.5172	0.5690	0.6681	0.5568	0.7284	0.7284	0.5474	0.3534	0.7198	0.4698	0.6336	0.7629	0.7888	
VAR. 62 P7	0.6034	0.5474	0.5948	0.6811	0.7672	0.7241	0.5517	0.4397	0.7112	0.5733	0.4914	0.7069	0.6638	
VAR. 63 P8	0.5172	0.6164	0.7241	0.5560	0.6853	0.8319	0.6422	0.4052	0.5905	0.6121	0.7069	0.8190	0.8190	
VAR. 64 P9	0.5690	0.6466	0.7112	0.6164	0.6466	0.7629	0.6164	0.4784	0.7543	0.5474	0.5819	0.6853	0.7198	
VAR. 65 P10	0.5388	0.5000	0.6293	0.6077	0.5948	0.6422	0.5000	0.2888	0.5948	0.4612	0.5733	0.5733	0.5172	
VAR. 66 P11	0.5948	0.5603	0.6595	0.5733	0.7845	0.7328	0.5603	0.4957	0.6983	0.5819	0.5733	0.7112	0.7069	
VAR. 67 P19	0.5862	0.6121	0.6810	0.6552	0.6638	0.6940	0.5776	0.4224	0.7241	0.6078	0.5690	0.6336	0.6552	
VAR. 68 P20	0.3534	0.5431	0.6250	0.6422	0.6638	0.6767	0.5819	0.4052	0.6293	0.6121	0.4440	0.7284	0.7026	
VAR. 69 P21	0.4353	0.7155	0.6724	0.4914	0.5776	0.6207	0.4655	0.4009	0.7241	0.5517	0.6379	0.6724	0.6595	
VAR. 70 P26	0.4267	0.6466	0.6981	0.5647	0.6509	0.7198	0.5560	0.4181	0.7500	0.6207	0.4828	0.6552	0.6897	
VAR. 71 P29	0.6078	0.5647	0.7026	0.6983	0.6595	0.7112	0.6552	0.5474	0.7974	0.4655	0.6207	0.6767	0.6121	
VAR. 72 P43	0.3276	0.5862	0.5216	0.4353	0.4009	0.6121	0.4957	0.2328	0.5431	0.5560	0.5216	0.5776	0.6336	
VAR. 73 P46	0.3879	0.4095	0.5000	0.4569	0.5172	0.5259	0.4440	0.5474	0.5862	0.5216	0.5603	0.5129	0.4741	
VAR. 74 P52	0.5086	0.6250	0.7112	0.5862	0.5302	0.6940	0.5905	0.3147	0.5345	0.5905	0.6509	0.6810	0.6638	
VAR. 75 P54	0.4181	0.3966	0.5647	0.4267	0.3793	0.6034	0.4569	0.2414	0.3750	0.3707	0.4483	0.4784	0.5043	
VAR. 76 P55	0.6164	0.5862	0.7543	0.6810	0.7284	0.7069	0.5819	0.5000	0.7155	0.4871	0.5991	0.7284	0.6897	
VAR. 77 P60	0.5302	0.5172	0.7155	0.6638	0.6681	0.6940	0.6207	0.3534	0.7155	0.5517	0.6552	0.6638	0.5862	
VAR. 78 P62	0.4612	0.5129	0.6595	0.5474	0.5733	0.6336	0.5431	0.3405	0.5819	0.4353	0.5345	0.5905	0.5733	
VAR. 79 P63	0.4353	0.5517	0.5819	0.4655	0.5388	0.5302	0.4353	0.3534	0.6336	0.5086	0.7586	0.6207	0.5733	
VAR. 80 P67	0.4698	0.5905	0.5948	0.5216	0.5517	0.7069	0.4741	0.4181	0.6552	0.6466	0.5086	0.6810	0.6638	
VAR. 81 P68	0.4741	0.5948	0.6034	0.5862	0.5905	0.6595	0.4828	0.4698	0.5733	0.5517	0.4181	0.5603	0.5603	
VAR. 82 P72	0.4569	0.4698	0.4569	0.2716	0.3147	0.5216	0.2931	0.2328	0.5129	0.5129	0.4957	0.4052	0.5086	
VAR. 83 P73	0.4483	0.4526	0.6121	0.5216	0.6724	0.6767	0.5302	0.3707	0.5733	0.3879	0.5259	0.7241	0.7112	
VAR. 84 P76	0.4957	0.5000	0.5216	0.5345	0.6336	0.7112	0.4698	0.5172	0.6293	0.5517	0.5216	0.6379	0.6638	
VAR. 85 P79	0.4957	0.4698	0.5474	0.5776	0.6336	0.6983	0.5259	0.3707	0.6336	0.2759	0.3578	0.5388	0.5259	
VAR. 86 P83	0.2457	0.5302	0.6207	0.5948	0.4957	0.6034	0.5172	0.2672	0.5474	0.4483	0.3621	0.6250	0.5690	
VAR. 87 P90	0.5129	0.5517	0.6250	0.4483	0.6078	0.7414	0.5819	0.3534	0.7112	0.5905	0.4483	0.5948	0.6767	
VAR. 88 P93	0.5172	0.6552	0.7414	0.5690	0.6595	0.7974	0.6078	0.3836	0.6422	0.5517	0.6207	0.7888	0.7802	
VAR. 89 P95	0.4397	0.4526	0.5948	0.5517	0.4698	0.5172	0.4526	0.1638	0.4698	0.3621	0.3448	0.4871	0.4784	
VAR. 90 P98	0.4655	0.5302	0.6552	0.5647	0.6853	0.8319	0.6853	0.3879	0.6509	0.6293	0.5345	0.6810	0.6810	

		27	28	29	30	31	32	33	34	35	36	37	38	39
VAR. 1 P102		0.7241	0.7198	0.7500	0.719*	0.4612	0.6983	0.5991	0.6504	0.7069	0.7241	0.6422	0.6250	0.4181
VAR. 2 P104		0.6897	0.5172	0.5172	0.7241	0.3879	0.6552	0.6724	0.6422	0.6638	0.5690	0.5647	0.4698	0.4871
VAR. 3 P107		0.6552	0.5216	0.5517	0.551*	0.4741	0.7026	0.5603	0.6767	0.7112	0.5345	0.5474	0.5129	0.4052
VAR. 4 P108		0.1207	0.0129	0.0991	-0.069*	0.0776	0.0086	0.0302	-0.0345	0.0474	0.0388	0.0733	0.1121	0.2328
VAR. 5 P113		0.6552	0.6422	0.6293	0.728*	0.3103	0.6897	0.5905	0.5560	0.6552	0.7112	0.6853	0.5948	0.2756
VAR. 6 P114		0.6422	0.5815	0.6638	0.504*	0.3793	0.6724	0.5922	0.6379	0.6940	0.5259	0.6009	0.5431	0.4698
VAR. 7 P116		0.6767	0.5474	0.5560	0.556*	0.3793	0.3664	0.4871	0.5000	0.5129	0.5905	0.4569	0.4569	0.4267
VAR. 8 P119		0.6207	0.5862	0.5086	0.469*	0.2853	0.4784	0.5388	0.4181	0.4828	0.5216	0.3362	0.5905	0.4784
VAR. 9 P121		0.6422	0.5431	0.6379	0.559*	0.3707	0.7328	0.5862	0.6509	0.7543	0.5776	0.5086	0.5388	0.4784
VAR. 10 P124		0.7759	0.6293	0.6509	0.663*	0.4655	0.7672	0.7759	0.6552	0.7500	0.7716	0.6940	0.5690	0.5086
VAR. 11 P129		0.6293	0.6638	0.6552	0.556*	0.3491	0.7284	0.6940	0.6336	0.6897	0.6810	0.5431	0.6121	0.4784
VAR. 12 P130		0.4957	0.5000	0.4698	0.560*	0.3552	0.4957	0.5129	0.4397	0.5172	0.5948	0.4310	0.5690	0.3922
VAR. 13 P131		0.5948	0.4698	0.4698	0.556*	0.3664	0.5086	0.4310	0.4914	0.5603	0.4138	0.4009	0.5172	0.2586
VAR. 14 P132		0.6293	0.6207	0.4440	0.556*	0.3922	0.5345	0.5086	0.3362	0.5474	0.5474	0.4569	0.4526	0.3233
VAR. 15 P135		0.6810	0.6440	0.5517	0.534*	0.4526	0.5948	0.7198	0.6422	0.6681	0.6681	0.5474	0.6828	0.6828
VAR. 16 P137		0.7328	0.6250	0.5603	0.611*	0.5259	0.7802	0.6466	0.6379	0.7500	0.6897	0.6638	0.5517	0.3836
VAR. 17 P141		0.6767	0.5905	0.5991	0.681*	0.4828	0.6422	0.5647	0.6078	0.6164	0.6293	0.6121	0.5172	0.3319
VAR. 18 P142		0.6638	0.6207	0.6724	0.629*	0.3319	0.6595	0.6681	0.6638	0.7198	0.6336	0.6181	0.6422	0.4310
VAR. 19 P143		0.7931	0.6983	0.6638	0.663*	0.5000	0.7500	0.7284	0.6034	0.7284	0.7974	0.6595	0.5603	0.3707
VAR. 20 P146		0.5905	0.5172	0.5302	0.444*	0.4181	0.5690	0.5129	0.6121	0.5431	0.6509	0.5905	0.4483	0.3405
VAR. 21 P148		0.4957	0.3621	0.4353	0.444*	0.3017	0.3621	0.3621	0.3793	0.5043	0.2759	0.2716	0.4138	0.4440
VAR. 22 P151		0.7198	0.5302	0.6595	0.698*	0.5560	0.6810	0.6552	0.5560	0.7931	0.7112	0.5259	0.6422	0.5690
VAR. 23 P155		0.7414	0.6595	0.4871	0.469*	0.2931	0.4741	0.5603	0.4914	0.5000	0.5259	0.4957	0.4397	0.4052
VAR. 24 P156		0.5086	0.4310	0.2716	0.491*	0.4095	0.5302	0.5560	0.4871	0.5991	0.4828	0.4569	0.4267	0.4310
VAR. 25 P159		0.6638	0.5948	0.6250	0.637*	0.4698	0.6897	0.6940	0.7026	0.6724	0.7457	0.6207	0.5819	0.4353
VAR. 26 P160		0.6638	0.5560	0.6379	0.607*	0.3966	0.7543	0.7155	0.6552	0.7026	0.7026	0.5388	0.5431	0.4440
VAR. 27 P168		1.0000	0.7241	0.7328	0.668*	0.4440	0.6552	0.7672	0.6552	0.6724	0.7629	0.7198	0.6078	0.4957
VAR. 28 P176		0.7241	1.0000	0.6078	0.590*	0.2716	0.7112	0.6034	0.4784	0.5905	0.6034	0.5216	0.5776	0.1983
VAR. 29 P181		0.7328	0.6078	1.0000	0.599*	0.3190	0.6552	0.5345	0.5345	0.6336	0.6897	0.5172	0.6034	0.4052

VAR. 30 P196	0.6681	0.5909	0.5991	1.0000	0.3922	0.7328	0.6164	0.5948	0.7328	0.6853	0.6250	0.5601	0.3060	
VAR. 31 P214	0.4440	0.2716	0.3190	0.3927	1.0000	0.3793	0.4655	0.4138	0.6509	0.4914	0.4612	0.3836	0.4052	
VAR. 32 P215	0.6552	0.7112	0.5991	0.7328	0.3793	1.0000	0.6983	0.6293	0.7672	0.6509	0.6466	0.6078	0.3103	
VAR. 33 P226	0.7672	0.6034	0.5345	0.6164	0.4655	0.6983	1.0000	0.6422	0.6897	0.7543	0.6638	0.6034	0.4397	
VAR. 34 P231	0.6552	0.4784	0.5345	0.5948	0.4138	0.6293	0.6422	1.0000	0.7112	0.6509	0.6810	0.5388	0.4698	
VAR. 35 P234	0.6724	0.5905	0.6336	0.7328	0.6509	0.7672	0.6897	0.7112	1.0000	0.7155	0.6293	0.6207	0.5043	
VAR. 36 P235	0.7629	0.6034	0.6897	0.6853	0.4914	0.6509	0.7543	0.6509	0.7155	1.0000	0.7241	0.6379	0.4828	
VAR. 37 P236	0.7198	0.5216	0.5172	0.6250	0.4612	0.6466	0.6638	0.6810	0.6293	0.7241	1.0000	0.6095	0.3017	
VAR. 38 P237	0.6078	0.5776	0.6034	0.5603	0.3836	0.6078	0.6034	0.5388	0.6207	0.6379	0.6095	1.0000	0.5302	
VAR. 39 P239	0.4957	0.1983	0.4052	0.3060	0.4052	0.3103	0.4397	0.4698	0.5043	0.4828	0.3017	0.5302	1.0000	
VAR. 40 P242	0.7500	0.5172	0.5905	0.6897	0.5388	0.7026	0.7069	0.6940	0.7500	0.6767	0.6638	0.5216	0.5000	
VAR. 41 P243	0.1621	0.2500	0.1207	0.2112	0.5129	0.3147	0.4741	0.3147	0.3319	0.4095	0.4483	0.1810	0.1810	
VAR. 42 P244	0.6509	0.3966	0.6121	0.5216	0.3966	0.4957	0.4655	0.6121	0.5000	0.6121	0.4914	0.4698	0.4741	
VAR. 43 P252	0.6509	0.5776	0.5603	0.5991	0.5129	0.6853	0.6078	0.5647	0.7371	0.6595	0.6552	0.5431	0.5431	
VAR. 44 P253	0.7112	0.4914	0.6121	0.5905	0.5000	0.6897	0.7026	0.6336	0.7457	0.6983	0.6293	0.5000	0.5172	
VAR. 45 P254	0.7931	0.6034	0.6552	0.6466	0.5776	0.7155	0.7328	0.6336	0.7414	0.7026	0.7069	0.5129	0.5000	
VAR. 46 P257	0.1966	0.4138	0.2586	0.4698	0.4095	0.5259	0.5172	0.4483	0.5129	0.5345	0.3060	0.5690	0.3578	
VAR. 47 P258	0.8664	0.6810	0.7500	0.7198	0.4569	0.6724	0.7026	0.6034	0.7112	0.6983	0.6638	0.6078	0.5086	
VAR. 48 P260	0.5862	0.4483	0.4698	0.4267	0.4138	0.4095	0.4440	0.3707	0.5431	0.5172	0.4353	0.5216	0.6638	
VAR. 49 P265	0.6638	0.6250	0.5647	0.4524	0.4095	0.6293	0.5948	0.5603	0.6078	0.6078	0.5431	0.5474	0.3707	
VAR. 50 P266	0.5948	0.4483	0.4655	0.5819	0.4871	0.6595	0.6940	0.6336	0.7284	0.7328	0.6509	0.4224	0.4957	
VAR. 51 P267	0.6034	0.5991	0.6207	0.5172	0.5862	0.6983	0.5948	0.5733	0.7500	0.6336	0.4483	0.5991	0.4353	
VAR. 52 P268	0.7026	0.7026	0.6940	0.5862	0.4612	0.6940	0.6379	0.5776	0.8060	0.6552	0.4957	0.6983	0.5259	
VAR. 53 P269	0.6853	0.6509	0.6164	0.6034	0.4957	0.7543	0.7457	0.6034	0.7888	0.7112	0.5603	0.5517	0.4353	
VAR. 54 P276	0.6767	0.4784	0.5905	0.5948	0.4181	0.6078	0.6336	0.5733	0.6422	0.5948	0.4871	0.4784	0.4224	
VAR. 55 P287	0.8017	0.5776	0.6379	0.6767	0.4698	0.7069	0.7026	0.7457	0.8017	0.7241	0.7112	0.6078	0.4612	
VAR. 56 P288	0.0302	0.0259	-0.0302	0.1250	-0.0474	0.0086	0.0172	0.0302	0.1207	-0.0603	-0.0905	0.1897	0.1078	
VAR. 57 P289	0.4181	0.3103	0.4569	0.2112	0.2931	0.2716	0.2500	0.3879	0.3491	0.3664	0.4698	0.3190	0.4181	
VAR. 58 P295	0.7457	0.6767	0.6983	0.6250	0.3879	0.6853	0.7155	0.6422	0.7284	0.6250	0.5603	0.5862	0.4612	
VAR. 59 P298	0.7284	0.6121	0.7026	0.6767	0.3793	0.7500	0.7500	0.6164	0.7241	0.7328	0.5474	0.6767	0.5103	
VAR. 60 P299	0.7672	0.5991	0.6552	0.7672	0.4698	0.7802	0.7026	0.6940	0.7802	0.7672	0.6897	0.5776	0.4569	

VAR*	90 P48	0.6293	0.5086	0.5690	0.6127	0.4181	0.1241	0.7414	0.5948	0.7321	0.5862	0.3145	0.5527	0.4483									
VAR*	89 P95	0.6164	0.5517	0.5102	0.5387	0.2286	0.6638	0.5517	0.5365	0.5388	0.5819	0.8666	0.5233	0.3050									
VAR*	88 P93	0.7328	0.5991	0.6250	0.5949	0.5905	0.6599	0.1371	0.4634	0.7716	0.7697	0.5560	0.5216	0.4828									
VAR*	87 P90	0.6569	0.5905	0.5129	0.6374	0.5302	0.6207	0.5964	0.5726	0.6329	0.6767	0.4784	0.5474	0.4009									
VAR*	86 P83	0.6267	0.4354	0.5302	0.4617	0.4612	0.5647	0.9517	0.5690	0.6810	0.5726	0.5043	0.5086	0.4440									
VAR*	85 P79	0.5647	0.6000	0.5941	0.4826	0.4353	0.4914	0.5496	0.5496	0.6853	0.6666	0.4397	0.4821	0.4741									
VAR*	84 P76	0.6638	0.4957	0.5647	0.4914	0.5233	0.5603	0.6293	0.4957	0.6207	0.6250	0.5302	0.4655	0.4612									
VAR*	83 P73	0.5690	0.6432	0.6207	0.6276	0.7231	0.6893	0.5733	0.6897	0.6184	0.5905	0.6379	0.3342										
VAR*	82 P72	0.6925	0.4741	0.4009	0.3627	0.4099	0.4353	0.5276	0.7934	0.5960	0.5726	0.4828	0.4267	0.4612									
VAR*	81 P68	0.6853	0.5815	0.4136	0.3607	0.5122	0.5214	0.5776	0.6329	0.6810	0.6696	0.5000	0.6121	0.5043									
VAR*	80 P67	0.7402	0.5991	0.6126	0.6127	0.5066	0.5527	0.6448	0.5276	0.6121	0.6595	0.5259	0.4914	0.1350									
VAR*	79 P63	0.5345	0.4095	0.4224	0.3517	0.4310	0.5991	0.6579	0.5726	0.7026	0.5862	0.5133	0.4741	0.4129									
VAR*	78 P62	0.5690	0.4741	0.5102	0.5307	0.1819	0.6622	0.5647	0.5560	0.7299	0.6034	0.5431	0.6655	0.4926									
VAR*	77 P60	0.6207	0.6207	0.4871	0.6257	0.3836	0.7543	0.5862	0.6121	0.7198	0.6078	0.5998	0.5819	0.3707									
VAR*	76 P55	0.7155	0.7328	0.7241	0.6987	0.4821	0.8343	0.7026	0.5994	0.8276	0.6767	0.6666	0.6787	0.4440									
VAR*	75 P54	0.5647	0.4138	0.3750	0.3759	0.3233	0.4569	0.4915	0.5043	0.4483	0.5431	0.6078	0.4726	0.4009									
VAR*	74 P52	0.6983	0.5603	0.4569	0.3914	0.3578	0.6638	0.7241	0.5560	0.5726	0.6164	0.6595	0.3743	0.2759									
1																							
VAR*	73 P48	0.6169	0.6741	0.5259	0.4224	0.1214	0.4914	0.5000	0.4698	0.5819	0.4914	0.3319	0.4153	0.4121									
VAR*	72 P43	0.6250	0.6741	0.6926	0.4184	0.4052	0.4741	0.5733	0.4184	0.5647	0.6724	0.5819	0.3966	0.3836									
VAR*	71 P29	0.7284	0.6259	0.5940	0.6987	0.5431	0.1198	0.6897	0.6379	0.7543	0.7026	0.6078	0.6293	0.5690									
VAR*	70 P26	0.7888	0.6743	0.6179	0.6024	0.4655	0.6336	0.7586	0.7026	0.7928	0.7931	0.6250	0.5726	0.5819									
VAR*	69 P21	0.7026	0.6259	0.6526	0.6427	0.4821	0.6893	0.7799	0.6422	0.7672	0.7543	0.6207	0.6431	0.5862									
VAR*	68 P20	0.6897	0.6893	0.6422	0.6079	0.3554	0.7112	0.6592	0.6207	0.6897	0.6379	0.5603	0.5726	0.4526									
VAR*	67 P19	0.7321	0.7158	0.6509	0.7024	0.3836	0.7457	0.6893	0.6681	0.7414	0.7284	0.6422	0.7284	0.4099									
VAR*	66 P11	0.7026	0.7569	0.7541	0.5904	0.4052	0.6224	0.6893	0.5603	0.6897	0.6595	0.5000	0.6293	0.5603									
VAR*	65 P10	0.6164	0.6121	0.4440	0.5214	0.5129	0.7069	0.7026	0.5560	0.6250	0.5517	0.6164	0.6655	0.3578									
VAR*	64 P9	0.6767	0.6250	0.5814	0.4099	0.4121	0.7586	0.6810	0.5647	0.8119	0.7112	0.5733	0.5474	0.5000									
VAR*	63 P8	0.6983	0.6964	0.5603	0.5124	0.4181	0.7457	0.7284	0.5560	0.6724	0.6983	0.5474	0.5198	0.3836									
VAR*	62 P7	0.6231	0.6893	0.7172	0.1241	0.4612	0.6422	0.7586	0.6552	0.6940	0.7155	0.6121	0.6682	0.4224									
VAR*	61 P6	0.6940	0.6078	0.6810	0.6121	0.4009	0.7500	0.7284	0.5862	0.7284	0.6810	0.5733	0.5733	0.4310									

	40	41	42	43	44	45	46	47	48	49	50	51	52
VAR. 1 P102	0.6293	0.2371	0.5388	0.6687	0.6724	0.6940	0.4698	0.7112	0.5603	0.5776	0.5905	0.7155	0.7284
VAR. 2 P104	0.7586	0.2371	0.4914	0.6557	0.6466	0.7026	0.4440	0.6638	0.4784	0.5129	0.5948	0.4483	0.5603
VAR. 3 P107	0.7112	0.2716	0.4914	0.5997	0.6897	0.7284	0.3621	0.5905	0.4612	0.5000	0.5690	0.6940	0.6724
VAR. 4 P108	-0.0431	-0.0043	0.0388	-0.0086	0.1552	0.0776	0.0388	0.1207	0.2931	0.0259	0.1379	0.0690	0.1164
VAR. 5 P113	0.5819	0.2629	0.3922	0.6121	0.6078	0.6293	0.3972	0.6853	0.4871	0.5388	0.5172	0.5259	0.6250
VAR. 6 P114	0.5474	0.1379	0.4224	0.5172	0.5000	0.5043	0.3362	0.5905	0.4397	0.5388	0.4224	0.4267	0.5948
VAR. 7 P116	0.5733	0.1250	0.5819	0.4914	0.5647	0.5216	0.4655	0.6509	0.5259	0.4828	0.4440	0.3233	0.4483
VAR. 8 P119	0.3966	0.0043	0.4440	0.3362	0.5086	0.5043	0.4483	0.5991	0.5259	0.4526	0.3836	0.4655	0.5776
VAR. 9 P121	0.7112	0.2586	0.4353	0.7457	0.6293	0.6509	0.4655	0.6293	0.4957	0.6638	0.6724	0.6638	0.7457
VAR. 10 P124	0.7802	0.3147	0.6164	0.7026	0.6897	0.7845	0.5259	0.7414	0.5043	0.6293	0.7802	0.6767	0.6638
VAR. 11 P129	0.6638	0.2500	0.4138	0.5819	0.5603	0.6810	0.4828	0.6853	0.4267	0.5991	0.6638	0.7026	0.6897
VAR. 12 P130	0.4784	0.0560	0.3362	0.4741	0.3836	0.4957	0.3276	0.5216	0.4655	0.4483	0.4009	0.2672	0.5302
VAR. 13 P131	0.5000	0.1293	0.4957	0.4009	0.5431	0.5172	0.3836	0.6034	0.4353	0.4095	0.2802	0.4957	0.5603
VAR. 14 P132	0.5388	0.1379	0.3578	0.5474	0.4784	0.5905	0.4483	0.5905	0.4741	0.5129	0.4181	0.5733	0.5517
VAR. 15 P135	0.6897	0.4526	0.6379	0.5000	0.7414	0.6422	0.4569	0.5690	0.3448	0.6897	0.5690	0.6828	0.5000
VAR. 16 P137	0.7888	0.3879	0.4914	0.7500	0.6466	0.7284	0.5259	0.6767	0.5000	0.6164	0.6552	0.6595	0.7112
VAR. 17 P141	0.6379	0.2328	0.4741	0.5647	0.5560	0.7112	0.2586	0.6466	0.4784	0.4741	0.5000	0.5991	0.6595
VAR. 18 P142	0.7026	0.0129	0.4698	0.5905	0.5733	0.6207	0.4871	0.6681	0.5991	0.6552	0.5819	0.6422	0.6552
VAR. 19 P143	0.7328	0.3664	0.5776	0.7069	0.6595	0.7888	0.4181	0.7284	0.4612	0.6983	0.7198	0.6509	0.6638
VAR. 20 P146	0.6250	0.2672	0.4655	0.6035	0.5690	0.6509	0.3103	0.6983	0.3793	0.6164	0.6207	0.5345	0.5259
VAR. 21 P148	0.5259	0.0905	0.3750	0.4353	0.3621	0.6052	0.3853	0.6509	0.6724	0.6767	0.2672	0.2629	0.4569
VAR. 22 P151	0.7457	0.1724	0.5259	0.6638	0.7371	0.6853	0.5043	0.7026	0.6595	0.5431	0.6293	0.6466	0.6810
VAR. 23 P155	0.5388	0.2414	0.4224	0.5819	0.4871	0.5647	0.3060	0.5690	0.5043	0.6724	0.4741	0.4138	0.5086
VAR. 24 P156	0.6681	0.2845	0.3664	0.6121	0.5345	0.5086	0.4741	0.5216	0.3879	0.6638	0.6207	0.4224	0.5043
VAR. 25 P159	0.6681	0.3621	0.5991	0.6681	0.5905	0.6509	0.4828	0.6207	0.3707	0.6466	0.7931	0.6552	0.6293
VAR. 26 P160	0.7241	0.3405	0.6293	0.6595	0.7026	0.7155	0.4612	0.6638	0.3621	0.5948	0.7931	0.6207	0.5905
VAR. 27 P168	0.7500	0.3621	0.6509	0.6509	0.7112	0.7931	0.3966	0.8664	0.5862	0.6638	0.5948	0.6034	0.7026
VAR. 28 P176	0.6121	0.2500	0.3966	0.5733	0.4914	0.6034	0.4138	0.6810	0.4483	0.6250	0.4483	0.5991	0.7026
VAR. 29 P181	0.5905	0.1207	0.6121	0.5603	0.6121	0.6552	0.2586	0.7500	0.6638	0.5647	0.6638	0.6207	0.6940

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VAR. 61 P6	0.7799	0.3147	0.4828	0.6767	0.7155	0.7241	0.5302	0.7716	0.5259	0.5603	0.7802	0.6724	0.6853	
VAR. 62 P7	0.7414	0.2328	0.5474	0.5948	0.6379	0.7155	0.4569	0.7405	0.5000	0.5690	0.6121	0.6336	0.6595	
VAR. 63 P8	0.7241	0.4095	0.5345	0.6940	0.6379	0.6595	0.4741	0.6767	0.3922	0.6379	0.7629	0.6466	0.6293	
VAR. 64 P9	0.7716	0.3103	0.4784	0.7371	0.7328	0.7414	0.5172	0.7155	0.5129	0.6250	0.7457	0.6552	0.6595	
VAR. 65 P10	0.6638	0.3276	0.4095	0.5991	0.5603	0.6767	0.3922	0.6336	0.4267	0.5517	0.5431	0.6293	0.5862	
VAR. 66 P11	0.7457	0.2026	0.5043	0.6897	0.6250	0.7069	0.4655	0.8319	0.5690	0.6336	0.6207	0.6422	0.7457	
VAR. 67 P19	0.6724	0.2026	0.4828	0.6034	0.6250	0.6767	0.4440	0.7198	0.5043	0.5948	0.5733	0.6724	0.7500	
VAR. 68 P20	0.6207	0.2845	0.4397	0.6853	0.6422	0.6250	0.2931	0.6336	0.5172	0.6379	0.6379	0.6422	0.7155	
VAR. 69 P21	0.7241	0.4914	0.4741	0.6810	0.7112	0.6897	0.5048	0.6681	0.5345	0.5517	0.7629	0.5517	0.6509	
VAR. 70 P26	0.6724	0.3017	0.5733	0.6121	0.7284	0.7457	0.5000	0.7284	0.5776	0.6078	0.7328	0.6164	0.6422	
VAR. 71 P29	0.7931	0.3362	0.4784	0.7759	0.7500	0.6810	0.5905	0.7414	0.6121	0.5948	0.6853	0.6121	0.7241	
VAR. 72 P43	0.6207	0.4741	0.4526	0.5474	0.6336	0.5560	0.3966	0.5776	0.3448	0.3664	0.6983	0.4569	0.4741	
VAR. 73 P46	0.9172	0.2586	0.3966	0.5991	0.4957	0.5560	0.2241	0.6164	0.5216	0.4655	0.5086	0.4784	0.7586	
VAR. 74 P52	0.6552	0.4397	0.4871	0.5862	0.6078	0.7112	0.4103	0.5948	0.2629	0.5388	0.6509	0.4914	0.4259	
VAR. 75 P54	0.5517	0.4526	0.4526	0.5647	0.5129	0.5991	0.2716	0.5776	0.4095	0.3922	0.5690	0.3319	0.5086	
VAR. 76 P55	0.7069	0.2931	0.4440	0.7328	0.6897	0.7198	0.4138	0.7328	0.4957	0.6121	0.6422	0.7629	0.8233	
VAR. 77 P60	0.6810	0.2069	0.3707	0.6379	0.6250	0.6293	0.5388	0.6466	0.5000	0.5862	0.6336	0.6466	0.6552	
VAR. 78 P62	0.5733	0.2672	0.4353	0.5948	0.6595	0.6034	0.3793	0.5388	0.5172	0.4871	0.6810	0.6164	0.6078	
VAR. 79 P63	0.6897	0.3836	0.2802	0.6595	0.6724	0.6078	0.4397	0.5474	0.4138	0.4397	0.6853	0.4914	0.5948	
VAR. 80 P67	0.6293	0.4181	0.6078	0.6121	0.5517	0.6379	0.4138	0.7457	0.5000	0.4957	0.5560	0.6207	0.6164	
VAR. 81 P68	0.5991	0.4526	0.4612	0.5474	0.5862	0.6552	0.3836	0.6207	0.5259	0.5560	0.5129	0.5862	0.7414	
VAR. 82 P72	0.4957	0.4741	0.4397	0.5776	0.5388	0.5690	0.4009	0.5172	0.5647	0.4612	0.5388	0.4828	0.5345	
VAR. 83 P73	0.6293	0.2716	0.3060	0.6767	0.5991	0.6121	0.4310	0.6724	0.4526	0.5905	0.6336	0.6293	0.7198	
VAR. 84 P76	0.5948	0.2155	0.3966	0.5948	0.5991	0.6983	0.2543	0.6422	0.4397	0.5172	0.6681	0.5000	0.6336	
VAR. 85 P79	0.5733	0.1940	0.3319	0.5733	0.5560	0.5474	0.2672	0.5862	0.4397	0.3922	0.5733	0.6638	0.6724	
VAR. 86 P81	0.5388	0.3362	0.4181	0.6121	0.6983	0.6034	0.2931	0.5991	0.4914	0.5388	0.6121	0.5560	0.6767	
VAR. 87 P90	0.6983	0.3578	0.5690	0.6121	0.5905	0.6897	0.5345	0.5862	0.5302	0.4828	0.6207	0.5862	0.5776	
VAR. 88 P91	0.7672	0.4009	0.5603	0.7629	0.6681	0.7069	0.4741	0.7112	0.5000	0.5862	0.7672	0.7328	0.7155	
VAR. 89 P95	0.6638	0.3620	0.4914	0.6638	0.5862	0.6034	0.4181	0.5474	0.5474	0.4655	0.6897	0.4871	0.5216	
VAR. 90 P98	0.6767	0.2069	0.3578	0.6940	0.6466	0.7198	0.3836	0.6810	0.4526	0.5086	0.6595	0.5862	0.7112	

		53	54	55	56	57	58	59	60	61	62	63	64	65
VAR. 1 P102		0.6595	0.6121	0.6966	0.0647	0.4828	0.6250	0.5948	0.6897	0.6638	0.7326	0.6552	0.6638	0.6034
VAR. 2 P104		0.6552	0.7026	0.7500	0.2414	0.3190	0.5991	0.5560	0.6810	0.6595	0.6379	0.6336	0.6983	0.5302
VAR. 3 P107		0.6250	0.5647	0.7414	-0.0647	0.5603	0.5509	0.6509	0.6853	0.6638	0.6681	0.5905	0.6422	0.6250
VAR. 4 P108		0.1293	0.1034	0.0560	-0.0905	0.1336	0.0647	0.0754	-0.0302	0.1034	0.1422	0.0431	0.0086	0.0259
VAR. 5 P113		0.5905	0.5431	0.6422	0.0474	0.4052	0.6336	0.6250	0.6552	0.6250	0.6595	0.5819	0.5862	0.4612
VAR. 6 P114		0.4440	0.4612	0.5517	0.2414	0.3319	0.4871	0.5000	0.4957	0.5043	0.6207	0.5043	0.5431	0.3879
VAR. 7 P116		0.5086	0.6078	0.5216	0.0697	0.3235	0.3905	0.4698	0.5259	0.4741	0.6422	0.4957	0.5345	0.3750
VAR. 8 P119		0.6310	0.4914	0.6009	0.0517	0.8362	0.3690	0.3922	0.4871	0.5086	0.5948	0.5388	0.5172	0.4741
VAR. 9 P121		0.7284	0.6681	0.7629	0.1509	0.3276	0.6853	0.6379	0.6940	0.7414	0.5991	0.6724	0.6681	0.5948
VAR. 10 P124		0.7371	0.6034	0.7541	0.0991	0.2629	0.7069	0.6638	0.7845	0.8017	0.6983	0.7888	0.7457	0.6552
VAR. 11 P129		0.7716	0.5991	0.6422	0.0388	0.3017	0.6767	0.6422	0.6293	0.7888	0.6724	0.7802	0.7069	0.6121
VAR. 12 P130		0.3664	0.4224	0.4138	0.1259	0.2371	0.5474	0.4914	0.5345	0.3707	0.4698	0.4440	0.4612	0.4267
VAR. 13 P131		0.5431	0.5000	0.5086	0.0690	0.2155	0.5905	0.5129	0.5345	0.4310	0.5991	0.5129	0.4741	0.4871
VAR. 14 P132		0.5431	0.4655	0.5043	0.2198	0.2802	0.5129	0.4397	0.7026	0.5172	0.6034	0.5172	0.5690	0.5388
VAR. 15 P135		0.6379	0.5517	0.6940	0.0776	0.1810	0.6638	0.6595	0.5862	0.5690	0.5474	0.6164	0.6466	0.5000
VAR. 16 P137		0.7500	0.6121	0.7328	0.1853	0.2845	0.6336	0.6810	0.7716	0.6681	0.5948	0.7241	0.7112	0.6293
VAR. 17 P141		0.5647	0.4828	0.6509	-0.0647	0.4698	0.5647	0.5474	0.6422	0.5560	0.6638	0.5560	0.6164	0.6078
VAR. 18 P142		0.6940	0.7198	0.6466	0.2888	0.2457	0.6767	0.6509	0.7198	0.7284	0.7672	0.6853	0.6466	0.5948
VAR. 19 P143		0.7586	0.6767	0.7672	0.0647	0.3362	0.7198	0.7328	0.7672	0.7284	0.7241	0.8319	0.7629	0.6422
VAR. 20 P146		0.5690	0.5302	0.6164	-0.0603	0.4095	0.4828	0.4914	0.5172	0.5474	0.5517	0.6422	0.6164	0.5000
VAR. 21 P148		0.4655	0.5259	0.5302	0.4052	0.2112	0.4310	0.4052	0.7069	0.3534	0.4397	0.4052	0.4784	0.2888
VAR. 22 : 1		0.6853	0.6466	0.6983	0.1853	0.3534	0.6422	0.6810	0.7672	0.7198	0.7112	0.5905	0.7543	0.5948
VAR. 23 P155		0.5388	0.5431	0.5948	0.2155	0.3621	0.5905	0.5172	0.5690	0.6638	0.5733	0.6121	0.5474	0.4612
VAR. 24 P156		0.6293	0.6810	0.6552	0.7672	0.1379	0.4569	0.5216	0.5862	0.6336	0.4914	0.7069	0.5819	0.5733
VAR. 25 P159		0.7457	0.6595	0.7328	-0.1164	0.2888	0.5819	0.6336	0.6207	0.7629	0.7069	0.8190	0.6853	0.5733
VAR. 26 P160		0.7414	0.6552	0.7155	-0.0991	0.3810	0.7457	0.7155	0.6767	0.7888	0.6638	0.8190	0.7198	0.5172
VAR. 27 P168		0.6853	0.6767	0.8017	0.0302	0.4181	0.7457	0.7284	0.7672	0.6940	0.8233	0.6983	0.6767	0.6164
VAR. 28 P176		0.6509	0.4784	0.5776	0.0259	0.3103	0.6767	0.6121	0.5991	0.6078	0.6897	0.6940	0.6250	0.6121
VAR. 29 P181		0.6164	0.5603	0.6379	-0.0302	0.4569	0.6983	0.7026	0.6552	0.6810	0.7371	0.5603	0.5819	0.4440

VAR. 30 P186	0.6034	0.5948	0.6767	0.1250	0.2112	0.6250	0.6767	0.7672	0.6121	0.7241	0.5776	0.6983	0.5216
VAR. 31 P214	0.4957	0.3793	0.4698	-0.0474	0.2931	0.3879	0.3793	0.4698	0.4009	0.4612	0.4181	0.4121	0.5129
VAR. 32 P215	0.7543	0.6078	0.7069	0.0086	0.2716	0.6853	0.7500	0.7802	0.7500	0.6422	0.7457	0.7586	0.7069
VAR. 33 P226	0.7457	0.6336	0.7026	0.0172	0.2500	0.7155	0.7500	0.7026	0.7284	0.7586	0.7284	0.6810	0.7026
VAR. 34 P231	0.6034	0.5733	0.7457	0.0301	0.3879	0.6422	0.6164	0.6940	0.5862	0.6552	0.5560	0.5647	0.7560
VAR. 35 P234	0.7888	0.6422	0.6017	0.1207	0.2491	0.7284	0.7241	0.7802	0.7284	0.6940	0.6724	0.6379	0.6250
VAR. 36 P235	0.7112	0.5948	0.7241	-0.0603	0.3664	0.6250	0.7328	0.7672	0.6810	0.7155	0.6983	0.7112	0.5517
VAR. 37 P236	0.5603	0.4871	0.7112	-0.0905	0.4698	0.5603	0.5474	0.6897	0.5733	0.6121	0.5474	0.5733	0.6164
VAR. 38 P237	0.5517	0.4914	0.4828	0.1897	0.3190	0.5862	0.6767	0.5776	0.5733	0.6681	0.5388	0.5474	0.4655
VAR. 39 P239	0.4353	0.4224	0.4612	0.1078	0.4181	0.4612	0.5103	0.4569	0.4310	0.4224	0.3836	0.5000	0.3578
VAR. 40 P242	0.6767	0.7802	0.8190	0.1638	0.2802	0.6853	0.7198	0.7716	0.7759	0.7414	0.7241	0.7716	0.6638
VAR. 41 P243	0.3836	0.2586	0.5086	-0.1509	0.1207	0.3103	0.3707	0.2586	0.3147	0.2328	0.4095	0.3103	0.3276
VAR. 42 P244	0.4612	0.5431	0.5733	-0.2026	0.3190	0.5388	0.5560	0.5302	0.4828	0.5474	0.5345	0.4741	0.4095
VAR. 43 P252	0.6681	0.6810	0.7328	0.1164	0.3879	0.5991	0.5905	0.6681	0.6767	0.5948	0.6940	0.7371	0.5991
VAR. 44 P253	0.6336	0.6724	0.7845	0.0	0.3836	0.6767	0.6422	0.6552	0.7155	0.6379	0.6379	0.7328	0.5603
VAR. 45 P254	0.6983	0.6121	0.7414	-0.0948	0.4310	0.7629	0.6552	0.7759	0.7241	0.7155	0.6595	0.7414	0.6767
VAR. 46 P257	0.5172	0.4784	0.3836	0.2716	0.1078	0.3621	0.4569	0.4741	0.5302	0.4569	0.4741	0.5172	0.3922
VAR. 47 P258	0.6422	0.7414	0.7155	0.0043	0.3534	0.8060	0.6638	0.7802	0.7716	0.8405	0.6767	0.7155	0.6336
VAR. 48 P260	0.4440	0.5216	0.4784	0.2759	0.5905	0.5733	0.3879	0.5000	0.5259	0.5000	0.3922	0.5129	0.4267
VAR. 49 P265	0.6509	0.5733	0.6379	0.1336	0.3448	0.6336	0.5302	0.6293	0.5603	0.5690	0.6379	0.6250	0.5517
VAR. 50 P266	0.7802	0.6207	0.7586	-0.0948	0.3319	0.5647	0.5905	0.6595	0.7802	0.6121	0.7629	0.7457	0.5431
VAR. 51 P267	0.7284	0.6164	0.5819	-0.0603	0.3922	0.5905	0.6552	0.6422	0.6724	0.6336	0.6466	0.6552	0.6293
VAR. 52 P268	0.7241	0.5216	0.6552	0.0733	0.4483	0.7155	0.6940	0.6724	0.6853	0.6595	0.6293	0.6595	0.4862
VAR. 53 P269	1.0000	0.6552	0.7586	0.0733	0.3233	0.6595	0.7457	0.7112	0.8017	0.6595	0.7802	0.7241	0.6034
VAR. 54 P276	0.6552	1.0000	0.7198	0.1810	0.2198	0.6121	0.6164	0.6466	0.7629	0.7026	0.7457	0.6767	0.5388
VAR. 55 P287	0.7586	0.7198	1.0000	0.0776	0.3362	0.7069	0.7414	0.7586	0.7414	0.7284	0.7500	0.7759	0.6078
VAR. 56 P288	0.0733	0.1810	0.0776	1.0000	-0.2026	-0.0474	0.0560	0.1293	-0.0172	-0.0216	-0.0216	0.0388	-0.0474
VAR. 57 P289	0.3233	0.2198	0.3362	-0.2026	1.0000	0.4095	0.2716	0.3147	0.3147	0.3448	0.1897	0.2716	0.2845
VAR. 58 P295	0.6595	0.6121	0.7069	-0.0474	0.4095	1.0000	0.7198	0.7457	0.6853	0.7716	0.6466	0.6724	0.6595
VAR. 59 P298	0.7457	0.6164	0.7414	0.0560	0.2716	0.7198	1.0000	0.7371	0.7026	0.7371	0.7198	0.6336	0.5948
VAR. 60 P299	0.7112	0.6466	0.7586	0.1293	0.3147	0.7457	0.7371	1.0000	0.7026	0.7802	0.6466	0.7198	0.6810

VAR. 61 P6	0.8017	0.7629	0.7414	-0.0179	0.3147	0.6853	0.7026	0.7026	1.0000	0.7414	0.7802	0.7414	0.6121
VAR. 62 P7	0.6595	0.7026	0.7284	-0.0214	0.3448	0.7716	0.7371	0.7802	0.7414	1.0000	0.6981	0.7112	0.6810
VAR. 63 P8	0.7802	0.7457	0.7500	-0.0214	0.1897	0.6466	0.7198	0.6466	0.7802	0.6981	1.0000	0.7629	0.6853
VAR. 64 P9	0.7241	0.6767	0.7759	0.0388	0.2716	0.6724	0.6336	0.7198	0.7414	0.7112	0.7629	1.0000	0.6595
VAR. 65 P10	0.6034	0.5388	0.6078	-0.0474	0.2845	0.6595	0.5948	0.6810	0.6121	0.6810	0.6853	0.6595	1.0000
VAR. 66 P11	0.6853	0.7155	0.7069	0.0647	0.3060	0.7371	0.6422	0.7026	0.7974	0.7802	0.7629	0.7543	0.6509
VAR. 67 P19	0.6853	0.5776	0.6767	0.1164	0.3836	0.7457	0.7802	0.7845	0.6379	0.7414	0.6940	0.6595	0.6638
VAR. 68 P20	0.6422	0.5560	0.7112	0.0086	0.3707	0.7069	0.6466	0.5862	0.6379	0.6379	0.7328	0.6681	0.6509
VAR. 69 P21	0.6940	0.6379	0.7974	0.1207	0.1681	0.6422	0.6466	0.7328	0.6638	0.6595	0.6681	0.7672	0.6207
VAR. 70 P26	0.7026	0.6466	0.7888	0.0044	0.3922	0.6897	0.7284	0.7414	0.6810	0.7457	0.6724	0.7284	0.5862
VAR. 71 P29	0.6810	0.7371	0.7672	0.1379	0.4224	0.6121	0.6336	0.7198	0.7500	0.7155	0.6552	0.7716	0.6336
VAR. 72 P43	0.5474	0.5043	0.6724	-0.0388	0.2328	0.4440	0.5259	0.5086	0.6379	0.5991	0.6552	0.6121	0.4267
VAR. 73 P46	0.6250	0.5776	0.5991	0.0776	0.3190	0.5647	0.5431	0.5647	0.5431	0.5000	0.5733	0.4871	0.4871
VAR. 74 P52	0.7069	0.5690	0.7112	-0.1336	0.1810	0.5991	0.5862	0.6466	0.6552	0.6034	0.7371	0.6034	0.6983
VAR. 75 P54	0.5302	0.4052	0.5302	-0.0431	0.4052	0.51 /	0.4871	0.5345	0.5388	0.4784	0.5216	0.3707	0.4267
VAR. 76 P55	0.7845	0.6034	0.7414	0.0517	0.3750	0.6940	0.7112	0.7284	0.7672	0.7284	0.7500	0.7629	0.6897
VAR. 77 P60	0.6638	0.6121	0.7026	0.1853	0.1103	0.5819	0.5991	0.7112	0.7198	0.6810	0.6810	0.7069	0.6853
VAR. 78 P62	0.7500	0.4957	0.7112	0.0216	0.4009	0.5733	0.6379	0.6379	0.5905	0.5517	0.6293	0.6293	0.5388
VAR. 79 P63	0.6940	0.5862	0.7371	0.2241	0.2414	0.5086	0.5991	0.6379	0.6767	0.5517	0.6336	0.6207	0.5948
VAR. 80 P67	0.6595	0.6595	0.6552	-0.1034	0.2888	0.6681	0.7026	0.6422	0.6724	0.7284	0.6509	0.5948	0.6638
VAR. 81 P68	0.5862	0.4569	0.7026	0.1638	0.4655	0.7198	0.6595	0.6293	0.4957	0.6509	0.5345	0.5690	0.4741
VAR. 82 P72	0.5603	0.4224	0.5819	0.0129	0.2931	0.5905	0.5431	0.5172	0.5086	0.4095	0.4698	0.4871	0.4526
VAR. 83 P73	0.6810	0.5819	0.6638	0.0	0.2759	0.7284	0.7198	0.6379	0.7500	0.6767	0.7500	0.6681	0.6897
VAR. 84 P76	0.6681	0.5603	0.6466	-0.0302	0.3491	0.5948	0.5560	0.5388	0.7026	0.5733	0.6724	0.6422	0.4612
VAR. 85 P79	0.6853	0.4828	0.6293	0.0086	0.2931	0.5259	0.5345	0.5302	0.6466	0.5776	0.5474	0.6250	0.5302
VAR. 86 P83	0.5733	0.5517	0.7069	-0.0776	0.3664	0.5345	0.4914	0.4741	0.5948	0.5129	0.5991	0.6164	0.4957
VAR. 87 P90	0.5517	0.5129	0.6164	-0.0302	0.3750	0.6466	0.6509	0.6638	0.5948	0.6595	0.6379	0.6466	0.5388
VAR. 88 P93	0.7802	0.7284	0.7802	-0.0086	0.2500	0.6552	0.7241	0.6638	0.7888	0.6724	0.8103	0.7888	0.5776
VAR. 89 P95	0.5172	0.3319	0.5345	0.0129	0.1276	0.4526	0.5431	0.6034	0.5647	0.5129	0.4914	0.4138	0.4612
VAR. 90 P98	0.6983	0.6767	0.6810	0.0086	0.2759	0.7026	0.6466	0.6897	0.6810	0.6940	0.6983	0.6983	0.6724

	66	67	68	69	70	71	72	73	74	75	76	77	78
VAR. 1 P102	0.7026	0.7629	0.7586	0.5907	0.6552	0.6853	0.5388	0.5302	0.5474	0.4828	0.7629	0.6853	0.5862
VAR. 2 P104	0.6552	0.5776	0.5647	0.6427	0.6164	0.7586	0.4526	0.4828	0.5862	0.4526	0.6853	0.6034	0.5302
VAR. 3 P107	0.5991	0.6767	0.5819	0.5819	0.5991	0.7069	0.4741	0.5388	0.6509	0.4310	0.7371	0.7414	0.6293
VAR. 4 P108	-0.0043	0.1595	0.0733	0.2284	0.2328	0.0819	0.2414	0.1940	0.0086	-0.0388	0.0517	0.1897	0.0733
VAR. 5 P113	0.5517	0.7069	0.5776	0.5517	0.5948	0.6552	0.5733	0.3664	0.5603	0.4181	0.6897	0.7026	0.5172
VAR. 6 P114	0.6897	0.5388	0.5431	0.4655	0.5259	0.5948	0.5043	0.5302	0.3276	0.2974	0.5690	0.5302	0.3578
VAR. 7 P116	0.5862	0.5517	0.3836	0.4397	0.5129	0.5216	0.4138	0.4310	0.4397	0.3534	0.4353	0.4052	0.4655
VAR. 8 P119	0.6810	0.6121	0.5345	0.4569	0.5216	0.5043	0.4310	0.4957	0.3448	0.3448	0.5560	0.4655	0.4052
VAR. 9 P121	0.7759	0.6552	0.7328	0.6810	0.6207	0.7716	0.6138	0.6250	0.5776	0.3966	0.7845	0.6767	0.6034
VAR. 10 P124	0.7974	0.7069	0.6897	0.7328	0.7241	0.7241	0.6078	0.4957	0.7586	0.5216	0.7716	0.7069	0.6595
VAR. 11 P129	0.7586	0.6810	0.7112	0.6034	0.6552	0.6336	0.5819	0.4741	0.5647	0.4655	0.7586	0.6595	0.6034
VAR. 12 P134	0.5560	0.6293	0.5560	0.5819	0.5216	0.6595	0.3233	0.4138	0.3103	0.2414	0.5345	0.3190	0.3448
VAR. 13 P141	0.5345	0.6121	0.4569	0.4397	0.4741	0.5216	0.3190	0.4181	0.5172	0.3319	0.5603	0.6078	0.4655
VAR. 14 P132	0.5948	0.5862	0.3534	0.4397	0.4267	0.6078	0.3276	0.3879	0.5086	0.4181	0.6164	0.5302	0.4612
VAR. 15 P135	0.5603	0.6121	0.5431	0.7155	0.5466	0.5862	0.5862	0.4095	0.6250	0.3966	0.5862	0.5172	0.5129
VAR. 16 P137	0.6595	0.6810	0.6250	0.6724	0.5991	0.7026	0.5216	0.5000	0.7112	0.5647	0.7543	0.7155	0.6595
VAR. 17 P143	0.5733	0.6552	0.6422	0.4914	0.5647	0.6983	0.4353	0.4569	0.5862	0.4267	0.6810	0.6638	0.5474
VAR. 18 P142	0.7845	0.6638	0.6638	0.5776	0.6509	0.6853	0.4095	0.5172	0.5302	0.3793	0.7284	0.6681	0.5733
VAR. 19 P143	0.7328	0.6552	0.6767	0.6207	0.7198	0.7112	0.6121	0.5259	0.6940	0.6034	0.7069	0.6466	0.5776
VAR. 20 P146	0.5603	0.5776	0.5819	0.4655	0.5560	0.6552	0.4957	0.4440	0.5905	0.4569	0.5819	0.6293	0.5431
VAR. 21 P148	0.4957	0.6724	0.4052	0.4052	0.4181	0.5474	0.2328	0.5474	0.3147	0.2414	0.5000	0.3534	0.3405
VAR. 22 P151	0.6983	0.7241	0.6293	0.7241	0.7500	0.7974	0.5431	0.5862	0.5345	0.3750	0.7155	0.7155	0.5819
VAR. 23 P155	0.5819	0.6078	0.6121	0.5517	0.6207	0.6655	0.5560	0.5216	0.5905	0.3707	0.6897	0.5517	0.4353
VAR. 24 P156	0.5733	0.5690	0.4440	0.4397	0.4828	0.6207	0.5216	0.5603	0.6509	0.4483	0.5991	0.6552	0.5345
VAR. 25 P159	0.7112	0.6336	0.7284	0.6724	0.6552	0.6767	0.5776	0.5129	0.6940	0.4784	0.7284	0.6638	0.5905
VAR. 26 P160	0.7069	0.6552	0.7026	0.6595	0.6897	0.6121	0.6336	0.4741	0.6638	0.5043	0.6897	0.5862	0.5733
VAR. 27 P168	0.7974	0.7371	0.6897	0.7026	0.7888	0.7284	0.6250	0.6164	0.6983	0.5647	0.7155	0.6767	0.5690
VAR. 28 P176	0.7069	0.7198	0.6853	0.5259	0.5043	0.5259	0.4741	0.4741	0.5603	0.4138	0.7328	0.6207	0.4741
VAR. 29 P181	0.7543	0.6509	0.6422	0.4828	0.6379	0.5948	0.4526	0.5259	0.4569	0.3750	0.7241	0.6897	0.5302

VAR. 30 P186	0.5905	0.7026	0.6078	0.6422	0.6078	0.6983	0.4784	0.4224	0.4914	0.3750	0.6983	0.6250	0.5302	
VAR. 31 P234	0.4052	0.3836	0.3448	0.4871	0.4655	0.5431	0.4052	0.3233	0.3578	0.3233	0.4871	0.3836	0.3879	
VAR. 32 P235	0.6724	0.7457	0.7112	0.6897	0.6336	0.7198	0.4741	0.4914	0.6638	0.4569	0.8362	0.7543	0.6422	
VAR. 33 P226	0.6853	0.6853	0.6552	0.7759	0.7586	0.6897	0.5733	0.5000	0.7241	0.4914	0.7026	0.5862	0.5647	
VAR. 34 P231	0.5603	0.6681	0.6207	0.6422	0.7026	0.6379	0.4784	0.4698	0.5560	0.5043	0.5948	0.6121	0.5560	
VAR. 35 P234	0.6897	0.7414	0.6897	0.7672	0.7328	0.7543	0.5647	0.5819	0.5776	0.4483	0.8276	0.7198	0.7155	
VAR. 36 P235	0.6595	0.7284	0.6379	0.7543	0.7931	0.7026	0.6724	0.4914	0.6164	0.5431	0.6767	0.6078	0.6034	
VAR. 37 P236	0.5000	0.6422	0.5603	0.6207	0.6250	0.6078	0.5819	0.3319	0.6595	0.6078	0.6466	0.5948	0.5431	
VAR. 38 P237	0.6293	0.7284	0.5776	0.5431	0.5776	0.6293	0.3966	0.4353	0.3793	0.4784	0.6767	0.5819	0.4655	
VAR. 39 P239	0.5603	0.4095	0.4526	0.5862	0.5819	0.5690	0.3836	0.6121	0.2759	0.4009	0.4440	0.3707	0.4526	
VAR. 40 P242	0.7457	0.6724	0.6207	0.7241	0.6724	0.7931	0.6207	0.5172	0.6552	0.5517	0.7069	0.6810	0.5733	
VAR. 41 P243	0.2026	0.2026	0.2845	0.4914	0.3017	0.3362	0.4741	0.2586	0.4397	0.4526	0.2931	0.2069	0.2672	
VAR. 42 P244	0.5043	0.4828	0.4397	0.4741	0.5733	0.4784	0.4526	0.3966	0.4871	0.4526	0.4440	0.3707	0.4353	
VAR. 43 P252	0.6897	0.6034	0.6853	0.6810	0.6121	0.7759	0.5474	0.5991	0.5862	0.5647	0.7328	0.6379	0.5948	
VAR. 44 P253	0.6250	0.6250	0.6422	0.7112	0.7284	0.7500	0.6336	0.4957	0.6078	0.5129	0.6897	0.6250	0.6595	
VAR. 45 P254	0.7069	0.6767	0.6250	0.6897	0.7457	0.6810	0.5560	0.5560	0.7112	0.5991	0.7155	0.6293	0.6034	
VAR. 46 P257	0.4655	0.4440	0.2931	0.5948	0.5000	0.5905	0.3448	0.2241	0.3103	0.2716	0.4138	0.5388	0.3793	
VAR. 47 P258	0.6379	0.7198	0.6336	0.6681	0.7284	0.7414	0.5776	0.6164	0.5948	0.5776	0.7328	0.6466	0.5388	
VAR. 48 P260	0.5690	0.5043	0.5172	0.5345	0.5776	0.6121	0.3448	0.5216	0.2629	0.4095	0.4957	0.5000	0.5172	
VAR. 49 P265	0.6336	0.5948	0.6379	0.6552	0.6078	0.5948	0.3664	0.4655	0.5388	0.3922	0.6121	0.5862	0.4871	
VAR. 50 P266	0.6207	0.5733	0.6379	0.7629	0.7328	0.6853	0.6983	0.5086	0.6509	0.5690	0.6422	0.6336	0.6810	
VAR. 51 P267	0.6422	0.6724	0.6422	0.6552	0.6164	0.6121	0.4569	0.4784	0.4914	0.3319	0.7629	0.6466	0.6164	
VAR. 52 P268	0.7457	0.7500	0.7155	0.8060	0.6422	0.7241	0.4741	0.7586	0.5259	0.5086	0.8233	0.6552	0.6078	
VAR. 53 P269	0.6853	0.6853	0.6422	0.6940	0.7026	0.6810	0.5474	0.6250	0.7069	0.5302	0.7845	0.6638	0.7500	
VAR. 54 P276	0.7155	0.5776	0.5560	0.6379	0.6466	0.7371	0.5043	0.5776	0.5690	0.4052	0.6034	0.6121	0.4957	
VAR. 55 P287	0.7069	0.6767	0.7112	0.7974	0.7888	0.7672	0.6724	0.5991	0.7112	0.5302	0.7414	0.7026	0.7112	
VAR. 56 P288	0.0690	0.1164	0.0086	0.1207	0.0043	0.1379	-0.0388	0.0776	-0.2336	-0.0431	0.0517	0.1853	0.0216	
VAR. 57 P289	0.3060	0.3836	0.3707	0.1681	0.3922	0.4224	0.2328	0.3190	0.2810	0.4052	0.3750	0.3103	0.4009	
VAR. 58 P295	0.7371	0.7457	0.7069	0.6422	0.6897	0.6121	0.4440	0.5647	0.5991	0.5172	0.6940	0.5819	0.5733	
VAR. 59 P298	0.6422	0.7802	0.6466	0.6681	0.7284	0.6336	0.5259	0.5431	0.5862	0.4871	0.7112	0.5991	0.6379	
VAR. 60 P299	0.7026	0.7845	0.5862	0.7328	0.7414	0.7198	0.5086	0.5647	0.6466	0.5345	0.7284	0.7112	0.6379	

VAR. 61 P6	0.7974	0.6379	0.6379	0.6638	0.6810	0.7500	0.6379	0.5431	0.6552	0.5388	0.7672	0.7198	0.5705	
VAR. 62 P7	0.7802	0.7414	0.6379	0.6552	0.7457	0.7155	0.5991	0.5000	0.6034	0.4784	0.7284	0.6810	0.5517	
VAR. 63 P8	0.7629	0.6940	0.7328	0.6681	0.6724	0.6552	0.6552	0.5733	0.7371	0.5216	0.7500	0.6810	0.6293	
VAR. 64 P9	0.7543	0.6595	0.6681	0.7672	0.7284	0.7716	0.6121	0.4871	0.6034	0.3707	0.7629	0.7069	0.6293	
VAR. 65 P10	0.6509	0.6638	0.6509	0.6207	0.5862	0.6336	0.4267	0.4871	0.6983	0.4267	0.6897	0.6853	0.5388	
VAR. 66 P11	1.0000	0.6638	0.7112	0.6422	0.6681	0.7198	0.5259	0.6466	0.5862	0.4224	0.8017	0.6034	0.5819	
VAR. 67 P19	0.6638	1.0000	0.7241	0.6681	0.6983	0.6552	0.5560	0.5733	0.5517	0.4784	0.7716	0.7241	0.5905	
VAR. 68 P20	0.7112	0.7241	1.0000	0.6466	0.6853	0.6121	0.5474	0.6293	0.5560	0.4224	0.7629	0.[illegible]	0.5733	
VAR. 69 P21	0.6422	0.6681	0.6466	1.0000	0.8147	0.7241	0.6552	0.5905	0.6422	0.4224	0.6595	0.6853	0.5776	
VAR. 70 P26	0.6681	0.6983	0.6853	0.8147	1.0000	0.7112	0.6509	0.6121	0.6121	0.4914	0.6121	0.6336	0.6638	
VAR. 71 P29	0.7198	0.6552	0.6121	0.7241	0.7112	1.0000	0.5345	0.6078	0.5776	0.4784	0.7241	0.7586	0.5560	
VAR. 72 P43	0.5259	0.5560	0.5474	0.6552	0.6509	0.5345	1.0000	0.4138	0.5216	0.5043	0.5647	0.5905	0.4353	
VAR. 73 P46	0.6466	0.5733	0.6293	0.5905	0.6121	0.6078	0.4138	1.0000	0.4784	0.5086	0.5733	0.4784	0.5086	
VAR. 74 P52	0.5862	0.5517	0.5560	0.6422	0.6121	0.5776	0.5216	0.4784	1.0000	0.5431	0.6595	0.6164	0.6250	
VAR. 75 P54	0.4224	0.4784	0.4224	0.4224	0.4914	0.4784	0.5043	0.5086	0.5431	1.0000	0.4569	0.4914	0.5216	
VAR. 76 P55	0.8017	0.7716	0.7629	0.6595	0.6121	0.7241	0.5647	0.5733	0.6595	0.4569	1.0000	0.6983	0.6940	
VAR. 77 P60	0.6034	0.7241	0.6250	0.6853	0.6336	0.7586	0.5905	0.4784	0.6164	0.4914	0.6983	1.0000	0.6336	
VAR. 78 P62	0.5819	0.5905	0.5733	0.5776	0.6638	0.5560	0.4353	0.5086	0.6250	0.5216	0.6940	0.6336	1.0000	
VAR. 79 P63	0.5776	0.6422	0.5991	0.7241	0.6724	0.6336	0.6638	0.5905	0.6164	0.4828	0.7069	0.6422	0.6466	
VAR. 80 P67	0.6940	0.5560	0.5345	0.5819	0.6509	0.6034	0.5043	0.5991	0.6207	0.4698	0.5862	0.5129	0.5345	
VAR. 81 P68	0.6164	0.6681	0.6121	0.6336	0.6509	0.5905	0.5129	0.5388	0.3879	0.4871	0.6336	0.4655	0.4828	
VAR. 82 P72	0.5129	0.5733	0.5302	0.6466	0.6121	0.4353	0.5690	0.5431	0.4440	0.4784	0.4957	0.3836	0.4698	
VAR. 83 P73	0.7198	0.7155	0.7457	0.6164	0.6336	0.6681	0.4095	0.4784	0.5948	0.4440	0.8147	0.6293	0.6207	
VAR. 84 P76	0.6724	0.5819	0.6293	0.5647	0.7155	0.6250	0.5129	0.6466	0.6767	0.5474	0.6207	0.5129	0.5560	
VAR. 85 P79	0.5776	0.6034	0.6379	0.5474	0.5991	0.6164	0.5172	0.5517	0.4698	0.4224	0.6767	0.5172	0.5388	
VAR. 86 P83	0.5862	0.5345	0.7371	0.6207	0.6897	0.6121	0.5862	0.5690	0.5345	0.4828	0.6336	0.5647	0.6078	
VAR. 87 P90	0.5862	0.6078	0.5862	0.6121	0.6810	0.6681	0.5733	0.4612	0.4914	0.5000	0.5388	0.5043	0.4095	
VAR. 88 P93	0.8060	0.6164	0.6810	0.7155	0.6638	0.6767	0.6250	0.6121	0.6164	0.4914	0.7328	0.5819	0.6466	
VAR. 89 P95	0.4741	0.5776	0.5345	0.4914	0.5388	0.5000	0.4914	0.3664	0.5086	0.5948	0.6207	0.6034	0.5086	
VAR. 90 P98	0.7328	0.6466	0.6681	0.6897	0.6983	0.6552	0.3664	0.5948	0.6681	0.4181	0.7629	0.5603	0.6336	

	79	80	81	82	83	84	85	86	87	88	89	90
VAR. 1 P102	0.5819	0.6250	0.6422	0.4567	0.6552	0.6078	0.5733	0.6293	0.6552	0.6638	0.5991	0.6466
VAR. 2 P106	0.6336	0.5259	0.5733	0.3578	0.5474	0.5733	0.5129	0.5086	0.5905	0.6336	0.5000	0.6466
VAR. 3 P107	0.6336	0.5733	0.5690	0.4224	0.5905	0.5603	0.5733	0.5862	0.6164	0.6164	0.4914	0.6595
VAR. 4 P108	0.1121	0.0690	0.0517	0.1552	0.0603	0.0388	0.0172	0.1466	-0.0129	-0.0819	0.0474	0.0690
VAR. 5 P113	0.5647	0.5690	0.5733	0.3448	0.6293	0.5991	0.4698	0.5172	0.6078	0.5086	0.6121	0.5474
VAR. 6 P114	0.4655	0.5345	0.6250	0.3405	0.6983	0.5259	0.3276	0.3578	0.5776	0.5000	0.4353	0.3664
VAR. 7 P116	0.3879	0.5991	0.4871	0.3621	0.3405	0.4483	0.4009	0.4009	0.4267	0.5172	0.2974	0.4526
VAR. 8 P119	0.3448	0.3622	0.4741	0.3405	0.4526	0.4828	0.4181	0.5259	0.3922	0.4612	0.4397	0.5172
VAR. 9 P121	0.6466	0.5647	0.5819	0.5345	0.7457	0.5560	0.5560	0.6336	0.5431	0.7414	0.4483	0.7328
VAR. 10 P124	0.6250	0.6853	0.5474	0.5431	0.7112	0.6940	0.5776	0.5733	0.6767	0.7802	0.6207	0.6767
VAR. 11 P129	0.5862	0.5172	0.5733	0.4009	0.7716	0.6250	0.6336	0.5819	0.5259	0.7112	0.5388	0.6164
VAR. 12 P130	0.4310	0.2457	0.5690	0.3966	0.5259	0.4224	0.3664	0.4526	0.4784	0.4095	0.4181	0.5603
VAR. 13 P132	0.3922	0.5560	0.4526	0.2371	0.6897	0.4526	0.2716	0.4914	0.4828	0.4310	0.4138	0.5690
VAR. 14 P133	0.4353	0.4698	0.4741	0.4569	0.4483	0.4957	0.4957	0.2457	0.5129	0.5172	0.4397	0.4655
VAR. 15 P135	0.5517	0.5905	0.5948	0.5690	0.6595	0.5690	0.5690	0.5302	0.5517	0.6552	0.6526	0.5302
VAR. 16 P137	0.5819	0.5948	0.6034	0.4569	0.6121	0.5216	0.5474	0.6207	0.6250	0.7414	0.5948	0.6552
VAR. 17 P141	0.4655	0.5216	0.5819	0.2716	0.5216	0.5345	0.5776	0.5905	0.6466	0.5690	0.5517	0.5947
VAR. 18 P142	0.5388	0.5517	0.5905	0.3147	0.6724	0.6336	0.6336	0.4957	0.6078	0.6595	0.4698	0.6853
VAR. 19 P143	0.5302	0.7069	0.6595	0.5216	0.6767	0.7112	0.5991	0.6034	0.7414	0.7974	0.5172	0.6379
VAR. 20 P146	0.4353	0.4741	0.4828	0.2931	0.5302	0.6595	0.5259	0.5172	0.5819	0.6078	0.4526	0.4655
VAR. 21 P148	0.3534	0.4181	0.4698	0.2328	0.3707	0.5172	0.3707	0.2672	0.3534	0.3836	0.1638	0.3879
VAR. 22 P151	0.5776	0.6552	0.6724	0.5129	0.5733	0.6293	0.6336	0.5474	0.7112	0.6422	0.4698	0.6509
VAR. 23 P155	0.5086	0.6466	0.5517	0.5129	0.3879	0.5517	0.3793	0.4483	0.5905	0.5517	0.3621	0.4353
VAR. 24 P156	0.3966	0.5690	0.4181	0.4957	0.5259	0.5216	0.3578	0.3621	0.4483	0.4707	0.3448	0.5345
VAR. 25 P159	0.6207	0.6810	0.5603	0.4052	0.6767	0.6379	0.5388	0.6250	0.5948	0.7888	0.4871	0.6810
VAR. 26 P160	0.5733	0.6638	0.5603	0.5086	0.7328	0.6638	0.5259	0.5690	0.6767	0.7802	0.4784	0.6810
VAR. 27 P164	0.5345	0.6552	0.6853	0.5690	0.5690	0.6638	0.5862	0.6207	0.6509	0.7328	0.6164	0.6293
VAR. 28 P176	0.4095	0.5991	0.5819	0.4741	0.6422	0.4957	0.5819	0.4353	0.5905	0.5991	0.5517	0.5086
VAR. 29 P181	0.4224	0.6724	0.6336	0.4052	0.6207	0.5862	0.5431	0.5302	0.5129	0.6250	0.5302	0.5690

VAR, 30 P186	0.5517	0.6121	0.5603	0.3627	0.4076	0.4914	0.4828	0.4612	0.6379	0.5991	0.5388	0.6121	
VAR, 31 P214	0.4310	0.5086	0.5172	0.4009	0.3276	0.3233	0.4353	0.4612	0.5302	0.5905	0.2284	0.4181	
VAR, 32 P215	0.5991	0.5517	0.4914	0.4353	0.7931	0.5603	0.4914	0.5647	0.6207	0.6595	0.6638	0.7241	
VAR, 33 P226	0.6509	0.6466	0.5776	0.5214	0.6897	0.6293	0.5690	0.5517	0.5690	0.7371	0.5517	0.7414	
VAR, 34 P231	0.5776	0.5216	0.6379	0.3534	0.5733	0.4957	0.5474	0.5690	0.5776	0.6034	0.5345	0.5948	
VAR, 35 P234	0.7026	0.6121	0.6810	0.5948	0.6897	0.6207	0.6853	0.6810	0.6379	0.7716	0.5388	0.7371	
VAR, 36 P235	0.5862	0.6595	0.6638	0.5774	0.6164	0.6250	0.6466	0.5776	0.6767	0.7457	0.5819	0.5862	
VAR, 37 P236	0.5733	0.5259	0.5000	0.4829	0.5905	0.5302	0.4397	0.5043	0.4784	0.5560	0.6466	0.5345	
VAR, 38 P237	0.4741	0.4914	0.6121	0.4267	0.6379	0.4655	0.4871	0.5086	0.5474	0.5216	0.5733	0.5517	
VAR, 39 P239	0.5129	0.3750	0.5043	0.4617	0.3362	0.4612	0.4741	0.4440	0.4009	0.4828	0.3060	0.4483	
VAR, 40 P242	0.6897	0.6293	0.5991	0.4957	0.6293	0.5948	0.5733	0.5388	0.6983	0.7672	0.4612	0.6767	
VAR, 41 P243	0.3836	0.4181	0.4526	0.4741	0.2716	0.2155	0.1940	0.3750	0.3578	0.5000	0.3060	0.2069	
VAR, 42 P244	0.2802	0.6078	0.4612	0.4353	0.3060	0.3966	0.3319	0.4181	0.5690	0.5601	0.4914	0.3578	
VAR, 43 P252	0.6595	0.6121	0.5474	0.5774	0.6767	0.5948	0.5733	0.6121	0.6121	0.7457	0.4698	0.6509	
VAR, 44 P253	0.6724	0.5517	0.5948	0.5388	0.5991	0.5991	0.5560	0.6983	0.5905	0.6681	0.5862	0.6466	
VAR, 45 P254	0.6078	0.6379	0.6552	0.5694	0.6121	0.6983	0.5474	0.6034	0.6897	0.7069	0.6034	0.7198	
VAR, 46 P257	0.4397	0.4138	0.3836	0.4009	0.4310	0.2543	0.2629	0.2931	0.5345	0.4741	0.4181	0.3836	
VAR, 47 P258	0.5474	0.7457	0.6207	0.5129	0.6724	0.6422	0.5862	0.5991	0.5862	0.7112	0.5474	0.6810	
VAR, 48 P260	0.4138	0.5000	0.5259	0.5647	0.4526	0.4397	0.4397	0.4914	0.5302	0.5000	0.3534	0.4526	
VAR, 49 P265	0.4397	0.4957	0.5560	0.4612	0.5905	0.5172	0.5922	0.5388	0.4828	0.5862	0.4655	0.5086	
VAR, 50 P268	0.6853	0.5560	0.5129	0.5388	0.6336	0.6681	0.5733	0.6121	0.6207	0.7672	0.4957	0.6595	
VAR, 51 P267	0.4914	0.6207	0.5862	0.4828	0.6293	0.5000	0.6638	0.5560	0.5862	0.7328	0.4871	0.5862	
VAR, 52 P268	0.5948	0.6164	0.7414	0.5345	0.7198	0.6336	0.6724	0.6767	0.5776	0.7155	0.5216	0.7112	
VAR, 53 P269	0.6940	0.6595	0.5862	0.5603	0.6810	0.6681	0.6853	0.5733	0.5517	0.7802	0.5172	0.6983	
VAR, 54 P276	0.5862	0.6595	0.4569	0.4224	0.5819	0.5906	0.4828	0.5517	0.5129	0.7284	0.3319	0.6767	
VAR, 55 P287	0.7371	0.6552	0.7026	0.5819	0.6638	0.6466	0.6293	0.7069	0.6164	0.7802	0.5345	0.6810	
VAR, 56 P288	0.2241	-0.1034	0.1638	0.0517	0.0	-0.0302	0.0086	-0.0776	-0.0302	-0.0086	0.0302	0.0086	
VAR, 57 P289	0.2414	0.2888	0.4655	0.2931	0.2759	0.3491	0.2931	0.3966	0.3750	0.2500	0.3276	0.2759	
VAR, 58 P295	0.5086	0.6681	0.7198	0.5905	0.7284	0.5948	0.5259	0.5345	0.6466	0.6552	0.4526	0.7026	
VAR, 59 P298	0.5991	0.7026	0.6595	0.5431	0.7198	0.5560	0.5345	0.4914	0.6509	0.7241	0.5431	0.6466	
VAR, 60 P299	0.6379	0.6422	0.6293	0.5129	0.6379	0.5388	0.5302	0.4741	0.6638	0.6638	0.6034	0.6897	

Example 2: Principal Components Factor Matrix

PRINCIPAL COMPONENTS FACTOR MATRIX

COMMUNALITY	VAR		FACTOR LOADINGS 1	2	3
0.656	1	P102	0.822	-0.108	0.009
0.611	2	P104	0.783	0.006	0.012
0.615	3	P107	0.776	0.034	0.107
0.670	4	P108	0.069	-0.092	-0.290
0.637	5	P113	0.764	-0.115	0.295
0.583	6	P114	0.637	-0.379	-0.109
0.458	7	P116	0.635	-0.187	-0.292
0.452	8	P119	0.626	-0.266	-0.028
0.676	9	P121	0.821	0.009	-0.037
0.810	10	P124	0.875	0.192	0.064
0.659	11	P129	0.822	0.052	0.142
0.417	12	P130	0.599	-0.290	0.046
0.449	13	P131	0.672	-0.200	0.064
0.497	14	P132	0.660	-0.204	0.139
0.604	15	P135	0.730	0.226	-0.140
0.707	16	P137	0.829	0.060	0.127
0.642	17	P151	0.730	-0.074	0.213
0.740	18	P162	0.824	-0.243	0.047
0.812	19	P163	0.862	0.029	0.245
0.340	20	P166	0.764	0.057	0.149
0.492	21	P168	0.529	-0.272	-0.278
0.712	22	P171	0.811	-0.367	-0.154
0.521	23	P175	0.656	-0.181	-0.077
0.503	24	P176	0.666	0.129	-0.207
0.720	25	P179	0.815	0.213	0.107
0.771	26	P180	0.832	0.257	0.208
0.706	27	P188	0.872	-0.156	0.017
0.661	28	P196	0.737	-0.248	0.216

C.625	29 P181	C.744	-C.234	0.178	
C.639	30 P186	0.779	-0.094	0.151	
C.349	31 P214	C.554	0.129	-0.139	
0.791	32 P215	0.842	C.050	C.282	
C.681	33 P226	0.817	C.108	0.044	
C.610	34 P231	0.772	0.109	-C.026	
C.778	35 P234	0.882	C.014	-0.077	
C.659	36 P235	0.832	0.076	C.010	
C.57P	37 P236	0.735	0.181	0.069	
0.5R3	38 P237	C.722	-C.235	C.077	
C.6C1	39 P239	0.549	-0.169	-C.501	
0.779	40 P242	0.864	C.131	-0.172	
C.424	41 P243	0.395	0.511	-0.113	
C.474	42 P244	C.642	C.108	-C.022	
0.647	43 P252	0.793	0.070	-0.116	
0.717	44 P253	0.824	0.154	-0.117	
0.737	45 P254	0.854	0.076	C.094	
C.339	46 P257	0.560	0.068	-0.146	
C.732	47 P258	0.850	-0.094	0.018	
0.547	48 P260	0.837	-C.289	-C.241	
C.535	49 P265	0.724	-0.100	C.045	
C.810	50 P266	0.807	0.371	-0.144	
C.620	51 P267	C.763	-C.016	C.140	
0.717	52 P268	0.811	-0.243	C.077	
C.706	53 P269	0.833	0.130	-C.029	
C.619	54 P276	0.769	C.017	-C.172	
C.47C	55 P281	0.879	0.169	-0.136	
0.188	56 P288	0.068	-0.310	-0.272	
C.231	57 P289	0.425	-0.216	-C.041	
C.685	58 P295	0.809	-0.169	C.047	
0.657	59 P298	0.802	0.004	0.114	

C.742	60 P289	0.860 -C.051	C.015
C.733	61 P6	0.844 0.132	0.091
C.771	62 P7	0.850 -0.194	0.102
0.756	63 P8	0.839 0.181	C.147
C.742	64 P9	0.861 C.010	-C.003
C.594	65 P10	0.736 0.076	0.078
C.741	66 P11	0.842 -0.175	-0.041
C.716	67 P19	0.840 -0.169	C.042
C.659	68 P20	0.799 -0.020	0.019
C.701	69 P21	0.832 0.200	-C.222
C.767	70 P26	0.853 0.102	-0.168
C.748	71 P29	0.853 -0.080	-0.120
C.547	72 P43	0.677 0.764	-0.136
C.555	73 P46	0.669 -C.188	-C.270
C.693	74 P52	0.747 0.338	C.147
C.375	75 P54	0.605 0.096	-C.011
C.757	76 P55	0.862 -C.055	C.103
C.628	77 P60	0.741 -0.037	C.041
C.548	78 P62	0.734 0.090	0.015
C.713	79 P63	0.744 0.232	-C.325
C.575	80 P67	0.757 C.040	C.014
C.578	81 P68	0.742 -0.139	-0.034
C.568	82 P72	0.619 0.101	-C.318
C.834	83 P73	0.788 -C.012	C.111
C.581	84 P78	0.749 -0.005	-0.004
C.681	85 P79	0.843 -0.031	0.018
C.567	86 P83	0.742 C.082	-C.170
C.572	87 P90	0.756 C.009	-0.045
C.751	88 P93	0.846 C.189	C.049
C.428	89 P95	0.836 -C.022	C.149
C.661	90 P98	C.810 C.024	C.048

Example 3: Varimax Rotation: Simple Structure Matrix

VARIMAX ROTATION

INITIAL CRITERION = .8R4.39067?0

SOLUTION OPTIMIZED AFTER 8 ITERATIONS. FINAL CRITERION = 936.4262227
FACTOR 2 IS REFLECTED.
FACTOR 2 IS REFLECTED.

SIMPLE STRUCTURE MATRIX

VARIABLE	1	2	3
1 P102	0.690	0.240	0.453
2 P104	0.577	0.227	0.581
3 P107	0.609	0.136	0.476
4 P108	-0.052	0.268	0.039
5 P113	0.767	0.103	0.321
6 P114	0.514	0.547	0.238
7 P118	0.469	0.606	0.289
8 P119	0.527	0.170	0.194
9 P121	0.573	0.277	0.522
10 P124	0. 4	0.101	0.660
11 P129	0.655	0.113	0.507
12 P130	0.558	0.279	0.368
13 P131	0.589	0.237	0.214
14 P132	0.639	0.201	0.219
15 P135	0.160	0.215	0.655
16 P137	0.668	0.323	0.372
17 P141	0.726	0.054	0.336
18 P142	0.723	0.145	0.314
19 P143	0.758	0.045	0.485
20 P146	0.596	0.038	0.428
21 P148	0.348	0.527	0.196
22 P151	0.564	0.467	0.418
23 P155	0.535	0.271	0.314
24 P156	0.338	0.300	0.560

25	P159	0.564	0.053	0.632
26	P160	0.667	0.034	0.676
27	P168	0.716	0.321	0.413
28	P176	0.789	0.141	0.197
29	P181	0.706	0.252	0.251
30	P186	0.688	0.270	0.371
31	P214	0.261	0.228	0.478
32	P215	0.747	0.009	0.482
33	P226	0.574	0.180	0.572
34	P231	0.485	0.223	0.570
35	P234	0.619	0.285	0.560
36	P235	0.589	0.192	0.561
37	P236	0.498	0.075	0.569
38	P237	0.663	0.286	0.250
39	P239	0.703	0.660	0.355
40	P242	0.506	0.293	0.661
41	P243	0.008	-0.065	0.448
42	P244	0.415	0.157	0.481
43	P252	0.487	0.248	0.471
44	P253	0.470	0.264	0.654
45	P254	0.618	0.180	0.568
46	P257	0.297	0.252	0.431
47	P258	0.664	0.297	0.449
48	P260	0.445	0.540	0.240
49	P265	0.485	0.248	0.163
50	P266	0.359	0.165	0.810
51	P267	0.674	0.104	0.393
52	P268	0.707	0.157	0.312
53	P269	0.543	0.221	0.602
54	P276	0.463	0.161	0.526
55	P287	0.493	0.288	0.307

56	P288	0.032	0.411	-0.132
57	P289	0.367	0.293	0.117
58	P295	0.676	0.330	0.363
59	P298	0.644	0.155	0.467
60	P299	0.653	0.280	0.427
61	P6	0.587	0.149	0.605
62	P7	0.757	0.284	0.352
63	P8	0.617	0.054	0.615
64	P9	0.619	0.262	0.529
65	P10	0.547	0.124	0.489
66	P11	0.659	0.384	0.399
67	P12	0.701	0.419	0.380
68	P13	0.496	0.269	0.673
69	P21	0.499	0.329	0.719
70	P26	0.489	0.341	0.645
71	P29	0.584	0.400	0.496
72	P43	0.308	0.179	0.649
73	P46	0.417	0.519	0.342
74	P52	0.486	-0.066	0.673
75	P54	0.194	0.144	0.446
76	P55	0.705	0.213	0.463
77	P60	0.604	0.239	0.451
78	P62	0.504	0.166	0.515
79	P63	0.265	0.362	0.716
80	P67	0.541	0.201	0.493
81	P68	0.543	0.376	0.378
82	P72	0.720	0.404	0.544
83	P73	0.639	0.161	0.447
84	P76	0.544	0.236	0.459
85	P79	0.424	0.217	0.460
86	P81	0.409	0.107	0.551

87 P90	0.931	0.247	0.478
88 P93	0.564	0.121	0.648
89 P95	0.593	0.090	0.337
90 P98	0.616	0.182	0.459

VITA

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1973-75	Title II B Fellow, Rutgers University.
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1976	Ph.D. in Library Service.