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OPINIONS TOWARD AUTOMATED INFORMATION RETRIEVAL AMONG REFERENCE LIBRARIANS: A NATIONAL SURVEY

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ABSTRACT

The purpose of this study was to identify opinions among members of the American Library Association (ALA), Reference and Adult Services Division (RASD) toward automated information retrieval services. Specifically, the primary objectives were to identify prevalent viewpoints concerning the role of librarians in relation to such services and to determine the practical needs of the profession to better cope with the new technology. A secondary objective was to experimentally test the effect of two variables on response rate. These variables were perceived prestige of sender and incentive for the respondent.

The survey was a one-shot descriptive research design, involving a split mailing using a 2 x 3 factorial experimental design for the methodology study. Three levels of prestige of sender were projected by use of different letterhead representing the ALA-RASD, The University of Tennessee--Knoxville Library, and a graduate student. The incentive used was an artistically designed bookmark.

The population consisted of registered members of the ALA-RASD in September, 1975 and numbered 4062. The equal interval method of random sampling was used to select a drawn sample of 738. The data gathering instrument was a four-page questionnaire. An advance postcard, a stamped return envelope and a reminder/thank you followup postcard were sent to each participant in February, 1976. The total number of usable returns was 542, a response rate of 73.4%.

Response to a mail questionnaire among the responding

librarians was not significantly affected by either inclusion of a bookmark incentive nor by the projected status of the sender.

Most respondents have had little, if any, personal exposure to automated information retrieval services. However, respondents with greater personal exposure to automated information retrieval expressed a desire for greater involvement by libraries in offering such services than did respondents with limited personal experience in this area. Academic librarians expressed the greatest desire to see libraries be directly involved with offering automated information retrieval services among a variety of types of responding librarians.

Cost was clearly perceived to be the greatest obstacle to offering such services in libraries today. No significant difference of opinion existed between library administrators and reference librarians concerning the expectation that library users should absorb the operating costs of such services.

Respondents perceived their greatest information needs concerning automated information retrieval services to be in the areas of current developments, availability of data bases, and applicability to different types of libraries. The most frequently noted preferred channels of communication were workshops, institutes or seminars. A strong desire for library schools to actively take part in providing continued education in the field of automated information retrieval was expressed.

PREFACE

Librarians are specialized communicators. As librarians, they have a guiding self image of being providers of information. As communicators, their message production process incorporates a sophisticated system of selecting, identifying, and preserving recorded information. Their channels of communicating this information employ a variety of bibliographic and personal media such as, to cite a few, card catalogs, abstract and index tools, automated information retrieval systems, and the assisting reference librarian himself. These channels thus offer both direct and indirect methods for the library user to receive the information messages sought; either the datum itself is transmitted or access to retrieving it is offered.

But unlike today's conscious communicator, the average librarian is unaware of and uninvolved in evaluating the communication processes he undergoes with his clientele and with his messages. Very few librarians actively and systematically study the information needs of their public, the responses to the services offered or the quality of the formulated message itself. In communication terms, little has been done in the areas of market research, feedback analysis, audience response and quality control in the library world. Perhaps the traditional commitment and the socially encouraged responsibility to provide free access to information has offered American librarians the luxury of not developing within a financially competitive market which demands immediate cost benefits and profit motivated justifications for existence. But as service operations and information itself become

increasingly more expensive to maintain and as financial resources become smaller to share, even such traditional social functions as library service need to take part in the competitive market. Additional incentives to compete for continued existence are presented by commercial enterprises which have recognized the growing need for information in our society and thus have appraised a potential profitable market for providing access to it and specialized packaging of it.

Thus, with the combination of a basic philosophical commitment to providing access to information, of existing knowledge in the handling of recorded information, of the much needed skills in market analysis, and of the potential application of communication techniques, librarians could not only survive, but could develop into modern communicators, motivated by a unique function of providing information as needed.

On a theoretical level, numerous problems may be explored in analyzing the communication elements of library services. Analogies between the two disciplines may be drawn from various perspectives. However, both disciplines are ultimately highly practical fields with service goals to meet. Thus the focus of the study reported here is a specific problem in communication methodology as explored in the context of library science. Results will offer a specific contribution to the growing bank of empirical data evaluating factors of mail survey methodology and will also present feedback to the library profession on a specific area of its service.

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CHAPTER I

INTRODUCTION

Development of the Problem and Purpose of the Study

Library services using automated information retrieval are relatively new. Although computers were first used in the 1950's to conduct literature searches, it has not been financially feasible for the majority of even large research libraries to individually engage in providing direct, "online" access to computer-based bibliographic data bases until within the last three years when the major commercial jobbers offered more flexible pricing schedules in contracting such access. Even now, many library administrators feel such service is too costly to absorb. Some promote the concept of the library being a "broker" who assists in offering access for its users, but which does not itself process automated bibliographic searches.

Discussions about automated information retrieval within the library profession began among those librarians who were primarily interested in the technical development of data files, of computer equipment and of retrieval software. More recently, attention has been given to topics of reference service using these new technological methods. No agreement seems to have been reached, however, concerning the role of librarians in relation to automated information retrieval services.

The present survey was developed by the author in response to an idea initiated by Peter Watson, Chairman (1972-76) Information

Retrieval Committee, Reference and Adult Services Division, American Library Association (IR/RASD/ALA) and further discussed among committee members. This committee is charged:

> . . . to disseminate information on computer-based retrieval systems and reference and information sources in machine readable form to the division membership, to promote the reference viewpoint in the design and evaluation of information retrieval systems, and to advise regional and local groups in educating their memberships in new reference technology. (ALA, 1975, p. 45)

In order to fill this communication role, the committee membership felt that there was a need to identify what the "reference viewpoint" is among the RASD membership. The study was thus proposed as a means to gain some insight into reference librarians' attitudes toward automated information retrieval services, to identify their needs for more information about such services, and to determine their preferences among the means for acquiring such information. It is hoped that such data will be used ultimately by the committee to help plan future projects and will also offer feedback to the profession on where librarians think their commitment is to this new service.

Prior to this study no attempt has been made to seek input from the RASD membership on what role librarians should assume in relation to these new technological developments. Unfortunately the profession has not often asked itself what views its members have on a given topic and thus its experts have not always had the basis for applying the most effective promotional programs to educate or to communicate effectively on a given topic to the profession. The study proposed here has been designed to solve a practical, immediate problem in librarianship, using the methodology of communication research.

Parallel with a desire to examine librarians' opinions, the study was also designed to explore a methodological issue. A recurring problem in gathering data by use of mail survey techniques is the effect of nonresponse. Numerous attempts to analyze the impact of nonresponse and to minimize its negative effects have been reported in the literature, particularly by researchers in communications, marketing, and psychology. Among these, two general factors have been reported to affect response rate to mailed questionnaires. Specifically, one--use of an incentive--has generally been used to motivate participation while another--impact of the status of sender--has not been examined as extensively in relation to rate of response. Both elements assume some sense of responsibility on the part of a potential participant; the first factor gives an acknowledgment (a material reward) in exchange for an expected response, while the second factor less explicitly offers recognition (a psychological reward) from a presumably important sponsor by the mere selection to participate, again in exchange for response. Few studies have been designed to examine the impact of these variables among a population of professionals, which is the methodological problem posed in this report.

Study Objectives

The survey reported here has two objectives. The primary objective is to contextually address two broad concerns--first, to identify prevalent viewpoints concerning the role of libraries in relation to automated information retrieval services, and secondly, to determine the practical needs of the profession to better cope with the new technology. The secondary objective is to experimentally test the effect

of two variables on response rate--perceived prestige of sender and incentive for the respondent.

In the context of the study, six specific major questions were raised as follows:

1. To what degree have RASD members been personally involved with automated information retrieval?

2. To what extent should libraries be involved in providing access to automated information retrieval services?

3. What are the perceived potential barriers hindering the incorporation of information retrieval services in libraries today?

4. How should such services be managed if offered by a library?

5. What are the information needs of the RASD membership concerning automated information retrieval services?

6. What channels of communication are preferred by RASD members to obtain information about automated information retrieval services?

The experimental portion of the study examined the effect on response rate of an incentive and of perceived prestige of sender by a split mailing. Although considerable research has been done on the effects of these factors on response rate, the interest here to repeat such an investigation is to do so in the context of a professional population, and more specifically, of librarians.

Definitions

Two phrases used throughout the study may require clarification. "Automated information retrieval services" or "computer-based information retrieval services" and "reference librarians" have

specific meaning within the context of this study.

"Automated" or "computer-based" information retrieval, in the context of this study, will refer to a machine-assisted manner of identifying bibliographic citations to meet a defined information need. The "need" is defined by a set of "keyterms," "descriptors," or "identifiers"--that is, either by words matching as closely as possible those used by an indexer who has categorized the citation for retrieval, or by words appearing in the title, author or abstract of a citation and identified by "free language" or "full text" machine retrieval--and by the interrelationship of these terms. This encoded definition of need is often referred to as the "search profile."

The profile is inputted into the retrieval system either in a "batch," or "offline" mode (where the entire file is searched for the entire profile specifications at once) or in an "interactive" or "online" mode (where the file is searched as portions of the profile are inputted and thus allows for modification throughout the search). The retrieval system is then programmed to scan various fields of the data file (e.g., index terms, author, title, abstracts, journal title, year, etc.) as instructed by the search profile. Any citation that matches the formulated combination of keyterms is considered a "hit" and becomes eligible for being printed as part of a tailor-made bibliography, which is the result of a productive automated information retrieval search.

Automated information retrieval "services" vary depending on the training, financial subsidy, subject expertise, and equipment facilities offered by the service provider. The extent of personalized

service can range from a minimal provision of making information available about where else to go for such services, to highly specialized assistance in subject analysis and profiling, online searching, humanly edited printouts, and packaged sets of retrieved articles corresponding to chosen "hit" citations. Between these two extremes, lies the typical service offered by most libraries engaged in actually securing bibliographic searches. These generally fall into one of two categories--they are either produced in "batch" at remote processing centers, or "online" through contractual arrangements with commercial jobbers such as Lockheed, or System Development Corporation, for example.

In the context of this project, the use of the concept of automated information retrieval will be limited to retrieval of bibliographic citations and abstracts at most. It will not include the available capabilities of retrieving full text (e.g., an entire article in machine-readable form), or manipulating "raw" data (such as U.S. Census tapes).

"Reference librarians" most frequently refers to a group within the profession whose primary concern is to retrieve information to meet identified needs among library users. These are usually professionals, having obtained graduate training in library and/or information sciences, frequently at the masters degree level. Some reference librarians are also subject specialists, holding additional degrees or having considerable experience in a specific subject field. Generally, reference librarians work in a public service position, thereby having frequent interaction with the library's user group. Reference

librarians are not limited by the type of library at which they work, although attitudes toward public service may be affected by the needs of the primary user population. Thus, for example, reference librarians in a special library may have a greater commitment to provide more personalized service, tailor-made and packaged information to their users than reference librarians in a school setting, where perhaps educating the users on the methods for obtaining information has greater importance than supplying it.

For the purposes of this study, a more limited, operational definition of "reference librarian" is most often used. Here, the phrase refers to members of the RASD of the ALA, registered as of September, 1975. Since payment is required to belong to this division of the ALA, it is assumed that all its members are at least interested in problems concerning library public services, reference in particular, although they themselves may not be practising reference librarians. Members receive RQ, the division's quarterly publication which is devoted to reference topics. Thus this group does not include all reference librarians, but the purpose for this study justifies the more limited definition of the group to be used. The results of the study can be projected only to the RASD membership of Fall, 1975, although conjectures may be made about the opinions of reference librarians in general.

Hypotheses

Librarians' perceptions and opinions were crosstabulated with various levels of personal experience with automated information retrieval and with different kinds of professional responsibilities.

Specifically, the following hypotheses were tested:

1. That the greater the personal exposure the respondent has to automated information retrieval, the greater involvement he will express libraries should have with offering such services to users.

2. That academic librarians will express a greater desire than other types of librarians to see libraries be directly involved with offering automated information retrieval services to users.

3. That cost will be identified as the greatest obstacle to offering automated information retrieval services.

4. That library administrators will expect users to absorb costs more than reference librarians will.

In addition, the study examined possible differences in response rate between the six sample groups defined by differing experimental treatments. The following hypotheses concerning methodology were tested:

5. That the greatest return will be from those respondents who receive an incentive and whose questionnaire is sent under the auspices of the ALA.

6. That the lowest return will be from those respondents who receive no incentive and whose questionnaire is sent under the auspices of a graduate thesis project.

CHAPTER II

LITERATURE REVIEW

The literature was searched for the following three purposes: 1) to find any other studies conducted on the topic, 2) to supplement background materials relating to the topic, and 3) to provide information on methodology. Both manual and automated methods of information retrieval searching were employed to fill these purposes.

Ironically, most literature in the library and information sciences is not accessible by automated methods; the three major indices for the field's literature are not machine-stored. Searches on the topic of automated information retrieval were conducted retrospectively to 1970 in Library Literature, Library & Information Science Abstracts, Information Science Abstracts, and Public Affairs Information Service Bulletin; terms used to search each index are listed in the Appendix. The 1970 early cutoff date for searching was based on the assumption that literature prior to this decade is likely to be outdated, if applicable to the topic at all. In addition, a search of Comprehensive Dissertation Index from 1861 to date was conducted.

Literature on the methodology for design, administration and analysis of components of the survey was not searched exhaustively. Two key resources were consulted for reference on methodological questions; these were Backstrom and Hursch (Backstrom, 1963) and Erdos (Erdos, 1970). In addition, manual searches of the Public Opinion Quarterly from 1970 through 1975 and of its subject Cumulative Index

1937-67 were performed by the headings "Mail Surveys" and "Advance Notices." An automated search of Psychological Abstracts from 1967 to June, 1976, was conducted through the Lockheed DIALOG system; a summary of the search profile and postings is included in the Appendix.

No study of librarians' attitudes toward automated literature retrieval was found in the literature. Very little empirical evidence was found on implications of this new technology on the profession; the key contribution in this area is the recent SDC study (Wanger, 1976) which focused on the overall impact of automated information retrieval services on its users, libraries being the major one of several identified user groups. A primary reference on the topic of automated information retrieval as a reference service is Computer-Based Reference Service (Mathies and Watson, 1973). A search of the literature revealed a void on the topic of reference librarians' opinions on automated information retrieval services. A few sources were found where the need for traditional librarians to extend their role is urged as information handlers (Borman, 1972; DeGennaro, 1973; Katzer, 1973; Landau, 1971; Martin, 1973; Mathies & Watson, 1973; Mairer, 1974); as "data base managers" (Campbell, 1973; Landau, 1971); as interfacers or the "sympathetic middle man" between the source of information and the user (Borman, 1972; Maier, 1974); as a "local retailer" (Maier, 1974); as "broker" (DeGennaro, 1973; Hock, 1975) or "referral" agent (Sharp, 1971); and as information consultant (Campbell, 1973). One (Martin, 1973) considered the users' attitudes; another (Maier, 1974) based her conclusions on a study of users' needs and interaction with data bases. However, the others were based on

each author's personal experiences and interpretations. No empirical data were found on what the profession's self-image is in the face of this new computer-based reference service.

The review of the literature for questions of methodology was more productive. Advise on three general issues was sought in the literature search--1) general research design, 2) specific nonresponse problem, and 3) analysis of data.

General Research Design

The major source consulted on questions of research design was Erdos' Professional Mail Surveys (Erdos, 1970). His discussion of the advantages and limitations of mail surveys strongly supported an inclination to use this method. The population was operationally defined by a mailing list, was geographically distributed throughout the country, and was a literate group; furthermore, time and financial resources were limited, the information sought was of a factual and easily structured nature and no special training or instruction seemed necessary to respond to questions asked. Thus, the conditions favored the advantages outlined by Erdos. His discussion did identify, however, one major problem common to all survey methods, that of nonresponse. Other references consulted on questions of research design are cited in the bibliography (Backstrom, 1963; Haskins, 1968).

Nonresponse Problem

Eight factors affecting the response rate were specifically studied by review of the literature; most were considered by Erdos. These included 1) format of questionnaire, 2) personalization, 3) return

envelope, 4) postage type, 5) advance notice, 6) followup reminder, 7) incentive, and 8) survey sponsor. A brief summary of each of these factors follows, highlighting the conclusions of evidence found in the literature.

Format of questionnaire. Erdos emphasized a preference for the size of the questionnaire not be exceed four to six pages and to be on letter-size paper. For ease in processing and for higher response rate, Erdos argued to structure the questionnaire with as many multiple, precoded questions as possible (Erdos, 1970). More current literature however challenged this decision. Stevens (Stevens, 1975) concluded from data collected that procoding has little effect on responses, but due to its advantages in coding, it should be used. One alternative, the "Echo" open-ended survey method, described by Kohan appeared attractive as a means to identify unknown alternatives among relevant, new concepts, while the traditional prelisted question approach was more appropriate for well-defined issues (Kohan, 1972).

Erdos advised against use of color stock, arguing that it resembles junk mail (Erdos, 1970). Matteson had found however that a greater number of colored than white questionnaires were returned in a mailed survey to members of a professional organization (Matteson, 1974). The Blumberg, Fuller and Hare review placed little importance on the alternative choices of typographic appearance--e.g., letterpress printing, mimeo, or color of paper (Blumberg, 1974).

Thus, the literature suggested that the primary guidelines for designing a questionnaire are standard size, managable length and ease in recording responses. Color of paper and typographic details seemed less important factors in questionnaire format.

Personalization. One of Erdos' strongest recommendations to improve response rate was to create a high sense of personal communication. However, the issue of personalized salutation on the coverletter had created some difference of opinion in the literature. Erdos acknowledged this controversy (Erdos, 1970, pp. 105-106). Some studies had shown a higher response rate when personally addressed letters were used (Carpenter, 1974; Cox, 1974; Matteson, 1974). However, a review of the issue by Blumberg, Fuller and Hare showed that with one exception on Linsky's survey of nurses, it has not mattered whether a salutation is a general "Dear friend" or names the respondent personally (Blumberg, 1974). Watson identified personalized "Dear Mr.---" salutations as elements not significantly improving response (Watson, 1965); Landy provided empirical data, replicated in two studies, which showed personalization having no effect on return rate (Landy, 1973).

There seemed to be no clear consensus within the literature on the influence of types of salutation used in mail surveys, suggesting perhaps an area for greater experimental research. Practical considerations may favor use of a general salutation, although attention needs to be given to elements of personalization wherever possible.

Return envelopes. Again, Erdos identified enclosure of a stamped reply envelope as one of the most important considerations in good mail survey construction (Erdos, 1970). He argued the psychological effect of this inclusion as being twofold: 1) that the respondent needs not pay anything to participate and 2) that failure to respond causes loss of a good stamp, representing loss of money. Advise on the appearance of the reply envelope was to make it an appropriate size

to insert into the mailing and to contain the completed questionnaire, to use a stamp, and to preaddress it to the signer of the letter. There seemed to be no debate in the literature that inclusion of a return stamped envelope improves response (Kimball, 1961; Wiseman, 1973).

Postage type. Different views concerning the effect of types of postage stamps and mailing services used in a mail survey were examined in the literature. Blumberg, Fuller and Hare found that more than eight different studies showed advantages in using expensive mail services such as air mail over first class (Blumberg, 1974); with current domestic postal procedures, however, the distinction no longer exists. Discrepancy in reported data existed on the effect of using a stamp versus using meter franked postage on inner or outer envelopes. Blumberg, Fuller and Hare reported a higher response when the return, inner envelope bore a stamp rather than meter frank (Blumberg, 1974); data reported by Kephart and Bressler and Kimball specifically favored use of air mail stamps on return envelopes to improve response (Kephart and Bressler, 1958; Kimball, 1961); Watson further supported use of a stamp returned envelope yet noted that use of a commerative stamp did not improve response (Watson, 1965); Landy in his replicated study, again noted the lack of effect on response of type of postage used (Landy, 1973). Hensley summarized a study in which the highest rate of return (71%) occurred when the inner envelope was metered. However, Hensley's conclusions, based on this study where different combinations were reviewed, were that a significant difference in response may be attributed to novelty, that dissimilar postage on outer and inner envelopes has a greater favorable impact on responses than use of the same stamps (Hensley, 1974).

It seems desirable to give some attention to type of postage used. Recommendations in the literature, as well as usual practical restraints, suggest that stamps should be used for return envelopes and meter franked postage may be desirable for outer envelopes.

Advance notice. Use of an advance notice was generally offered as a contributing factor to improve response (Erdos, 1970); a postcard with a short message seemed to be the least expensive, most effective method used. Brown offered empirical evidence that advance notice improved return rates among army officers but not among enlisted men (Brown, 1975); Heaton, Stafford, and Ford also supported the value of this technique among different populations (Heaton, 1965; Stafford, 1966; Ford, 1967). Stafford explained the effect of preliminary contact as offering greater personalization, helping to distinguish the study from impersonal mass mailings, and repeating an appeal for cooperation; he favored phone over mail however (Stafford, 1966). Hinrichs offered data to support the use of precommited participation by the user on postcards as a means to enhance response (Hinrichs, 1975). Parsons and Medford, however, cite two studies where they suggested that an advance notice does not improve the response rate when the sample was drawn from a fairly homogeneous population; one study of MBA alumni in 1970 showed 75.5% response from the no notice group and 76.1% from the notice group, while the other study of religious leaders in 1971 showed 65% response from those not receiving an advance notice and 54% response from those receiving the notice. Statistical significance was not found in either study however (Parsons, 1972). In their review of 34 studies, Blumberg, Fuller and Hare reported that only one

case was found in which an advance telephone call had a positive effect on the response rate; the other 33 studies were not affected by use of advance notices (Blumberg, 1974).

Although some debate existed in the literature, there seemed to be a greater expression of support to use advance notice than not to use one. In order to best insure as high response as possible for a mail survey, an advance notice should be used. Again practical restrictions of time and costs may preclude using effective telephone advance notice, however, a postcard instead is recommended for survey designs similar to the one reported here.

Followup reminder. Use of a followup reminder was extensively reviewed in the literature; general consensus was that a followup reminder enhanced responses (e.g., Kephart, 1958; Wiseman, 1973). Some evaluated its impact to be greater than the advance notice; as Erdos pointed out the followup mailing aims to attack the inertia of the basically uninterested, yet potential respondent (Erdos, 1970). Blumberg, Fuller and Hare stressed the favorable impact on response of sending a postcard "reminder/thank you" note a few days after an initial mailing; they cited two studies where such a mailing causes a significantly higher response (Blumberg, 1974). Followup letters were tested to be effective in increasing response in several settings; Kanuk reviewed existing empirical studies (Kanuk, 1975); Hinrichs drew similar conclusions from three studies of manufacturing company employees (Hinrichs, 1975); Etzel tested the use of no followup and of the followup letter with and without duplicate copies of the questionnaire among consumers and concluded the best method was use of a followup without

duplicates (Etzel, 1974). Nevin and Ford offered a unique variant; they tested among undergraduates the effect on response rate of sending a veiled threat in the followup letter and concluded this inclusion created a greater rate increase than a casual followup letter (Nevin, 1976).

Several researchers evaluated the phone channel over mail for the followup message and concluded that telephone is superior in its impact on response rate (Roscoe, 1975). Hochstim also favored a personal followup contact, offering evidence that a home visitor has a greater impact on response than either letter or telegram (Hochstim, 1970).

One study was found that suggested that the followup reminder does not have a significant effect on response rate (Cox, 1974).

The strong support in the literature to use a followup reminder convinced the author to recommend incorporation of such an element in any mail survey. Specifically following recommendations made by Blumberg, Fuller, and Hare, a "reminder/thank you" postcard seems particularly effective.

Incentive. Most of the literature found which dealt with incentives in mail surveys considered monetary inducements; much of the discussion centered around what amount of money is most cost effective to use as an incentive to participate in a survey.

In the literature search performed, three articles concluded that monetary incentives improved response. Armstrong offered evidence from a review of 18 empirical studies that money did have a strong positive effect on response rate (Armstrong, 1975). Kanuk and Berenson

identifled monetary incentives and followup letters to be the only consistently effective techniques reported in empirical studies which increased response (Kanuk, 1975). In a study of attitudes among Massachusetts residents toward the State Lottery, Wiseman concluded that incentive, followup postcards, offer of survey results and type of reply envelopes acted independently to effect response; a 10¢ incentive proved to have a significant positive impact on return rate.

The budget of the survey presented here was limited and furthermore a higher priority was given to other elements of funding in the survey design. As a result, data on monetary incentives were not extensively sought in the literature, since they were not likely to be used because of practical restraints.

Virtually nothing was found in the literature on incentives that did not discuss monetary ones. One article, however, did examine nonmonetary inducement as a means to improve response. Landy and Bates presented evidence from a study of attitudes toward movies among residents of Pittsburg and from a replication of the study in Philadelphia. They reported identical results that nonmonetary incentives did not affect response (Landy, 1973).

An attempt was made to review more generalized suggestions concerning use of incentives. Erdos pointed out, "use of an appropriate incentive will usually increase the response rate" (Erdos, 1970, p. 94). He suggested four characteristics for selecting an incentive: 1) effectiveness in increasing percentage of response, 2) lack of biasing distribution of returns, 3) cost within project budget, and 4) small and light enough format to mail easily.

Following the evidence and comments offered in the literature, it can be concluded that incentives may have an impact on response and that the most frequently appropriate and effective form of incentive is inclusion of money. Since for some studies, inclusion of money may be beyond the project's budgetary limits, further exploration of non-monetary forms of incentive may be desirable.

Sponsor. Not much on the effect of the sponsor's status on response rate was found in the literature reviewed. Erdos did not consider this factor except as the sponsor may bias the response to questions. Blumberg, Fuller, and Hare however considered it, but with little support:

> One may predict higher response rates when the sponsor of a survey is considered prestigious and/or relevant to the topic. Research findings do not contradict this expectation but they offer no other generally applicable principles. (Blumberg, 1974, p. 116)

They concluded that using some form of official sponsorship is better on response than using a private address. According to Psychological Abstracts, two German articles reported the testing of sponsor's authority as a variable to examine factors affecting response rate. From the English abstracts, a reader can conclude that the signing authority representing the National Board of Education and the Malmo School of Education in Larsson's study increased rate of return (Larsson, 1970). Similarly Kahler tested the impact of a prestigious versus a neutral sponsor of a questionnaire on response rate among urbanites in Ruhr with medium to high education background (Kahler, 1973). It is unclear from the abstracts exactly what method or conclusions were drawn. Feild investigated the sex of the investigator as it might

effect both response rates and expressed attitudes; he concluded that no significant differences on either variable were found due to the sponsor's sex (Feild, 1975).

The influence of the sender's status on response does not seem to have been extensively explored in the literature. What little does appear on the topic suggests that an impact may exist and that this may be a fruitful topic for experimental research.

Analysis of Data

The third and final use of the literature on methodology was for supportive information for analysis of results. The Statistical Package for the Social Sciences (SPSS), Sixth Edition, was used almost exclusively for this purpose. Some assistance in review of statistical analysis (e.g., Chi Square test) was also obtained from Hoel (Hoel, 1971).

Summary and Conclusions of Literature Review

A thorough review of library literature confirmed the suspicion that no evidence has been offered which identifies librarians' opinions on automated information retrieval services. This was not a surprising conclusion since the services are relatively new and their impact is only beginning to emerge. Furthermore, a group of professionals specifically concerned with the topics (the IR Committee members) concluded from shared experiences and common knowledge that not only was there a noticable absence of information on the topic, but also there was an essential planning need to identify reference librarians' views and information needs related to automated retrieval methods.

Additional attention was given to review the literature for guidance on methodological techniques. Specifically, evidence for factors affecting response rate was sought. Merging the advise drawn from the literature review with practical considerations, the following conclusions were drawn to govern the design of the present survey of RASD members.

1. To limit the questionnaire to two lettersize sheets with four sides of print, and to offer easy manners of reporting responses by precoding questions whenever possible.

2. To aim for personalization in the text of the letter to participants, but to use generalized salutations, incorporating three different types of salutations as elements reflecting sender's status.

3. To definitely enclose a stamped, addressed return envelope with the questionnaire.

4. To use stamps on the return envelope and meter franked postage on the outer envelope for variation and convenience, and to use stamps on the reminder postcard for additional appeal to the respondent's sense of the sender's investment and personal concern to obtain response.

5. To use an advance postcard notice of the survey.

6. To send a "reminder/thank you" postcard a few days after the general mailing.

7. To include a small incentive with the mailing as a means to appeal indirectly to the participant's sense of obligation in response to the sender's appreciation of expected response.

8. To test the effect on response rate of different levels of

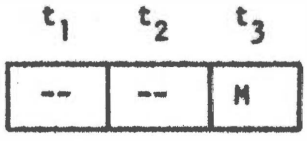
sender's status as an attempt to contribute more empirical evidence in this relatively unexplored area of research design techniques.

CHAPTER III

METHODOLOGY

Research Design

The survey reported here was an example of a one-shot descriptive research design, with a 2 x 3 factorial experimental design superimposed for the methodological study. The design is visually described in Figure 1 by the notational system introduced by Haskins (Haskins, 1968).



t_1, t_2, t_3	Sequential points in time, where t_3 represents the time during which the survey was administered
M	Measurement--the elicitation of data by means of a mail opinion questionnaire.

Figure 1. One-shot Descriptive Survey (Haskins, 1968)

The experimental portion of the study examined the effect on response rate of an incentive and of perceived prestige of sender by a split mailing. Although considerable research has been done on the effects of these factors on response rate, the interest here to repeat such an investigation was to do so in the context of a professional population, and more specifically, of librarians.

The research design involved a split mailing using a 2 x 3

factorial design as illustrated in Table 1. The independent variables were inclusion of incentive and level of sender's prestige; the dependent variable was rate of response.

TABLE 1

DRAWN SAMPLE CELLS

Incentive	Graduate Researcher	Professional Colleague	Association Authorization	Total
Incentive Included	123	123	123	369
Incentive Not Included	123	123	123	369
Totals	246	246	246	738

The incentive to answer the questionnaire was the inclusion of a bookmark designed to express the IR Committee's appreciation for cooperation in the project. Experiments have shown that the cost value of the incentive is minor, that its function is to recognize the respondent's participation and acknowledge it. With this in mind, it was assumed that the bookmark might serve such a purpose.

Three levels of the sender's prestige were projected by printing the coverletter on different letterhead and by including different return addresses on envelopes used to reflect three different sponsors. It was assumed that the most prestigious level was created by the official auspices of the ALA; additional authorization appeared in the form of the cosignature of the Division's Executive Secretary with that

of the project director. The moderately prestigious form used University of Tennessee--Knoxville Library letterhead and envelopes; the signature was only that of the project director, identified also as a professional colleague to the respondents in being Head of the Interlibrary Services Department. The least prestigious image was created by the request of a master's degree candidate working on a thesis and the coverletter was printed on plain stationary; the signature was only from the project director, identified as the graduate student. It was assumed that "prestige" was universally viewed in terms of the project director's status within the profession, and the affiliated organizational association. Figure 2 summarizes the treatments used to distinguish the three levels of sender's prestige; Table I shows the distribution of the drawn sample by the independent variables.

Assumed Level of Prestige	Stationary	Salutation	Signature
high	official ALA-RASD	Dear RASD Member	Andrew M. Hansen Executive Secretary Reference and Adult Services Division Danuta A. Nitecki Project Coordinator Information Retrieval Committee
moderate	official UTK Library	Dear Colleague	Danuta A. Nitecki Project Coordinator Head, Interlibrary Services Department
low	plain with typed PO Box	Dear Librarian	Danuta A. Nitecki Project Coordinator Master's Degree Candidate College of Communications University of Tennessee--Knoxville

Figure 2. Treatments Distinguishing Levels of Prestige

Sampling

The target population for the study consisted of members of the ALA/RASD registered as of September, 1975. The population numbered 4062. It was operationally defined by a computer-printed membership mailing list arranged by zipcode and produced in September, 1975, by ALA Headquarters.

The equal interval method of random sampling was used to select potential participants. For a tolerated error of 5% with a 95% level of confidence, the sample size should be 384 (Backstrom, 1963, p. 33). A response rate of 50% was estimated, and thus the total drawn sample originally numbered 768. However, after drawing the sample, it became apparent that the list included foreign members. To avoid the mechanical complications created by overseas mailings and to eliminate the variable of a potentially very different professional perspective, the 30 names of all RASD members living outside the United States which had been drawn for the sample were withdrawn. Fortunately, these names were equally distributed among the six cells. The final drawn sample thus numbered 738. To equally distribute the sample in the factorial design, each of the six cells needed 123 drawn subjects. A total of 369 subjects received incentives, an equal number did not. Each of the three types of sender authorization was tested on 246 subjects.

Since the population size was 4062 and the originally planned drawn sample size was 768, the skip interval used for drawing the sample was six (4062/768=5.1). After using this interval, it was evident that only 678 names were drawn. To secure the additional 90 names

needed, a second random drawing using an interval of 37 was conducted on the remaining names on the population list. To avoid this two-step drawing, an interval of five should have been used originally. For each drawing, a table of random numbers was used to randomly select the starting points of 625 and 43, respectively. Each of the names drawn was rotatingly assigned to one of the six design cells described earlier.

Data Gathering Instrument

The data collection instrument was a four-page questionnaire (see Appendix). Its 20 questions were mostly multiple choice (all except questions 3, 4, 8, 12, 14 and 19); Likert scaled attitude statements were used three times (questions 6, 10 and 11). Those questions not designed as multiple choice either required completions from preselected categories (questions 3 and 4), estimations of percentage distribution (question 8), open-ended responses (question 12), or simple demographic fill-ins (questions 14 and 19). Avoidance of open-ended questions wherever possible was intentional to simplify coding of responses.

The questionnaire was pretested and modified twice on a total of 12 librarians from the Information Retrieval Committee and the Knoxville area in December, 1975, and January, 1976. None of the people pretesting the instrument were in the drawn sample. Some individual questions were restated in response to slight confusion and inconsistent interpretations expressed during the pretests. Every effort was made to design the questionnaire layout to be simple to use, short, visually unthreatening, and condusive to coding responses

without appearing impersonal. Furthermore, attempts were made to be explicit and to use jargon-free language in designing the questionnaire.

The questionnaire was designed to be used for anonymous response; a six-letter code was printed in the upper left hand corner and was individually marked on each copy sent to reflect which of the six cells of the research design the respondent was assigned. This coding provided data for analysis of the experimental variables.

Simultaneously, the coverletter was pretested and modified with the questionnaire. As mentioned earlier the coverletter was printed on different letterhead, with different salutations and with different signatures, but its content remained the same. The purpose and use of the study were clearly identified in the letter, as was the projected sponsor. The importance of the participant's response was explicitly stated twice and was acknowledged indirectly twice. The confidential and anonymous nature of the responses was specifically assured. Attempts to personalize the letter were made by inclusion of an apology and explanation for not personally addressing each letter, and by use of the first and second person singular in reference to the sender and recipiant, respectively.

Attention was given to the appearance of the letter. Each version was typed on an electric typewriter to give a clean, clear master copy; due to added expense and less personalized appearance, no attempt was made to use computer-printed coverletters. The signature was made with a felt-tip pen to attempt to create an illusion of individually signed copies when printed. All correspondence and the

questionnaire were printed by offset methods at the ALA Headquarters and appeared legible, attractive and businesslike.

Attempts to Minimize Nonresponse

Six specific decisions were made in an attempt to minimize nonresponse. A brief summary of the reasoning behind each decision follows.

Personalization.

As Erdos stressed,

> . . . it cannot be repeated too often that the best and usually the only way to get a high percentage of response on mail surveys is to create the feeling of personal communication between researcher and respondent. (Erdos, 1970, p. 105ff)

Several attempts to create a personalized setting for the project were made. As noted earlier, the coverletter included an apology for not personally addressing each letter; the three salutations used were "Dear RASD member," "Dear colleague," and "Dear librarian," which reflected the relative relationship of the sender and the participant. The letter also used the more personal second person "you" to refer to the recipient and "I" (or "we" on the jointly signed ALA sponsored letters) to refer to the sender. Coverletters accompanying the bookmark included a postscript identifying the enclosed incentive as a gesture of appreciation for the participant's cooperation. Originally the postscript was handwritten instead of typed for added personal impact, but during a pretest it was observed that the illusion of a personal note suggested use of as much if not more time than personally addressing each letter. Thus it was decided to type the postscript on the final versions of the coverletter. Other methods used to create a

personalized atmosphere will be discussed in greater detail below, but may be mentioned here; these include a) hand addressed advance postcard, b) reminder followup cards disguised as thank you notes, and c) use of stamps where practical instead of all meter franked mailings.

Advance notice. As noted earlier, the literature offers mixed opinions on the effect of advance notice on the response rate; however no evidence seems to exist that its incorporation has a negative effect. Thus it was decided in order to improve potential response rate, to mail an advance postcard announcing the survey, identifying its purpose, and urging cooperation. The advance postcards were hand addressed, had no return address to confuse the three levels of sponsorship, were meter franked, and were mailed from Chicago on February 2, 1976, to all names in the drawn sample.

Followup card. The literature provided more consistent evidence supporting use of a followup reminder to improve response. A postcard was used which combined a "thank you" and an urgent note reminding those who hadn't, to return their completed questionnaires. An opportunity to request new copies of the questionnaire by phone or mail for those misplacing theirs was noted on the card. The followup postcards were addressed by a typewriter, included the central return address used for the study, and were mailed from Knoxville to all participants on February 18 using nine-cent postage stamps.

Stamped return envelope. One essential element to improve response cited throughout the literature was inclusion of a preaddressed stamped envelope for return of completed questionnaires. In this study,

each mailed questionnaire was accompanied by a lettersize envelope which was addressed to the Knoxville postbox and which had a 13-cent postage stamp affixed to it. The return address varied according to the projected sponsor; official envelopes were used for the ALA and UTK Library sponsored mailings while a clean envelope with the stamped return address of the Knoxville postbox was used for the graduate student sponsorship. Reference to the enclosed envelopes was made in the text of the coverletter.

Postage types. Some attention was given to the method of stamping the various mailings. Although some evidence appearing in the literature favored use of more expensive mail services, and more personalized use of stamps, it was practically difficult to do so in this study. To facilitate arrangements with ALA Headquarters, the mailings done from there were both meter franked (i.e., advanced announcement card and outer envelopes for questionnaire). The followup card mailed from Knoxville used a stamp to suggest perhaps a more personal concern about thanking the participants and urging their cooperation. The return envelope bore a stamp rather than a meter frank as suggested in the literature to show a nonrefunded expense on the part of the survey sponsor which may have further urged the participants' response. The use of both meter franking and different stamps followed evidence offered in the literature that the novelty of using dissimilar stamps may contribute significantly to higher response (Hensley, 1974).

Incentive. As noted earlier in the review of the literature, inclusion of an incentive generally effects response rate. A variety

of types of incentives have been used, though no evidence was found which tested use of a bookmark as an incentive among librarians. Use of an originally designed bookmark, identified as an acknowledgement of appreciation for the participant's cooperation, was thought to be an appropriate, lightweight, and attractive incentive for the respondents. The effect of this inclusion on response rate was tested as an experimental variable and was basic to the research design described earlier.

Coding and Analysis

The collected responses were coded by hand, keypunched and tabulated by computer using the Statistical Package for the Social Sciences-VI (SPSS-VI).

A coding manual was designed using 79 variables, thereby limiting the recording of responses to one line per questionnaire on the coding sheets.

Variables 1 through 4 reflected experimental variables, independent of responses to questions. Variable 1 recorded the sample set; variable 2 assigned an accession number within each set for each respondent; variable 3 was the date of return taken from the postmark wherever possible and was coded to reflect critical periods in the survey; variable 4 reflected the zipcode, also taken from the postmark of the return envelope and was coded to distinguish broad geographic regions of the response sample.

Variables 5 through 79 corresponded to answers to specific questions on the questionnaire. Most answers (except to questions 2, 5, 6, 10, 11, 17 and 18) were nominal and thus the numbers assigned to

most responses were coded strictly for computer processing, and did not reflect evaluative units of measure. Responses to the questions not measured at the nominal level, presented values at the ordinal level of measurement. The categories used to classify responses included the 5-point Likert scale (questions 6, 10, and 11), a relative 4-point measure of time (question 2), relative degrees of desired institutional involvement (question 5), degrees of personal involvement (question 17) and levels of education (question 18). Throughout the code, the value "9" was assigned for "no response." Responses to questions using the Likert scale (questions 6, 10 and 11) were similarly coded from "1" to "5" where "1" denoted strong agreement and "5" denoted strong disagreement.

Some manual tabulations were performed both to verify accuracy of the reported results and to determine categories for coding the open-ended questions.

All coded responses were recorded by hand on data sheets, were spot checked for accuracy, and were then submitted to The University of Tennessee Computer Center for keypunching. The center staff keypunched and verified the data cards by machine.

A simple program using SPSS-VI was designed to process the data and to report the results in two ways. First, a frequency distribution was produced giving basic percentage distribution of each variable. Second, crosstabulations were performed on all variables by the following independent variables: years of experience, type of library affiliation, job responsibility, degree of exposure, education level, and age.

Analysis of results depended almost exclusively on comparison of simple percentages. Although SPSS-VI computed chi square values for all crosstabulations, the computer program did not adjust calculations for null or small cell frequencies. Thus, conclusions on significance were not drawn based on this statistic wherever cell frequencies were small. More sophisticated statistical analysis has been left for future examination.

Costs

Since there may be interest in replicating this study or conducting another mail survey of the same or similar population, a discussion of the costs for performing this survey is offered here. A detailed breakdown of costs appears in the Appendix.

The major expense of the project was postage. The ALA absorbed the cost of mailing the advance postcards and the questionnaires and used meter frank postage methods for both. Stamps were used to mail the followup postcards and were included on the return envelopes. Postage costs assumed approximately 49% of the project costs.

Personnel time for conducting the survey was all volunteered. However, since the clerical work involved may be contracted, an estimate of time spent may be of value to report. A total of approximately 70 hours were needed to draw the sample, address envelopes and postcards, stamp return envelopes, collate and fold questionnaires and letters, stuff envelopes, and code responses. A timelog was maintained for all tasks performed in Knoxville (62.25 hours of the above total); the time to perform the tasks done by ALA staff (collating, folding, marking and stuffing questionnaires and coverletters) was estimated

based on similar timed tasks performed in Knoxville. At a salary rate of $3.00 per hour, personnel costs would comprise approximately 28% of the project costs.

Printing charges vary tremendously depending on local arrangements. The ALA Headquarters printed 150 copies of each of the six coverletters (900 sheets), and 850 copies of the four-page questionnaire (3600 back to back or 1700 sheets). A commercial printer in Knoxville printed 800 copies of both the advance and followup postcards and 400 copies of the bookmarkers on colored card stock. About 11% of the project's budget was spent for printing.

Finally, supplies and computer services comprised the remainding 12% of the project's expenses. Purchased supplies included envelopes, an address stamp, code sheets, ink, and paper. The official envelopes used for ALA and UTK Library sponsorship were donated; prorated on the cost of commercially available envelopes, this donation was added to the project's total cost estimate. For convenience, an SPSS-VI manual was purchased. Computer services were arranged through the UTK Computer Center. Incurred computer charges included costs for keypunching and verifying data cards, computer processing using the SPSS-VI package, output paper, and programing consultant time.

The total charge for the project was calculated to be $755.00. The actual expense was relative to current costs, and estimates used to price volunteer labor and subsidized services.

The estimates do not include time required for planning, developing, analyzing or reporting the survey and its results. Records were not maintained to determine the amount of actual time spent by the

author in performing these tasks since the interest in determining any time figures was potentially for planning clerical personnel needs for replicating the study. It was felt that the creative and interpretive efforts of a project coordinator were not to be clocked, although they would need to be scheduled to meet the survey's goals and timetable. In summary, Figure 3 outlines the general time schedule of the survey's progress.

The 15-month duration of this survey is in large part a result of its being conducted as a learning process for the author who was simultaneously assuming full responsibilities in her professional, full-time position. Actual time needed to replicate the study could most probably be reduced.

Survey idea initially discussed with IR Committee during ALA conferences	July, 1974--July, 1975
Project planned, initial literature reviewed, conducted and thesis proposal submitted	September--December, 1975
ALA Headquarters produced membership list of RASD as a roster of population	September, 1975
Sample drawn	November, 1975
Questionnaire, letters and cards designed	November, 1975
Questionnaire pretested and modified	December, 1975--January, 1976
Letters, cards and questionnaire printed and prepared for mailing	January, 1976
Advanced postcards mailed from Chicago	February 2, 1976
Questionnaires mailed from Chicago	February 9, 1976
Followup postcards mailed from Knoxville	February 18, 1976
Receipt of returned questionnaires closed	March 7, 1976
Results coded; data keypunched, and computer program for data analysis using SPSS-VI designed	March--April, 1976
Printout of computer processing of data received	April 20, 1976
Results initially analyzed	May, 1976
Summary paper of findings presented at ALA annual conference program, Chicago	July 18, 1976
Analysis of results completed and report written	August--November, 1976

Figure 3. Time Schedule for Survey's Progress.

CHAPTER IV

SURVEY RESULTS

The results reported here summarize the test of specific hypotheses posed at the start of the project and discuss other significant findings from an analysis of data. As noted earlier, the results were derived from responses manually coded and then processed by the SPSS-VI program. Processing produced frequency distributions of all variables and crosstabulations of all variables by a select number of demographic variables. Interpretation of statistical analysis was limited to the chi square test.

The discussion of results is presented in five major parts: 1) a summary of the returns, 2) an analysis of the experimental variables, 3) results of the hypotheses posed on the subject matter of the survey, 4) a detailed analysis of responses to specific questions posed, and 5) a description of the response group composition.

Returns

The response rate was much higher than anticipated with 76% of the total mailed questionnaires returned by March 17, when the last return used was counted. Only 4% of the returns were invalid; a questionnaire was not counted if more than half of the questions were unanswered. The total number of usable responses was thus 542, or 73.4% of the total mailed questionnaires.

The speed of response was calculated from postmarks on return envelopes. The mailing date (February 2) was subtracted from the date

marked on the return envelope to determine the number of days for response; those few envelopes without a legible postmark were counted by date received in the postbox. Of the total responses, 95.8% were returned within three weeks. Table II reflects speed of response as interpolated to correspond with the base used by Erdos (i.e., counting the percentage of returns within three weeks); the speed of response was slower than the average determined by Erdos in a review of 50 studies (Erdos, 1970). This same table also shows little positive correlation between the followup postcard and response rate.

TABLE II

COMPARATIVE QUESTIONNAIRE RETURN:
RASD VS ERDOS SAMPLES

	Sample RASD Membership		Erdos Average Sample
Time Period	Cumulative Number	Cumulative Percentage*	Cumulative Percentage
One week	222	42.8	72
Nine days**	323	62.4	83
Two weeks	446	86.1	94
Three weeks	518	100.0	100

*Interpolated to compare to Erdos' three-week base.

**Date before followup card was received in RASD study.

As Table III illustrates, the geographic distribution of the response sample corresponds fairly closely to the 1970 geographic distribution of U.S. librarians reported by Cooper (Cooper, 1976).

TABLE III

GEOGRAPHIC DISTRIBUTION OF RESPONSE SAMPLE
COMPARED TO COOPER'S SAMPLE

Geographic Area	RASD Response Sample (Percentages) (n=542)	Cooper's Data (Percentages) (n=c.122,919)*
New England & Mid Atlantic	26.6	25.9
Southeast, South, & Southwest	28.4	39.7
North Midwest, Central West & Mountains	29.0	22.1
Pacific & Northwest	12.7	12.3
No Mark	3.3	--
Totals	100.0	100.0

*Cooper, 1976, p. 328; no total was cited; the size of population is inferred from figures cited concerning New York state.

Experimental Variables

Two independent variables were manipulated to test the effects of level of projected prestige of sender and inclusion of an incentive on the response rate. The results showed no meaningful effects, thus the two hypotheses concerning methodology were not supported.

1. That the greatest return will be from those respondents who receive an incentive and whose questionnaire is sent under the auspices of the ALA.

The findings showed that this group of respondents actually had the lowest percentage of returns (69.9%).

2. That the lowest return will be from those respondents who receive no incentive and whose questionnaire is sent under the auspices of a graduate thesis project.

The findings showed that this group of respondents had the third highest percentage of return (73.2%).

Each level of projected prestige of sender generated over 70% return and differed in response rate by less than 6%. Unexpectedly, the response rate was inversely proportional to the level of status and prestige of sender; responses to the graduate student's inquiry was greater by 5.3% than responses to the same request for participation sent from the ALA. Similarly, the inclusion of the bookmark incentive seemed to have no meaningful effect on response rate. The difference in response rate was less than 3% between the two test groups. Table IV summarizes the response by the experimental variables.

TABLE IV

SURVEY RESPONSE BY EXPERIMENTAL VARIABLES

	Incentive			No Incentive			Total		
Sponsor	Sent	Returned	Percentage	Sent	Returned	Percentage	Sent	Returned	Percentage
ALA	123	86	69.9	123	89	72.4	246	175	71.1
UTK	123	92	74.8	123	87	70.7	246	179	72.8
Grad	123	98	79.7	123	90	73.2	246	188	76.4
Totals	369	276	74.8	369	266	72.1	738	542	73.4

The difference in percentage of response between the different groups of respondents was very slight. Since there were no other controlled experimental variables tested, it is difficult to conclude what the cause of this homogenity was. One might speculate that since the overall response rate was high (76%), that perhaps the topic of the questionnaire itself was of significant interest to participants and that this interest transcended any effects of methodological factors.

Results of Hypotheses Posed

Four hypotheses from the content of the questionnaire were posed at the start of the project. An analysis of the data returned showed that three were supported meaningfully. A summary of these results are highlighted here.

1. That the greater the personal exposure the respondent has to automated information retrieval, the greater involvement he will express libraries should have with offering such services to users. (Hypothesis supported.)

As seen in Table V, as the degree of personal exposure increased, there was a progressive increase in the level of desired library involvement toward providing contracted online access. The only deviation from this pattern was that those performing offline profiling as their highest level of exposure, seemed to prefer this arrangement as indicated by an expressed preference for searching to be done elsewhere.

2. That academic librarians will express a greater desire than other types of librarians to see libraries be directly involved with offering automated information retrieval services to users. (Hypothesis supported.)

TABLE V

EXPRESSED DESIRED LEVEL OF LIBRARY INVOLVEMENT
RELATED TO DEGREE OF PERSONAL EXPOSURE

	Percentage Sample Response							
Exposure	Nothing	Refer to Supplier	Send Elsewhere	Offline Profiling	Contract Online Access	Obtain for local use	Other	Total
None (n=14)	35.7	14.3	21.4	0.0	14.3	14.3	0.0	100.0
Read about (n=90)	16.7	24.4	23.3	3.3	23.3	6.7	2.2	99.9
Seen demonstrated (n=193)	3.1	16.6	25.4	4.1	35.2	13.5	2.1	100.0
Used in trial mode (n=84)	2.4	3.6	28.6	3.6	47.6	11.9	2.4	100.1
Profile offline (n=25)	8.0	12.0	28.0	12.0	20.0	16.0	4.0	100.0
Batch use (n=16)	0.0	0.0	43.8	6.3	50.0	0.0	0.0	100.1
Online use (n=78)	1.3	5.1	14.1	3.8	51.3	23.1	1.3	100.0
Design base/system (n=22)	0.0	9.1	18.2	4.5	36.4	27.3	4.5	100.0
Other (n=4)	0.0	25.0	0.0	0.0	50.0	25.0	0.0	100.0

Among the alternatives offered to participants to indicate desired levels of library involvement, the most direct involvement included to "contract with a processing center and provide on-line, interactive access . . ." and to "purchase, lease or create data files and necessary computer programs, and process requests . . . as a library operation." Responses to these two alternatives were combined in Table VI under "local access." Academic-research librarians, followed closely by professors in schools of library/information science, indicated the greatest preference for direct library involvement with automated retrieval services. The hypothesis was thus supported.

Furthermore, a more detailed analysis of the results revealed that academic-research librarians were the only group with a majority (52.7%) favoring contracted, on-line access. No other group indicated a majority agreement on any one alternative level of library involvement.

3. That cost will be identified as the greatest obstacle to offering automated information retrieval services. (Hypothesis supported.)

With 88.2% of the respondents having marked agreement that costs were a potential barrier, this was the only factor agreed to be a barrier by a clear majority of respondents. Table VII lists the evaluation of potential obstacles to offering such services.

4. That library administrators expect users to absorb costs more than reference librarians will. (Hypothesis not supported.)

The results comparing job responsibility and expected percentage contribution by users to operating costs did not uphold this

TABLE VI

EXPRESSED DESIRED LEVEL OF LIBRARY INVOLVEMENT
RELATED TO TYPE OF LIBRARY AFFILIATION

Type of Library Affiliation	Percentage Sample Response						
	Nothing	Refer to Supplier	Send Elsewhere	Offline Profiling	Local Access	Other	Total
Academic College (n=46)	10.9	19.6	39.1	6.5	23.9	0.0	100.0
Academic-research (n=129)	2.3	2.3	17.1	5.4	69.8	3.1	100.0
School (n=7)	42.9	28.6	0.0	0.0	28.6	0.0	100.1
Special (n=51)	3.9	11.8	13.7	5.9	60.8	3.9	100.0
Large Public (n=104)	4.8	12.5	21.2	1.9	59.6	0.0	100.0
Medium/small public (n=126)	7.1	25.4	36.5	1.6	27.8	1.6	100.0
Schools of library/information science (n=19)	0.0	5.3	5.3	21.1	68.5	0.0	100.2
Other (n=44)	9.1	6.8	22.7	2.3	52.3	6.8	100.0

TABLE VII

OBSTACLES IDENTIFIED AS POTENTIAL BARRIERS

	Percentage Sample Response				
Potential Barrier	Agree	Neutral	Disagree	No Response	Total
Costs (n=542)	88.2	2.6	4.8	4.4	100.0
Lack of Trained Library Personnel (n=542)	51.1	16.1	26.2	6.6	100.0
Overworked Staff (n=542)	49.6	17.0	27.5	5.9	100.0
Lack of Expressed User Need (n=542)	45.2	18.5	29.9	6.5	100.1
Present Scope of Library's Function (n=542)	40.7	12.4	39.5	7.4	100.0
Attitude Among Other Library Personnel (n=542)	29.9	28.0	34.9	7.2	100.0
Attitude Among Library Administration (n=542)	26.9	25.3	41.0	6.8	100.0
Poor Subject Coverage by Available Data Bases (n=542)	18.4	42.3	31.4	7.9	100.0
Commercial Competitors (n=542)	9.4	45.9	35.8	8.9	100.0
Other Barriers (n=542)	7.2	--	--	92.8	100.0

hypothesis. Table VIII shows expectations for users to absorb costs by respondents' job responsibility. The greatest expectation for users to absorb 76% to 100% of the operating costs was held by librarians in nearly all positions other than administration; teaching librarians were the only other clearly identified group who indicated low

preference for users to absorb a high percentage of operating costs. Although the differences in opinion were in an opposite direction from the stated hypothesis, they were not noteworthy.

TABLE VIII

EXPECTATION FOR USER TO ABSORB COSTS BY JOB RESPONSIBILITY

Job Responsibility	Percentage of Operating Cost Expected to Be Absorbed by User: Percentage of User Response					
	0-25	26-49	50	51-75	76-100	Median
Reference (n=167)	47.4	6.6	25.1	7.2	13.8	47.0
Other Public Service (n=18)	50.0	0.0	22.2	0.0	27.8	25.0
Administration (n=188)	57.4	5.3	17.0	7.4	12.7	24.5
Teaching (n=19)	63.1	0.0	21.1	10.6	5.3	20.0
Not Employed (n=19)	42.1	10.5	26.3	5.3	15.8	27.8
Other (n=71)	59.2	5.6	14.1	11.3	9.8	19.6

Responses to Questions

A review of the responses to the questions asked of the participants is organized by the broad questions posed at the start of this study.

Respondents' Degree of Personal Involvement With Automated Information Retrieval

While only 2.8% of the respondents claimed that they have had no involvement with automated information retrieval services, over half

of the respondents have never actually used such services, having at most either read about them or seen them demonstrated. Only about one fourth of the respondents have formulated search profiles, used either batch or on-line services or have been directly involved in the design of an automated information retrieval data base or system. Table IX lists, in ascending order, the levels of exposure and summarizes the distribution of responses to this question.

TABLE IX

EXTENT OF PERSONAL INVOLVEMENT

Level of Personal Involvement With Automated Information Retrieval (Increasing Order of Involvement)	Sample Response	
	Number	Percentage
None	15	2.8
Have Read About Them	94	17.3
Have Seen Them Demonstrated	197	36.3
Have Used Them in a Trial Mode	86	15.8
Have Formulated Search Profiles Offline	26	4.8
Have Used or Am Currently Using One or More Batch Services	16	3.0
Have Used or Am Currently Using One or More On-line Services	79	14.6
Have Been Directly Involved in the Design of an Automated Information Retrieval Data Base or System	22	4.1
Other	4	0.7
No Reply	3	0.6
Totals	542	100.0

There are meaningful differences between degree of exposure and type of library affiliation as seen in Table X. Most librarians with academic, public and library school affiliations have seen demonstrations of information retrieval services at least. Over a third of the special librarians have been involved as much as using on-line retrieval services, while most school librarians have only read about such services. No meaningful difference was found between degree of exposure and the other demographic variables.

Desired Extent of Libraries' Involvement

Although respondents indicated that libraries should assist their users to obtain access to automated information retrieval services, they seemed nearly equally split as to whether librarians should actually run the searches or whether they should refer search requests to other institutions. Six alternatives were offered to respondents as descriptions which most closely described the extent of involvement each felt his library should have with automated information retrieval services.

The most frequently chosen alternative was to "contract with a processing center and provide on-line, interactive access to bibliographic data bases, without necessarily having actual data files locally available;" 36% checked this arrangement. The next most frequently chosen provision was to "assist users in identifying appropriate data base, in defining a specific request, and in sending completed statement (in plain English) to another organization offering information retrieval services;" 23% chose this. Few (13.5%) felt their type of library should "purchase, lease or create data files and necessary

TABLE X

DEGREE OF PERSONAL EXPOSURE BY LIBRARY AFFILIATION

Type of Library Affiliation	Degree of Personal Exposure									
	None	Read	Demon-stration	Trial Mode	Profile Batch	Online	Design	Other	Total
	Percentage of Sample Response									
Academic College (n=48)	0.0	22.9	45.8	10.4	6.3	2.1	12.5	0.0	0.0	100.0
Academic-research (n=130)	1.5	7.7	38.5	22.3	8.5	4.6	14.6	1.5	0.8	100.0
School (n=7)	14.3	57.1	28.6	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Special (n=52)	0.0	5.8	23.1	17.3	3.8	3.8	38.5	7.7	0.0	100.0
Large Public (n=105)	2.9	25.7	39.0	12.4	2.9	1.0	10.5	3.8	1.9	100.1
Medium/small public (n=128)	3.1	24.2	43.8	13.3	3.1	3.1	7.0	2.3	0.0	99.9
Schools of Library/ information science (n=22)	4.5	4.5	22.7	18.2	0.0	9.1	18.2	18.2	4.5	99.9

computer programs, and process requests in batch, or on-line, as a library operation." On the other extreme, only 5.7% felt their type of library should "do nothing related to automated information retrieval," while nearly 13% thought their type of library should "provide printed information about such services, and refer users directly to suppliers for help." Table XI summarizes the opinions on the extent of library involvement with automated information retrieval services.

Differences were found between degree of library involvement and both degree of personal exposure and type of library affiliation. Almost consistently throughout the sample, as the degree of personal exposure increased, the extent of desired library involvement also increased as shown in Table XII. The only deviation in this pattern appeared among those librarians whose greatest level of personal exposure had been profiling offline; the majority of such librarians prefer that libraries act as referral or broker agents, with actual processing done elsewhere.

Table XIII includes responses to extent of library involvement correlated by responses to type of library affiliation. The majority of academic research librarians (52.7%) and a high percentage of librarians in both schools of library/information sciences (47.4%) and special librarians (47.1%) indicated that they felt their type of library should be involved with automated information retrieval services by offering contracted on-line, interactive access to bibliographic data bases. Nonresearch academic librarians (39.1%) and medium/small public librarians (36.5%) felt their libraries should "assist users . . .

TABLE XI

EXTENT OF LIBRARIES' INVOLVEMENT

Extent of Involvement (Increasing order of involvement)	Sample Response	
	Number	Percentage
Do Nothing Related to Automated Information Retrieval	31	5.7
Provide Printed Information About Such Services, and Refer Users Directly to Suppliers for Help	69	12.7
Assist Users in Identifying Appropriate Data Base, in Defining a Specific Request and in Sending Completed Statement (in Plain English) to Another Organization Offering Information Retrieval Services	126	23.2
Do the Above, but Including Actual Formulation ("coding") of Search to be Run	23	4.2
Contract with a Processing Center and Provide Online, Interactive Access to Bibliographic Data Bases, Without Necessarily Having Actual Data Files Locally Available	195	36.0
Purchase, Lease or Create Data Files and Necessary Computer Programs, and Process Requests in Batch, or Online, as a Library Operation	73	13.5
Other, Specify	11	2.0
No Response	14	2.6
Totals	542	100.0

in defining a specific request, and in sending completed statement . . ." elsewhere for processing. School librarians agreed (42.9%) that their type of library should do nothing in this area.

TABLE XII

DEGREE OF LIBRARY INVOLVEMENT BY DEGREE OF PERSONAL EXPOSURE

	Percentage of Sample Response							
Degree of Exposure	Nothing	Refer to Supplier	Off Else-where	Profile	Online Jobber	Purchase, Local Access	Other	Total
None (n=15)	35.7	14.3	21.4	0.0	14.3	14.3	0.0	100.0
Read About (n=94)	16.7	24.4	23.3	3.3	23.3	6.7	2.2	99.9
Demonstrations (n=197)	3.1	16.6	25.4	4.1	35.2	13.5	2.1	100.0
Trial Mode (n=86)	2.4	3.6	28.6	3.6	47.6	11.9	2.4	100.1
Profile Offline (n=26)	8.0	12.0	28.0	12.0	20.0	16.0	4.0	100.0
Batch Use (n=16)	0.0	0.0	43.8	6.3	50.0	0.0	0.0	100.1
Online Use (n=79)	1.3	5.1	14.1	3.8	51.3	23.1	1.3	100.0
Design Base/System (n=22)	0.0	9.1	18.2	4.5	36.4	27.3	4.5	100.0

TABLE XIII

DEGREE OF LIBRARY INVOLVEMENT BY RESPONDENT'S TYPE OF LIBRARY AFFILIATION

Type of Library Affiliation	Percentage of Sample Response							
	Nothing	Refer to Supplier	Off Elsewhere	Profile	Contract Online Access	Purchase, Local Access	Other	Total
Academic College (n=48)	10.9	19.6	39.1	6.5	21.7	2.2	0.0	100.0
Academic-research (n=130)	2.3	2.3	17.1	5.4	52.7	17.1	3.1	100.0
School (n=7)	42.9	28.6	0.0	0.0	28.6	0.0	0.0	100.1
Special (n=52)	3.9	11.8	13.7	5.9	47.1	13.7	3.9	100.0
Large Public (n=105)	4.8	12.5	21.2	1.9	36.5	23.1	0.0	100.0
Medium/small Public (n=128)	7.1	25.4	36.5	1.6	19.8	7.9	1.6	99.9
Library Schools (n=22)	0.0	5.3	5.3	21.1	47.4	21.1	0.0	100.2

Extent of Different Types of Libraries' Involvement with Online Retrieval

Each respondent was asked to indicate how strongly he agreed or disagree that each of eight types of libraries listed should provide online, interactive access to bibliographic data bases. There was overwhelming agreement (by 95.6% of the respondents) that academic-research libraries should provide online access to bibliographic data bases. More than 80% of the respondents also indicated agreement that special libraries or commercial organizations devoted to providing such services, academic-college libraries, large public libraries, and government libraries should each also provide such service; 73% agreed that schools of library and/or information sciences should provide such access. There was a less uniform opinion about involvement of medium and small public libraries. The majority of respondents (57.1%) disagreed that school libraries should offer such service. Table XIV lists respondents' reactions to the suggestion of different types of libraries offering online service.

Perceived Potential Barriers

Although there seemed to be favorable opinion among the respondents that libraries should offer online information retrieval services, there seemed to be some doubt that their incorporation will be unhindered. Respondents' perceptions of what barriers exist to establishing automated information retrieval services in libraries today were identified. The only potential barrier to which most respondents (88.2%) agreed might hinder establishment of such a service was costs. The other perceived potential barriers were identified by only slight tendencies to agree that overworked staff and lack of trained library

TABLE XIV

OPINIONS ON WHICH TYPES OF LIBRARIES SHOULD PROVIDE ONLINE RETRIEVAL SERVICE

Type of Library to Provide Online Retrieval Service	Percentage of Sample Response						
	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	No Reply	Total
Academic-research (n=542)	77.3	18.3	2.4	0.0	0.2	1.8	100.0
Academic College (n-542)	36.3	43.9	14.8	0.2	2.4	2.4	100.0
Large Public (n=542)	39.3	44.1	12.4	0.2	1.7	2.4	100.1
Medium/small Public (n=542)	4.4	19.7	33.0	5.4	33.9	3.5	99.9
School (n=542)	2.6	8.9	27.1	14.8	42.3	4.4	100.1
Government (n=542)	42.1	40.0	15.1	0.0	0.0	2.8	100.0
Schools of Library and/or Information Sciences (n=542)	36.5	36.5	18.5	1.1	3.9	3.5	100.0
Special libraries or Commercial Organizations Devoted to Providing Such Services (n=542)	56.5	32.7	7.7	0.6	0.0	2.6	100.1

personnel may hinder establishment of the service. Table XV lists the responses to identified potential barriers.

Several interesting observations on relationships between perceived barriers and other variables appeared in reviewing crosstabulations. For example, type of library affiliation was considered with identified barriers. Barrier A, "present scope," was perceived with strong agreement by most school librarians (60%) to be a barrier. Agreement that Barrier B, "costs," was a potential barrier was related by type of library affiliation as well; school and medium/small public libraries especially perceived costs as a barrier. "Lack of expressed user needs," Barrier C, was most frequently perceived as a barrier by nonresearch academic librarians (67.4%), school (60.0%), and medium/small public librarians (62.2%). Finally, a meaningful comparison existed between library affiliation and agreement that attitudes among both library administrators and other library personnel were potential barriers; in both cases, it was interesting to note that respondents affiliated with schools of library/information science were the only group agreeing that these were potential barriers.

Furthermore, the degree of personal involvement had some meaningful relationship to identification of some barriers. Except for offline users, batch users and offline profilers, the greater the exposure, the less agreement was expressed that costs were a barrier. Again except for offline users and profilers, increased levels of exposure were also related to greater disagreement that lack of expressed user needs was a potential barrier. Those never using automated information retrieval services agreed more frequently than those

TABLE XV

PERCEIVED POTENTIAL BARRIERS

Potential Barrier	Percentage of Sample Response						
	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	No Reply	Total
Present Scope of Library's Function (n=542)	15.1	25.6	12.4	26.4	13.1	7.4	100.0
Costs (n=542)	62.2	26.0	2.6	3.7	1.1	4.4	100.0
Lack of Expressed User Need (n=542)	11.1	34.1	18.5	22.9	7.0	6.5	100.1
Poor Subject Coverage by Available Data Bases (n=542)	4.4	14.0	42.3	25.1	6.3	7.9	100.0
Overworked Staff (n=542)	21.6	28.0	17.0	21.0	6.5	5.9	100.0
Lack of Trained Library Personnel (n=542)	15.5	35.6	16.1	21.0	5.2	6.6	100.0
Attitude Among Library Administrators (n=542)	8.1	18.8	25.3	30.8	10.1	6.8	99.9
Attitude Among Other Library Personnel (n=542)	5.2	24.7	28.0	28.8	6.1	7.2	100.0
Commercial Competitors (n=542)	3.3	6.1	45.9	28.8	7.0	8.9	100.0
Other Barriers	2.8	2.2	2.2	--	--	92.8	100.0

having used it indirectly, but less frequently than the direct users that the subject coverage of data bases, Barrier D, was a barrier.

Management of Services

Two issues were raised with this topic--what department should be primarily responsible for offering the service and how should the costs be met?

Department responsible for service. Respondents were asked "If your library did offer access to automated information retrieval services, then which department should be primarily responsible for offering the service?" A majority of the respondents (58.3%) marked general reference or reader services. Table XVI shows responses on how departments were identified as potential managers of the service.

Responses to this question were also compared to the respondents' types of library affiliation. A clear majority of respondents affiliated with academic, special and medium/small public libraries and schools of library and information sciences identified general reference/reader services as the most appropriate department to manage the service. Table XVII lists the opinions on which department should manage the service correlated with the respondents' type of library affiliation.

Suspecting that the reference department might be identified by most respondents as the logical home for automated information retrieval services, the author was curious to see what other tasks were identified as appropriate for reference librarians to perform. Respondents were asked to indicate the amount of time they felt reference

TABLE XVI

DEPARTMENT MANAGING RETRIEVAL SERVICE

Library Department	Sample Response	
	Number	Percentage
General Reference or Reader Service	316	58.3
Subject Branches	30	5.5
Interlibrary Loan	50	9.2
Separate Unit Devoted Exclusively to Such Services	103	19.0
Other	16	3.0
More Than One Department Checked	13	2.4
No Reply	14	2.6
Totals	542	100.0

librarians in their type of library should spend in performing each of several listed tasks.

TABLE XVII

DEPARTMENT MANAGING RETRIEVAL SERVICE
BY RESPONDENTS' TYPE OF LIBRARY AFFILIATION

Type of Library Affiliation	Desired Department Responsible for Service Percentage Sample Response					
	General Reference	Subject Branch	ILL	Separate Unit	Other	Total
Academic College (n=47)	70.2	0.0	10.6	17.0	2.1	99.9
Academic-research (n=128)	64.8	3.9	3.1	21.1	7.0	99.9
School (n=7)	42.9	0.0	14.3	14.3	28.6	100.1
Special (n=50)	80.0	4.0	4.0	10.0	2.0	100.0
Large Public (n=105)	46.7	12.4	12.4	21.0	7.7	100.2
Medium/small Public (n=126)	55.6	3.2	19.0	20.6	1.6	100.0
Library School (n=20)	80.0	5.0	0.0	15.0	0.0	100.0
Other (n=43)	46.5	11.6	2.3	25.6	13.9	99.9

Task F, "assist library users in gaining access to information" was seen by most respondents (89.5%) as warranting a great deal of time; it was also identified by most (87.5%) in response to another question to be the "one most important activity of an average reference librarian." The only other task which received a majority response at

the "great deal" level was C, "collection development (including book selection)." Of particular interest in regard to potential precendents to offering automated information retrieval services were tasks J, "produce specialized bibliographies," L, "literature searches" and H, "produce state of the art literature reviews." The first two of these--producing specialized bibliographies and literature searches--each were identified by about 48% of the respondents to constitute a moderate amount of time; while the latter had 46% marking "a little." Table XVIII summarizes the amount of time respondents felt reference librarians should spend on each of the identified library tasks.

Fiscal management of service. Planning the fiscal management of the service involves identifying resources for both initiation and operation of the service. Both of these dimensions were examined in the survey.

1. Initiation of service without new funding: as noted earlier, costs were identified by most respondents to be the strongest potential barrier to establishing online retrieval services. Furthermore, results suggested that costs alone may not have been the barrier, but they were in combination with the librarian's willingness to devote library funding to it. Most participants felt that a library like theirs should not initiate automated information retrieval services if no new funding is available. Table XIX summarizes distribution of responses to this question.

Differences in responses to the question of initiating the service without new funding by the type of library affiliation, degree of exposure, education, and job responsibility were meaningful.

TABLE XVIII

AMOUNT OF TIME REFERENCE LIBRARIANS SHOULD SPEND PERFORMING LIBRARY TASKS

Library Tasks	Percentage of Sample Response					
	Great Deal	Moderate Amount	A Little	None	No Reply	Total
Answer Directional Questions (n=542)	6.6	28.6	52.4	9.8	2.6	100.0
Review Reference Tools (n=542)	41.9	47.8	8.1	0.2	2.0	100.0
Catalog Assistance (n=542)	24.7	54.4	16.1	2.0	2.8	100.0
Read Professional Literature (n=542)	33.4	53.5	10.3	0.7	2.0	99.9
Collection Development (n=542)	54.2	39.5	3.7	0.4	2.2	100.0
Assist Library Users In Gaining Access to Information (n=542)	89.5	8.5	0.4	0.2	1.5	100.1
Library Instruction Programs (n=542)	29.2	45.4	21.4	2.6	1.5	100.1
Revise Cards Filed In Public Catalog (n=542)	1.1	9.2	31.7	55.9	2.0	99.9
Verify Interlibrary Loan Requests (n=542)	4.1	28.2	42.6	22.5	2.6	100.0
Produce Specialized Bibliographies (n=542)	16.1	48.3	30.1	3.9	1.7	100.1
Telephone Reference (n=542)	37.1	46.5	13.3	0.9	2.2	100.0
Literature Searches (n=542)	21.8	48.2	23.6	4.2	2.2	100.0
Research (n=542)	18.8	37.6	31.5	8.9	3.1	99.9
Produce State of the Art Literature Reviews (n=542)	5.0	19.9	46.3	22.7	6.1	100.0

TABLE XIX

INITIATION OF AUTOMATED RETRIEVAL SERVICE WITHOUT NEW FUNDING

Initiation of Service Without New Funding	Sample Response	
	Number	Percentage
Yes	105	19.4
No	330	60.9
Undecided	93	17.1
No Reply	14	2.6
Totals	542	100.0

Clearly school librarians unanimously opposed initiating automated information retrieval services without new funds; the majority of public and academic nonresearch librarians also opposed such initiation; academic research librarians were the most undecided; the majority of only respondents affiliated with schools of library science supported initiation without new funds. Table XX summarizes these responses.

Those respondents with greater exposure to automated information retrieval services had greater support of initiating the service without new funds even though only the group having designed a base or system had half responding affirmatively and the lowest percentage responding negatively. Table XXI shows distribution of responses to this issue according to degree of respondents' exposure.

Respondents with a masters degree as their highest level of education had the highest percentage of responses (67%) opposing

TABLE XX

REACTIONS TO INITIATION OF SERVICE WITHOUT NEW FUNDING
BY TYPE OF LIBRARY AFFILIATION

Type of Library Affiliation	Percentage Sample Response			
	Affirmative	Negative	Undecided	Total
Academic College (n=48)	4.2	83.3	12.5	100.0
Academic-research (n=126)	30.2	47.6	22.2	100.0
School (n=7)	0.0	100.0	0.0	100.0
Special (n=49)	28.6	51.0	20.4	100.0
Large Public (n=105)	21.9	59.0	19.0	99.9
Medium/small Public (n=128)	3.9	79.7	16.4	100.0
Library Schools (n=18)	55.6	33.3	11.1	100.0
Other (n=45)	28.9	57.8	13.3	100.0

TABLE XXI

REACTIONS TO INITIATION OF SERVICE WITHOUT NEW FUNDING
BY DEGREE OF RESPONDENTS' EXPOSURE

Degree of Exposure	Percentage Sample Response			
	Affirmative	Negative	Undecided	Total
None (n=13)	0.0	69.2	30.8	100.0
Read About (n=91)	8.8	80.2	11.0	100.0
Demonstration (n=195)	11.3	67.2	21.5	100.0
Trial Mode (n=84)	25.0	57.1	17.9	100.0
Profile Offline (n=26)	19.2	69.2	11.5	99.9
Batch Use (n=16)	25.0	37.5	37.5	100.0
Online Use (n=77)	42.9	45.5	11.7	100.1
Design Base/System (n=20)	50.0	35.0	15.0	100.0
Other (n=4)	50.0	25.0	25.0	100.0

initiation of the service without new funds; while those with no library education had the lowest percentage in opposition (45%). Furthermore, PhD holding respondents had the greatest support of initiating automated information retrieval services without new funds (38.5%). Table XXII summarizes responses on initiating the service without new funds according to respondents' level of education.

Finally, only respondents in a teaching position had a majority (55.6%) agreeing that the service should be initiated without new funds. Reference librarians and administrators were nearly identical in response, both having nearly one-fifth affirmative and three-fifths negative response. Table XXIII shows the distribution by job affiliation.

2. Operation of service: assuming that somehow the service may be initiated, a more difficult question was "how should the operating costs of providing automated information retrieval services be absorbed?" Respondents were asked to indicate their preference by noting a percentage estimate for each of the possible funding sources listed. Four sources were cited; these were 1) the existing library budget, 2) new library funds, 3) the user, including any research funds granted to the user, and 4) other, to be specified by the respondent.

The responses indicated a general opinion that the cost should be shared by the different sources. No one source was singled out by most respondents to absorb more than half of the operating costs. Fifty-four percent of the respondents noted that no part of the existing library budget should be used to operate such services; only about

TABLE XXII

REACTIONS TO INITIATION OF SERVICE WITHOUT NEW FUNDING BY RESPONDENTS' LEVEL OF EDUCATION

Education Level	Percentage Sample Response			
	Affirmative	Negative	Undecided	Total
No Library Education (n=15)	30.0	45.0	25.0	100.0
BA Library Science/5th year degree (n=12)	7.7	61.5	30.8	100.0
MSLS only (n=250)	14.0	67.0	19.0	100.0
MSLS plus grad courses (n=95)	27.7	53.5	18.8	100.0
Two Master Degrees (n=59)	23.4	65.6	10.9	99.9
PhD (n=41)	38.5	53.8	7.7	100.0
Master Degree other than MSLS (n=9)	11.1	77.8	11.1	100.0

TABLE XXIII

REACTIONS TO INITIATION OF SERVICE WITHOUT NEW FUNDING BY RESPONDENTS' JOB RESPONSIBILITY

Job Responsibility	Percentage Sample Response			
	Affirmative	Negative	Undecided	Total
Reference (n=167)	19.8	60.4	19.8	100.0
Other Public Service (n=18)	14.3	52.4	33.3	100.0
Administration (n=188)	19.9	63.7	16.4	100.0
Teaching (n=19)	55.6	38.9	5.6	100.1
Not Employed (n=19)	10.0	60.0	30.0	100.0
Other (n=71)	20.0	66.0	14.0	100.0

11% of the respondents felt that this should be the source for half or more of the costs. New library funds, however, seemed to be a more acceptable source of funding for operating the service. Nearly half of the respondents marked that this source should provide half or more of the operating costs, furthermore, one tenth of the respondents noted that new library funds should account for all the operating expenses.

The question of charging the user is an interesting controversy, since traditionally, most libraries do not charge users for service and yet librarians are in a period when it is difficult not to seriously consider such a practice. Over half the respondents indicated a preference in seeing the user absorb at most, half of the operating costs of automated information retrieval services. In fact, 46% of the respondents felt the user should absorb less than one fourth of the costs, and furthermore, 23% respondents indicated that such services should be free to the user.

In coding responses, any unspecified percentage was added to the "other" group as were explicit responses where sources such as government grants were identified. Therefore the high response indicating that "other sources" should absorb none of the operating costs may be misleading.

Table XXIV includes the responses indicating the distribution of financial support for operating the service.

Most comparisons between responses to the question on sources to absorb operating costs and demographic variables were not meaningful. The question of whether the user should pay, however, was related to

TABLE XXIV

DISTRIBUTION OF FINANCIAL SUPPORT FOR OPERATING AUTOMATED RETRIEVAL SERVICES

	Percentage Sample Response								
	Percentage of Support								
Source	0	1-24	25	26-49	50	51-99	100	No reply	Median
Existing Library Budget (n=542)	53.2	13.8	5.4	5.7	6.5	2.3	2.0	10.7	0.0
New Library Funds (n=542)	22.5	7.0	7.9	7.0	19.7	15.3	9.8	10.7	48.8
User (n=542)	23.4	17.7	6.6	5.0	18.1	10.7	7.7	10.7	24.2
Other (n=542)*	70.7	3.7	2.2	3.5	4.1	3.2	2.0	10.7	0.0

*In coding, included unaccounted percentages.

type of library affiliation. The majority of all except academic research librarians indicated a preference that users pay less than one fourth the costs; a majority of the academic research respondents (50.5%) however indicated a preference that the user contribute at least half, if not more, of the costs. Table XXV shows distribution of the opinions among librarians from different types of libraries toward how much of the operating costs the user should absorb.

The majority of respondents from academic research libraries (61.2%) and large public libraries (53.2%) also indicated that new funds should contribute less than half of the costs, while other types of librarians noted a preference for new funds accounting for most of the costs. Table XXVI shows distribution of how new funds should absorb operating costs as related to respondents' library affiliation.

TABLE XXV

AMOUNT OF OPERATING COSTS TO BE ABSORBED BY THE USER ACCORDING TO TYPE OF RESPONDENTS' LIBRARY AFFILIATION

	Percentage Sample Response						
	Percentage of Support						
Library Affiliation	0	1-24	25	26-49	50	51-99	100
Academic College (n=44)	29.5	20.5	6.8	0.0	15.9	4.6	22.7
Academic-research (n=121)	9.1	19.8	5.0	7.4	29.8	20.7	8.3
School (n=6)	66.7	16.7	0.0	0.0	0.0	0.0	16.7
Large Public (n=96)	26.0	24.0	7.3	3.1	19.8	11.5	8.3
Medium/small Public (n=109)	32.1	21.1	8.3	7.3	16.5	6.4	8.3
Library Schools (n=21)	42.9	19.0	9.5	4.8	9.5	9.6	4.8
Other (n=85)	35.3	14.1	9.4	7.1	17.6	12.9	3.5

TABLE XXVI

AMOUNT OF OPERATING COSTS TO BE ABSORBED BY NEW FUNDS ACCORDING TO LIBRARY AFFILIATION

	Percentage Sample Response						
	Percentage of Support						
Library Affiliation	0	1-24	25	26-49	50	51-99	100
Academic College (n=44)	38.6	0.0	0.0	6.8	13.6	22.6	18.2
Academic-research (n=121)	22.3	11.6	15.7	11.6	19.8	14.0	5.0
School (n=6)	16.7	0.0	0.0	0.0	16.7	33.4	33.3
Large Public (n=96)	27.1	9.4	10.4	6.3	21.9	18.8	6.3
Medium/small Public (n=109)	26.6	8.3	1.8	5.5	25.7	17.4	14.7
Library Schools (n=21)	23.8	0.0	4.8	14.3	23.8	9.6	23.8
Other (n=85)	20.0	7.1	12.9	7.1	24.7	16.5	11.7

There was a meaningful difference among different age groups in preferences expressed toward use of new funds to operate automated information retrieval services; the pattern showed a parallel increase between age and preference that new funds contribute nothing to the service costs. Table XXVII summarizes this relation between age and reactions to amounts to be absorbed by new funds.

TABLE XXVII

AMOUNT OF OPERATING COSTS TO BE ABSORBED BY NEW FUNDS ACCORDING TO RESPONDENTS' AGE

	Percentage Sample Response						
	Percentage of Support						
Age (in years)	0	1-24	25	26-49	50	51-99	100
Under 30 (n=77)	10.4	7.8	10.4	15.6	22.1	23.4	10.4
30's (n=105)	22.9	10.5	5.7	6.7	30.5	18.2	5.7
40's (n=126)	25.4	12.7	10.3	7.1	17.5	13.5	13.5
50's (n=110)	29.1	3.6	12.7	4.5	24.5	14.5	10.9
60-65 (n=38)	31.6	0.0	2.6	5.3	13.2	23.7	23.7
Over 65 (n=11)	54.5	9.1	9.1	9.1	0.0	9.1	9.1

The preference to use the existing library budget to meet operating costs was compared by type of library affiliation. Special librarians were the only type of respondents whose majority (61.5%) preferred to see the existing budget pay for up to half of the operating costs; the majority of all other types of respondents preferred that the existing budget contribute nothing to operating costs.

Information Needs Identified by the Respondents

An open-ended opportunity was provided for respondents to identify their information needs; specifically, they were asked, "what kind of information do you feel you need in order to keep yourself adequately informed in the area of information retrieval services?" Nearly a quarter of the survey participants did not respond to the question; for multiple responses only the first need cited was tabulated. Between 10% and 15% of the respondents, however, indicated a desire for each of the following categories: information on the current developments in the field and general state of the art reviews, availability of data bases and more detail on new bases, the application of automated information retrieval services to specific types of libraries, including case studies, evaluative data and generally, specific accounts of experiences with using the retrieval services. Nearly a fifth of the respondents cited the means by which they would like to obtain information rather than the kind of information needed, as the question asked. These responses were grouped as "format" replies, including mostly workshops, training and hands-on experience. Table XXVIII lists the coded categories of identified information needs.

Channels of Information

One question was specifically designed to identify the preferred channels for communicating needed information by use of precoded responses. The most frequently identified channel included selecting workshops, institutes or seminars as a preferred source for information.

TABLE XXVIII

IDENTIFIED INFORMATION NEEDS

Coded Categories of Information Needs	Sample Response	
	Number	Percentage
Current Development, State of the Art	72	13.3
Availability of Data Bases	69	12.7
Application of Systems by Library Type, Case Studies, Evaluative Data	54	10.0
Hands-on Experience	33	6.1
Costs, Funding	18	3.3
Techniques--Search Profiling, Procedures	14	2.6
Management Concerns	7	1.3
No Need for More Information	45	8.3
Other, includes format (e.g., workshops)	82	15.1
No Reply	148	27.3
Totals	542	100.0

A majority of responses also included existing library publications, with RQ, Library Journal, and American Libraries each sharing between 10% and 13% of the specified preferred titles. About half the responses noted a regional or state library/information association conference program, while only 29% noted ALA conference programs and 25% noted exhibiter's booths at conferences. To a lesser extent, "other" categories were specified by respondents, and included library school courses, new publications, on-cite instruction, personal contact and

books. Table XXIX lists the distribution of preferred communication channels.

TABLE XXIX

PREFERRED CHANNELS OF COMMUNICATIONS

Channels of Communication	Sample Response		
	Number Preferred	Total Possible Response	Percentage Preferred
Workshop, Institute or Seminar	378	542	69.7
ALA Conference Program	157	542	29.0
Regional or State Library/Information Association Conference Program	272	542	50.2
Exhibiter's Booths at Conference	137	542	25.3
Existing Library Publications	300	542	55.4
Other	85	542	15.7

These responses identifying preferred sources of information on automated information retrieval services corresponded somewhat to responses to a question which identified existing methods used by the respondent within the past year to obtain information about developments relating to librarianship in general.

Nearly all respondents indicated that they read or scanned at least half of the issues of several library journals. The majority of respondents claimed to have at least scanned American Libraries (95%), RQ (88%), or Library Journal (78%). About half the respondents

also scanned CRL, Wilson Library Bulletin, and a state or local library information association journal. Fewer than half looked at Special Libraries, a regional library/information association journal or other unspecified titles. Attendance at a professional library/information association conference on the regional, state or local level was practiced by 74% of the respondents. A majority also visited other libraries to see some aspect of their operation, and attended one or more workshops, institutes or conferences on a specific topic. Less than half of the respondents attended national level professional library/information association conferences, attended at least one nonlibrary professional association conference, or participated in a graduate level course for credit or audit.

Responsibility of Library Schools

Library schools are often expected to meet the informational needs of the profession. Respondents were asked to indicate the degree to which they agreed or disagreed that library schools should have certain responsibilities in the area of automated information retrieval. Most felt library students should gain exposure to this new method of retrieval, but varied in opinion on the extent of its requirement. However, the strongest agreement was with the statement that "library schools should take an active role in providing continued education for librarians in the field on the topic." Table XXX summarizes opinions on the role of library schools.

TABLE XXX

ROLE OF LIBRARY SCHOOLS

	Percentage Sample Response						
Library schools should . . .	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	No Reply	Total
. . . be required to have automated information retrieval as part of their curriculum to become accredited. (n=542)	41.7	32.1	12.4	9.6	1.5	2.8	100.1
. . . provide courses in the area, but not require them for graduation. (n=542)	19.0	41.5	6.5	24.4	5.5	3.1	100.0
. . . require students to gain hands-on experience in the use of at least one interactive information retrieval system. (n=542)	31.9	45.8	12.4	7.0	0.6	2.4	100.1
. . . take an active role in providing continued education for librarians in the field on the topic. (n=542)	52.0	39.7	5.9	0.2	0.2	2.0	100.0

Demographic Characteristics of Response Group

The typical RASD member responding to the questionnaire was an academic or public librarian, either directly involved in administration or reference, with an MS degree in library or information science, female, in her forties, and having worked in the profession around ten years. Cooper (Cooper, 1976) presented a current profile of the profession in general which confirmed some characteristics of the response sample members. According to Cooper's observations, American librarians are mostly in school libraries, have an MLS or lower level of education, and are female. His analysis was made from census and Bureau of Labor Statistics data for a nationwide population; the demographic characteristics of RASD members are expected to vary since the ALA is a dues-collecting organization which does not attract all librarians to join.

In response to the question, "specify the type of library organization with which you are presently associated," 44% noted public library, 30.9% indicated an academic library, 4.1% library schools, 1.3% school library/media center, and 18.3% were other, including special, government, and network center libraries; 0.4% of the response group did not reply to this question.

Another question asked respondents to "check the most appropriate description of your primary current job responsibility." More than a third indicated administration and another third indicated reference. Distribution of types of job responsibilities are shown in Table XXXI.

TABLE XXXI

JOB RESPONSIBILITIES

Job Responsibility	Sample Response	
	Number	Percentage
Reference	185	34.1
Public Service other than Reference	21	3.9
Administration	204	37.6
Teaching	21	3.9
Not presently employed	22	4.0
Other	53	9.8
Multiple responses	34	6.3
No response	2	0.4
Totals	542	100.0

The respondent's level of education was determined by responses to the question, "please indicate the level of education you have completed." Responses were coded to determine the highest level of formal education. The majority of respondents indicated completion of a masters degree in library/information science. Table XXXII shows the highest levels of education completed by the respondents.

As may have been anticipated, when asked to indicate their sex, 2% respondents either felt over or undersexed, by not replying to either choice or by replying to both. However, 66% responded female, 32% indicated male.

TABLE XXXII

HIGHEST LEVELS OF EDUCATION

Levels of Education	Sample Response	
	Number	Percentage
At most, 5th year certificate in library science	34	6.3
Masters degree in library/information science only	281	51.8
Masters degree in library/information science plus additional graduate work	104	19.2
Two masters degrees, one of which is in library/information science	66	12.2
A doctoral degree	45	8.3
Masters degree in a field other than library/ information science, no masters in library/ information science	9	1.7
No reply	3	0.5
Totals	542	100.0

Age was another sensitive area for respondents, but, as sex, was asked in order to identify the demographic character of the response group. Respondents were asked to state their age on their last birthday; the mode range was 40 to 49 years with 26% response; the median was 47 years.

Respondents were asked "how many years of professional library work experience had you completed as of January 1, 1976?" Half of the respondents have been in the profession over ten years, nearly a fourth have been in it over 20 years; the median was 13 years.

Some Sources of Error: Precision and Validity

The purpose of this study was to determine certain characteristics of the population of RASD members in relation to opinions on automated information retrieval services. Since, however, only a sample of the population was questioned, at best an estimate of the group's characteristics could be made. Furthermore, limitations of measuring people's attitudes may also have affected the utility of the results reported. Thus, in interpreting the results, it was important to consider both sources of error affecting how precisely the sample reflected its entire population and the factors of the experimental design affecting how valid the conclusions drawn from the sample's responses may have been generalized to its wider population.

Precision. Sampling error affects the degree to which the response sample group reflects the population. Every attempt was made to minimize such error in identifying potential participants. The population was defined by an official membership roster, random methods of selection were employed, and personal familiarity with subjects was ignored in the selection process.

As discussed earlier, however, nonresponse may have contributed to sample error. Guided by Erdos' recommended minimum response rate of 50% (Erdos, 1970, p. 144), the survey's 73.4% response was adequate, within the specified levels of confidence and error, to draw reliable conclusions about the population's opinions. However, the possible reasons for the 26.6% nonresponse should be recognized as potential sources of sample error. The nature of a mail survey itself allows for respondents' self selection which in turn may affect the degree to

which the response sample reflects the population. Since no attempt was made to determine actual causes for nonparticipation, only speculations on reasons for nonresponse may be offered. Reasons for nonresponse may include subjects' feelings that their knowledge, experiences, or position were not relevant to the study. This may have been particularly true of school librarians, who had a relatively low proportion of response to the questionnaire, which suggests, in turn, that perhaps they composed a large part of the nonresponse sample. As a group, school librarians were less likely to be involved with automated information retrieval services than other members of the profession and thus there was a greater potential for their disinterest and possible feelings that the survey was not relevant to them. Other reasons for nonresponse may be subjects' oversight.or negative bias against questionnaires. No questionnaires were returned due to undeliverable addresses; a few subjects however intentionally returned their questionnaires unanswered with comments excusing their participation because of retirement status or lack of experience in the area.

The sample size was drawn to reflect a 5% sample error with 95% confidence. According to Backstrom and Hursch (Backstrom & Hursch, 1963), a minimum sample size of 384 is required to achieve these levels of tolerated error and confidence. With a response rate of 542, it was clear that at a 95% level of confidence the sample error was no more than 5%.

Validity. Internally, the experimental variables were controlled by the split mailing design. As described earlier, a six-cell design was used to provide a control on groups receiving incentive and one of

three levels of sender status. Subjects were randomly distributed among the different groups. Mail administration of the questionnaire eliminated effects of interviewer bias. Errors due to questionnaire structure were minimized by the pretests and subsequent instrument modifications.

Attempts to improve external validity included use of random sampling, and designing the study to be replicated. No unnatural setting or conditions were needed to administer the questionnaire. Care was taken to document methodology. Time and cost limitations precluded an immediate replication of the survey, however results reported here may provide baseline information for future comparative study.

Due to the measures taken to insure representative sampling and the high level of response, the results reported from the sample responses may be projected to the population with a relatively high degree of confidence.

Summary of Major Findings

1. Response to a mail questionnaire among the responding librarians was not affected by either inclusion of a bookmark incentive nor by the projected status of the sender.

2. Most respondents have had little, if any, personal exposure to automated information retrieval services.

3. However, respondents with greater personal exposure to automated information retrieval expressed a desire for greater involvement by libraries in offering such services than did respondents with limited personal experience in this area.

4. Respondents generally favored library involvement with offering such retrieval services, though there was a split in opinions on whether or not librarians should run searches themselves or refer requests elsewhere for processing.

5. Academic librarians expressed the greatest desire to see libraries be directly involved with offering automated information retrieval services among a variety of types of responding librarians.

6. Cost was clearly perceived to be the greatest potential obstacle to offering automated information retrieval services in libraries today.

7. The reference department was identified by most to be the appropriate unit to administer the service.

8. Most responding librarians did not favor initiation of an automated information retrieval service without new funding.

9. Respondents generally felt that the operating costs are to be absorbed by several sources, including the library user.

10. No meaningful difference of opinion existed between library administrators and reference librarians concerning the expectation that library users should absorb the operating costs of such services.

11. Respondents perceived their greatest information needs concerning automated information retrieval services to be in the areas of current developments, availability of data bases, and applicability to different types of libraries.

12. The most frequently noted preferred channels of communications were workshops, institutes or seminars.

13. A strong desire for library schools to actively take part in providing continued education in the field of automated information retrieval was expressed.

CHAPTER V

SUMMARY AND CONCLUSIONS

The major purposes for undertaking this study were directed to two educational objectives. On one hand to acquire some background for planning continued education programs in the area of automated information retrieval services for librarians--on both what needs to be communicated and how best to communicate it. On the other hand, the project offered a means to educate the author on methodology of mail surveys, a skill lacking in most librarians' backgrounds and one logically adaptable from colleagues in communications research.

As noted at the start, the purposes were threefold: 1) to gain some insight into RASD members' opinions concerning automated information retrieval services, 2) to identify the members' needs for more information about such services, and 3) to determine the members' preferences among the means for acquiring such information. Simultaneously, there was a methodological purpose to obtain empirical evidence of the effects of incentive and prestige of sender on response rate among librarians.

Summary

Projecting the results of this survey to the larger population, they indicate that the RASD membership was generally favorably inclined to automated information retrieval, though the majority has never used the service, having at most read or seen demonstrations. Most respondents indicated that libraries should provide access to

these new services, although they were nearly equally split as to whether librarians should actually run searches or whether they should refer search requests to other institutions to be processed.

There was a very strong agreement among RASD members that academic-research libraries should contract to provide online access to automated information retrieval services. At the same time there was general disagreement, especially among academic and public librarians, that school libraries should offer such access; school librarians themselves were split on their desire to see their type of libraries involved, many seeing the service beyond the library's present scope. These attitudes reinforced the promoted purpose of automated information retrieval services as a quick means to gain access to primarily research materials.

Most RASD members felt the service should be administered by the reference and reader services department. The respondents confirmed this organizational assignment by identifying certain relevant tasks to require time from a reference librarian. Assisting users to gain access to information, producing specialized bibliographies and conducting literature searches were among tasks so identified and were all basic functions of automated information retrieval services. It was only logical that ALA members sympathetic to reference services, as shown in their additional membership in RASD, wanted to see this new automated service to become an integral part of the primary public service department.

Financial considerations are not an area of library operations which is always clearly defined or understood by the average librarian.

Most RASD members had identified costs as the major potential obstacle to initiating online access to information retrieval services in libraries today.

Clearly no single source was identified by most respondents to be the financial resource for information retrieval services, but likewise there was no clear indication of how the costs should be shared by various potential funding sources. It was acknowledged by most, however, that the user may need to pay something--the tradition of free library service is being challenged.

Most felt their existing library budget should not be used to support such services, and that the service should not be initiated without new funds. Once initiated, most respondents felt the service should be operated mostly by new funds and only partially subsidized by the user.

Academic research librarians generally had a different perspective on the funding issue. Most indicated a preference to see the user absorb the majority of operating costs and with librarians from large public libraries, they felt that new funds should provide less than half the operating expenses.

The evidence gathered from this study supported the assumption that more exposure to information retrieval services promotes a greater desire to see libraries become involved in offering access to them. Such evidence offers encouragement to promoters of information retrieval services in libraries to design and support methods to further educate the profession in this area.

The RASD membership had identified three major areas for needed

information: 1) current developments and state of the art, 2) availability of data bases and details on new bases, and 3) applicability of services to specific types of libraries. Other practical concerns included costs, search techniques, funding methods, and other management topics such as administrative responsibilities, staffing and integration with existing services.

The preferred means to acquire needed information in this area which had been identified by the survey respondents were workshops, institutes or seminars especially on regional, state or local levels, and existing publications, with RQ, Library Journal, and American Libraries being most frequently read titles. RASD members also strongly acknowledged library schools' responsibility for contributing to the profession's continued education in this area.

Conclusions

At the start of this study, four specific hypotheses concerning librarians' opinions toward automated information retrieval were posed. Three were supported by the results of the survey.

1. The greater the personal exposure the respondent has to automated information retrieval, the greater involvement he expresses libraries should have with offering such services to users.

2. Academic librarians express a greater desire than other types of librarians to see libraries be directly involved with offering automated information retrieval services to users.

3. Cost is identified as the greatest obstacle to offering automated information retrieval services.

No meaningful difference in opinion exists between administrators and reference librarians on the expectation of users absorbing operating costs of such services.

In addition, two hypotheses concerning mail survey methodology were posed and neither was upheld by the results. From evidence gathered in this survey, it can be concluded that librarians, as participants in a mail survey, are not affected either by bookmark incentives or by the status of the sponsor sending the questionnaire.

Reflections

Automated information retrieval is not a temporary fad nor is it an unprecedented replacement for present public service. It is a natural extension in an evolving technologically advanced period, of reference services to the library public seeking information; it is an adaptation of the existing systems of bibliographic organization and controls which are the foundation of library service; and it is predictably here to stay.

Within the profession, one of the reoccuring questions asked is "what is the librarian's role?" This study only touched upon attempting to gather some evidence to help answer this question in light of a new, technologically based method of retrieving information. Do librarians see themselves continuing to flip only through paper indices, while more enterprising outfits will use machines to scan the contents of these indices for information? Are librarians passive assistants, directing people to the source of information or can they be active retrievers of the information itself? Are they meager mufflers of the communication noises that hinder a user to get needed

information by providing referral, "short-cut" service or can they be essential communicators themselves by providing individually packaged data?

Additional research needs to be conducted and thought needs to be given by the profession to these philosophical issues. As a better picture of the librarian's role is drawn, priorities can more clearly be set and resources more easily found to develop not just the assumed, "library service," but to reorient the profession toward assuming an essential position in the continuing information exchange processes basic to the growth and functioning of our society.

Historically, librarians have played the role of the guardian of society's artifacts of communication; the stereotype of a possesive collector is not completely void of truth. But the profession has shattered that stereotype through its developing skills in management, community service, system analysis, user education and more recently information retrieval. The librarian can be viewed as an essential link in any classic model of the communication process involving a person seeking recorded information. The librarian can assume numerous roles in this process--to be the sender through user orientation programs, to be the channel through reference service, to be the receiver as a user of data retrieval services, or to be feedback through professional lobbying with the publishing world and information producers.

In the final analysis, the library's most important role, however, is to provide an access to recorded information. To do so, librarians have the responsibility to incorporate the most efficient means to provide such access. In certain situations, automated

information retrieval services may offer such means and thus serious consideration to their use should be given by the profession. Since these are still a relatively new resource, requiring investments of staff time and financial support, their incorporation should not be treated casually. Shared experiences, knowledge and skills among the profession may help to formulate a greater awareness of the issues and thereby assist in finding appropriate solutions.

It is only natural that library educators be expected to help train the profession in developing areas of information handling such as automated information retrieval and of service and management components. However, librarians cannot expect any one group to handle this communication function, but rather they should encourage and support a multitude of forums for such exchange.

Forums for sharing such information require the profession to partake in effective communication processes. Means need to be established to gather needed information, to review it and then to effectively disseminate it. Librarians are increasingly recognizing the value of incorporating effective means to gather information on both their own and the library users' needs through research methodology. Some are beginning to use channels of mass media to transmit their message, again both to users and to colleagues.

It is hoped that the evidence reported here may assist in this developing process. Very little data were found previously on how librarians respond to mail surveys, for example, and in particular to use of various levels of sender prestige and incentives. Hopefully, more methodological data will continue to be reported.

Ideas for Future Study

As was anticipated from the start of this project, there are various questions within the broad topic of information retrieval services for which additional research could contribute new insights. An exploration of just the limited area of librarians' attitudes to such services has only been begun in the survey presented here. Another study could be done to determine more specifically the actual level of knowledge existing about automated information retreival services among the profession, to identify how different acquired information is distributed among librarians and to examine the possible correlation between degrees of sophistication in this area with specific attitudes toward implementation, costs, management and anticipated use of the services.

From a different perspective, the utility of automated methods of literature searching needs to be analyzed from the ultimate user's--i.e., the researcher's--vantage point. How can the information be most efficiently presented, what are anticipated access points, what in fact are the time and cost limits of expected service, how well do libraries meet the user's needs? Do researchers, in fact, think of a library as the place to obtain bibliographic information? Do fee oriented or machine produced services generate greater credibility among their receiplants than more traditional free manual methods of retrieval?

The area of librarian education can also benefit from more empirical data on what the profession needs to know to offer better service, what are its projected personnel needs in this area, and

what role existing education channels can assume in the communication process.

Simultaneously to studying specific topics of library service concerns, refinement of methods to identify librarians' opinions and to better understand their roles within the communication process may provide practical, useful information. One specific area of current interest to the author is the function of feedback in a library-communication setting; how aware are librarians of its existence, do they seek it, is it valued to the extent that it contributes to the administrative process of developing service? What feedback is needed and how can it be measured? Are personal exchanges between user and librarian all unique or can the "reference interview" be better classified by type of information needed and methods to obtain it?

The value of an understanding of communication methodology and theory emerged to the author from such specific problems which face librarians in numerous decision-making, as well as service-producing situations. The analogies between the reporter, the market analyst, or the advertiser and the modern-typed librarian repeatedly occur as one delves into ways to understand the need for information, the ways of retrieving it, the manners of disseminating it, in short, the use of information. As traditional mass communicators concentrate on producing and distributing information, librarians are shedding some of their conditioned protective role and by necessity are emerging as specialized communicators. In this age of liberation movements, the time has come for communication closets in libraries to be aired and for developing the hybrid librarian-communicator that will come forth.

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APPENDICES

APPENDIX A

LITERATURE SEARCH PROFILES

1. Automated:

Search File: Psychological Abstracts 1967-June, 1976

Search System: DIALOG

Set	Items	Description
1	1936	QUESTIONNAIRES
2	37	MAIL (w) SURVEY
3	15	MAIL(W)SURVEYS
4	47	2OR3
5	1969	1-3/OR
6	0	AUTHORITY(2W)SENDER
7	0	SENDERS(W)STATUS
8	0	SPONSOR'S(W)STATUS
9	17	SPONSOR
10	579	INCENTIVES
11	4	ADVANCE(W)NOTICE
12	0	PRIOR(W)NOTICE
13	36	SENDER
14	2	PRIOR(W)LETTER
15	1	FOLLOWUP(W)LETTER
16	0	FOLLOWUP(W)POSTCARD
17	0	FOLLOWUP(W)NOTICE
18	53	9OR13
19	3	14OR15
20	4	5AND(17OR18)
21	49	20OR4
22	51	21OR11

Print: 22/5/1-51

Search Time: 0.173 minutes

Search Clarification: The final set printed (22) reflects those citations in the file which contain the following descriptors in their title, abstract, or identifier fields:

MAIL SURVEY, MAIL SURVEYS, ADVANCE LETTERS, as

well as those sharing SENDER or SPONSORS as well as QUESTIONNAIRES.

II. Manual:

Index:	Terms Searched:
COMPREHENSIVE DISSERTATION INDEX, 1861-1972, Supplement for 1973.	Section: LIBRARY & INFORMATION SCIENCE, Headings: COMPUTER, COMPUTER-ASSISTED, COMPUTER-BASED COMPUTER-PRODUCED, COMPUTERIZED, INFORMATION, INFORMATION-SEEKING
INFORMATION SCIENCE ABSTRACTS, 1970-Dec, 1975	LIBRARIANSHIP--PROFESSIONAL ASPECTS
LIBRARY & INFORMATION SCIENCE ABSTRACTS, 1969-1975	USE STUDIES, SEARCHING, RETRIEVAL SYSTEMS, LIBRARIANSHIP
LIBRARY LITERATURE, 1970-April, 1976	INFORMATION RETRIEVAL, INFORMATION RETRIEVAL SYSTEMS, USE STUDIES--INFORMATION RETRIEVAL SYSTEMS, INFORMATION STORAGE & RETRIEVAL SYSTEMS, INFORMATION SERVICES
PUBLIC AFFAIRS INFORMATION SERVICE BULLETIN, 1970-August 16, 1975	COMPUTERS--LIBRARIES, INFORMATION PROCESSING SYSTEMS, LIBRARIES AND RESEARCH--INFORMATION PROCESSING SYSTEMS
PUBLIC OPINION QUARTERLY, 1970-75, and Subject Index CUMULATIVE INDEX TO POQ, 1937-1967	Cumulative Index: MAIL SURVEYS, ADVANCE NOTICES Current Issues: Table of Contents

APPENDIX B

COVERLETTERS

ALA Sponsor, No Incentive

REFERENCE AND ADULT SERVICES DIVISION
A DIVISION OF THE
AMERICAN LIBRARY ASSOCIATION
50 EAST HURON STREET • CHICAGO, ILLINOIS 60611 • (312) 944-6780

February 9, 1976

Dear RASD Member:

As mentioned in the postcard sent to you a few days ago, your name was selected from the current membership list of the Reference and Adult Services Division of the American Library Association for participation in this important survey.

The survey is being conducted in an attempt to identify librarians' current views on automated information retrieval services. Your answers are extremely important for the success of this study, and will help the RASD Information Retrieval Committee plan a program for the 1976 annual ALA meeting on this area of developing information technology.

We apologize for not personally addressing this letter to you, but we're sure you'll understand that time and funds do not permit us to do so. We want to assure you that your responses will be kept confidential and anonymous. The questionnaires are coded strictly for statistical purposes.

Could we please urge you to return the completed questionnaire in the enclosed envelope as soon as possible, but no later than FEBRUARY 25, 1976?

Thank you very much for your help and cooperation. Results of the survey will be available to the membership.

Sincerely,

Andrew M. Hansen, Executive Secretary
Reference and Adult Services Division

Danuta A. Nitecki

Danuta A. Nitecki, Project Coordinator
Information Retrieval Committee

Enclosure.
DAN:nt

ALA Sponsor, Incentive

REFERENCE AND ADULT SERVICES DIVISION
A DIVISION OF THE
AMERICAN LIBRARY ASSOCIATION
50 EAST HURON STREET • CHICAGO, ILLINOIS 60611 • (312) 944-6780

February 9, 1976

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Sincerely,

Andrew M. Hansen, Executive Secretary
Reference and Adult Services Division

Danuta A. Nitecki, Project Coordinator
Information Retrieval Committee

Enclosure.
DAN:nt

P.S. Please accept the enclosed, originally designed, bookmark as a token of our appreciation for your help in this project.

UTK Library Sponsor, No Incentive

INTERLIBRARY SERVICES
LIBRARY
THE UNIVERSITY OF TENNESSEE
KNOXVILLE 37916

February 9, 1976

Dear Colleague:

As mentioned in the postcard sent to you a few days ago, your name was selected from the current membership list of the Reference and Adult Services Division of the American Library Association for participation in this important survey.

The survey is being conducted in an attempt to identify librarians' current views on automated information retrieval services. Your answers are extremely important for the success of this study, and will help the RASD Information Retrieval Committee plan a program for the 1976 annual ALA meeting on this area of developing information technology.

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Could I please urge you to return the completed questionnaire in the enclosed envelope as soon as possible, but no later than FEBRUARY 25, 1976?

Thank you very much for your help and cooperation. Results of the survey will be available to the membership.

Sincerely,

Danuta A. Nitecki

Danuta A. Nitecki, Project Coordinator
Head, Interlibrary Services Department

Enclosure.
DAN:nt

UTK Library Sponsor, Incentive

INTERLIBRARY SERVICES
LIBRARY
THE UNIVERSITY OF TENNESSEE
KNOXVILLE 37916

February 9, 1976

Dear Colleague:

As mentioned in the postcard sent to you a few days ago, your name was selected from the current membership list of the Reference and Adult Services Division of the American Library Association for participation in this important survey.

The survey is being conducted in an attempt to identify librarians' current views on automated information retrieval services. Your answers are extremely important for the success of this study, and will help the RASD Information Retrieval Committee plan a program for the 1976 annual ALA meeting on this area of developing information technology.

I apologize for not personally addressing this letter to you, but I'm sure you'll understand that time and funds do not permit me to do so. I want to assure you that your responses will be kept confidential and anonymous. The questionnaires are coded strictly for statistical purposes.

Could I please urge you to return the completed questionnaire in the enclosed envelope as soon as possible, but no later than FEBRUARY 25, 1976?

Thank you very much for your help and cooperation. Results of the survey will be available to the membership.

Sincerely,

Danuta A. Nitecki

Danuta A. Nitecki, Project Coordinator
Head, Interlibrary Services Department

Enclosure.
DAN:nt

P.S. Please accept the enclosed, originally designed, bookmark as a token of my appreciation for your help in this project.

Graduate Sponsor, No Incentive

Danuta A. Nitecki
P.O. Box 8285
Knoxville, TN 37916

February 9, 1976

Dear Librarian:

As mentioned in the postcard sent to you a few days ago, your name was selected from the current membership list of the Reference and Adult Services Division of the American Library Association for participation in this important survey.

The survey is being conducted in an attempt to identify librarians' current views on automated information retrieval services. Your answers are extremely important for the success of this study, and will help the RASD Information Retrieval Committee plan a program for the 1976 annual ALA meeting on this area of developing information technology.

I apologize for not personally addressing this letter to you, but I'm sure you'll understand that time and funds do not permit me to do so. I want to assure you that your responses will be kept confidential and anonymous. The questionnaires are coded strictly for statistical purposes.

Could I please urge you to return the completed questionnaire in the enclosed envelope as soon as possible, but no later than FEBRUARY 25, 1976?

Thank you very much for your help and cooperation. Results of the survey will be available to the membership.

Sincerely,

Danuta A. Nitecki

Danuta A. Nitecki, Project Coordinator
Master's Degree Candidate
College of Communications
University of Tennessee--Knoxville

Enclosure.
DAN:nt

Graduate Sponsor, Incentive

Danuta A. Nitecki
P.O. Box 8285
Knoxville, TN 37916

February 9, 1976

Dear Librarian:

As mentioned in the postcard sent to you a few days ago, your name was selected from the current membership list of the Reference and Adult Services Division of the American Library Association for participation in this important survey.

The survey is being conducted in an attempt to identify librarians' current views on automated information retrieval services. Your answers are extremely important for the success of this study, and will help the RASD Information Retrieval Committee plan a program for the 1976 annual ALA meeting on this area of developing information technology.

I apologize for not personally addressing this letter to you, but I'm sure you'll understand that time and funds do not permit me to do so. I want to assure you that your responses will be kept confidential and anonymous. The questionnaires are coded strictly for statistical purposes.

Could I please urge you to return the completed questionnaire in the enclosed envelope as soon as possible, but no later than FEBRUARY 25, 1976?

Thank you very much for your help and cooperation. Results of the survey will be available to the membership.

Sincerely,

Danuta A. Nitecki

Danuta A. Nitecki, Project Coordinator
Master's Degree Candidate
College of Communications
University of Tennessee—Knoxville

Enclosure.
DAN:nt

P.S. Please accept the enclosed, originally designed, bookmark as a token of my appreciation for your help in this project.

APPENDIX C

POSTCARDS

Advanced Postcard

You have been selected as one of 768 members of the American Library Association--Reference and Adult Services Division to participate in an important survey to determine the membership's views on automated information retrieval services.

In a few days you will receive a brief questionnaire which will take only a few minutes to fill out. Your answers will be very important to the success of this survey and will contribute greatly to ALA's future plans for programs on this topic. Please complete it regardless of the degree of experience you personally have had with automated information retrieval.

Your cooperation will be sincerely appreciated.

Danuta A. Nitecki

Danuta A. Nitecki,
Project Coordinator

February 2, 1976

Followup Reminder Postcard

Dear Participant:

Thank you for taking part in the survey for ALA on RASD members' views on automated information retrieval services. I have received numerous completed questionnaires and will soon be tabulating responses.

My deepest appreciation for your valuable help.

Danuta A. Nitecki

Danuta A. Nitecki, Project Coordinator
P.O. BOX 8285, Knoxville, TN 37916. (615) 974-4240

URGENT NOTE; If you have not had a chance to do so as yet, may I ask you to return the completed questionnaire now? If you've misplaced your copy, return this card or call me and I will send you another one. Your participation is vital to the success of the study.

APPENDIX D

BOOKMARKER INCENTIVE



I information retrieval inf ormation re trieval infor mation retr ieval inform ation retrie val informa tion retriev al informati on retrieval information r etrieval info rmation ret rieval infor mation retrl eval inform ation retrie val informa tion retriev al informati on retrieval information r etrieval info rmation ret rieval infor mation retr

APPENDIX E

QUESTIONNAIRE

A B C D E F

VIEWS ON AUTOMATED INFORMATION RETRIEVAL

(NOTE: For purposes of this study, the phrase "automated information retrieval" will be limited to the retrieval of bibliographic citations only and will not refer to the statistical manipulation of "raw" data, such as that found on the U.S. census tapes, for example.)

1. Indicate which of the following methods you have used within the past year to obtain information about developments relating to librarianship. [CHECK AS MANY AS APPLY]

   a. ☐ Attended one or more professional library/information association conferences on the national level.

   b. ☐ Attended one or more professional library/information association conferences on the regional, state, or local level.

   c. ☐ Attended one or more nonlibrary professional association conferences.

   d. ☐ Attended one or more workshops, institutes, or conferences on a specific topic.

   e. ☐ Participated in a graduate level course for credit or audit.

   f. ☐ Visited one or more other libraries to see some aspect of their operation.

   g. ☐ Read or scanned at least half of the issues of the following journals. [CHECK AS MANY AS APPLY]

      1) ☐ AMERICAN LIBRARIES
      2) ☐ COLLEGE AND RESEARCH LIBRARIES
      3) ☐ LIBRARY JOURNAL
      4) ☐ RQ
      5) ☐ SPECIAL LIBRARIES
      6) ☐ WILSON LIBRARY BULLETIN
      7) ☐ A regional library/information association journal
      8) ☐ A state or local library/information association journal
      9) ☐ Other, specify: _____

   h. Other, specify: _____

2. Listed below are several library tasks. Indicate whether you feel reference librarians in your type of library should spend a great deal, a moderate amount, a little, or none of their time in performing each of these tasks. [CHECK ONE BOX ON EACH LINE]

LIBRARY TASKS:	AMOUNT OF TIME SHOULD SPEND			
	GREAT DEAL	MODERATE AMOUNT	A LITTLE	NONE
a. Answer directional questions	☐	☐	☐	☐
b. Review reference tools	☐	☐	☐	☐
c. Catalog assistance	☐	☐	☐	☐
d. Read professional literature	☐	☐	☐	☐
e. Collection development (including book selection)	☐	☐	☐	☐
f. Assist library users in gaining access to information	☐	☐	☐	☐
g. Library instruction programs	☐	☐	☐	☐
h. Revise cards filed in public catalog	☐	☐	☐	☐
i. Verify interlibrary loan requests	☐	☐	☐	☐
j. Produce specialized bibliographies	☐	☐	☐	☐
k. Telephone reference	☐	☐	☐	☐
l. Literature searches	☐	☐	☐	☐
m. Research	☐	☐	☐	☐
n. Produce state of the art literature reviews	☐	☐	☐	☐

3. Which of the tasks listed in Question 2 above do you feel should be the one most important activity of an average reference librarian? _____

4. Which of the tasks listed in Question 2 above do you feel should be the one least important activity of an average reference librarian? _____

[PLEASE TURN THE PAGE]

5. Check the description below which most closely describes the extent of involvement you feel your library should have with automated information retrieval services. CHECK ONE BOX

a. ☐ Provide printed information about such services, and refer users directly to suppliers for help.

b. ☐ Assist us rs in identifying appropriate data base, in defining a specific request, and in sending completed statement (in plain English) to another organization offering information retrieval services.

c. ☐ Do the above, but including actual formulation ("coding") of search to be run.

d. ☐ Contract with a processing center and provide on-line, interactive access to bibliographic data bases, without necessarily having actual data files locally available.

e. ☐ Purchase, lease or create data files and necessary computer programs, and process requests in batch, or on-line, as a library operation.

f. ☐ Do nothing related to automated information retrieval.

g. ☐ Other, specify: _____

_____

6. Indicate how strongly you agree or disagree that each of the following types of libraries should provide on-line, interactive access to bibliographic data bases.
CHECK ONE BOX ON EACH LINE

On-line interactive access to bibliographic data bases should be provided by . . .	STRONGLY AGREE	AGREE	NEITHER AGREE OR DISAGREE	DISAGREE	STRONGLY DISAGREE
a. Academic-research libraries	☐	☐	☐	☐	☐
b. Academic-college libraries	☐	☐	☐	☐	☐
c. Large public libraries	☐	☐	☐	☐	☐
d. Medium & small public libraries	☐	☐	☐	☐	☐
e. School libraries	☐	☐	☐	☐	☐
f. Government libraries	☐	☐	☐	☐	☐
g. Schools of library and/or information sciences	☐	☐	☐	☐	☐
h. Special libraries or commercial organizations devoted to providing such services	☐	☐	☐	☐	☐

7. If your library did offer access to automated information retrieval services, then which department should be primarily responsible for offering the service?
CHECK THE ONE MOST APPROPRIATE BOX

a. ☐ General Reference or Reader Services

b. ☐ Subject Branches

c. ☐ Interlibrary Loan

d. ☐ Separate Unit devoted exclusively to such services

e. ☐ Other, specify: _____

8. In your opinion, how should the operating costs of providing automated information retrieval services be absorbed? Indicate your preference by noting as closely as possible the percentage estimate for each of the possible funding sources cited below; for those sources you feel should not contribute funding, assign zero percent (0%) support.

a. _____% from the existing library budget. From which area(s) would you take it? _____

_____

b. _____% from new library funds

c. _____% from the user, including any research funds granted to the user

d. _____% from other, specify: _____

9. Should a library like yours initiate automated information retrieval services if no new funding is available? CHECK ONE BOX

a. ☐ Yes

b. ☐ No

c. ☐ Undecided

PLEASE CONTINUE ON NEXT PAGE

10. Listed below are several factors that may hinder the incorporation of automated information retrieval services in libraries today. Indicate how strongly you agree or disagree that each is a barrier to establishing such services today in the type of library with which you are now associated. [CHECK ONE BOX ON EACH LINE]

POTENTIAL BARRIERS:	STRONGLY AGREE	AGREE	NEITHER AGREE OR DISAGREE	DISAGREE	STRONGLY DISAGREE
a. Present scope of library's function	☐	☐	☐	☐	☐
b. Costs	☐	☐	☐	☐	☐
c. Lack of expressed user need	☐	☐	☐	☐	☐
d. Poor subject coverage by available data bases	☐	☐	☐	☐	☐
e. Overworked staff	☐	☐	☐	☐	☐
f. Lack of trained library personnel	☐	☐	☐	☐	☐
g. Attitude among library administrators	☐	☐	☐	☐	☐
h. Attitude among other library personnel	☐	☐	☐	☐	☐
i. Commercial competitors	☐	☐	☐	☐	☐
j. Other barriers?	☐	☐	SPECIFY: _____		

11. Indicate below your opinion on what responsibility library schools should or should not have toward educating librarians in the area of automated information retrieval. [CHECK ONE BOX ON EACH LINE.]

Library schools should. . .	STRONGLY AGREE	AGREE	NEITHER AGREE OR DISAGREE	DISAGREE	STRONGLY DISAGREE
a. . . . be required to have automated information retrieval as part of their curriculum to become accredited.	☐	☐	☐	☐	☐
b. . . . provide courses in the area, but not require them for graduation.	☐	☐	☐	☐	☐
c. . . . require students to gain hands-on experience in the use of at least one interactive information retrieval system.	☐	☐	☐	☐	☐
d. . . . take an active role in providing continued education for librarians in the field on the topic.	☐	☐	☐	☐	☐

12. What kind of information do you feel you need in order to keep yourself adequately informed in the area of information retrieval services? [USE ADDITIONAL SHEET IF YOU WISH]

_____

_____

13. From what source would you personally like to obtain such information? [CHECK AS MANY AS APPLY]

a. ☐ At a workshop, institute or seminar. Specify desired location and duration: _____

_____

b. ☐ At an ALA conference program

c. ☐ At a regional or state library/information association conference program

d. ☐ At exhibiter's booths at conferences

e. ☐ In existing library publications, specify which titles: _____

_____

f. ☐ Other, specify: _____

_____

14. How many years of professional library work experience had you completed as of Jan. 1, 1976? _____ years.

[PLEASE TURN THE PAGE]

15. Specify the type of library organization with which you are presently associated. CHECK THE ONE MOST APPROPRIATE BOX

a. ☐ Academic library (no graduate programs offered)
b. ☐ Academic-research library (graduate programs offered)
c. ☐ School library/media center
d. ☐ Special library (business, technical)
e. ☐ Government library (federal, state or municipal)
f. ☐ Large public library
g. ☐ Medium or small public library
h. ☐ Network center (e.g. Union Catalog)
i. ☐ Library and/or information science school
j. ☐ Other (Specify: _____)

16. Check the most appropriate description below of your primary current job responsibility. CHECK ONE BOX

a. ☐ Reference
b. ☐ Public Service other than reference (e.g. reserve, circulation, interlibrary loan)
c. ☐ Non-Public Service
d. ☐ Administration (i.e. directly involved in policy decision making)
e. ☐ Teaching
f. ☐ Not presently employed
g. ☐ Other (Specify: _____)

17. What degree of involvement have you, personally, had with automated information retrieval services? CHECK ALL THAT APPLY

a. ☐ Have read about them
b. ☐ Have seen them demonstrated
c. ☐ Have used them in a trial mode
d. ☐ Have formulated search profiles off-line
e. ☐ Have used or am currently using one or more batch services
f. ☐ Have used or am currently using one or more on-line services
g. ☐ Have been directly involved in the design of an automated information retrieval data base or system
h. ☐ Other, specify: _____
i. ☐ None

18. Please indicate the level of education you have completed. CHECK ALL THAT APPLY

a. ☐ Bachelor's degree
b. ☐ Graduate work toward master's degree
c. ☐ Master's degree in library/information science
d. ☐ Master's degree in a field other than library/information science
e. ☐ Master's degree and additional graduate work
f. ☐ A doctoral degree

19. What was your age on your last birthday? _____ years.

20. Please indicate your sex. CHECK ONE

a. ☐ Female
b. ☐ Male

Please feel free to include any additional comments or questions you may have on topics which you would like the RASD Information Retrieval Committee to consider.

Thank you very much for your help. Please return the completed questionnaire in the enclosed envelope provided for this purpose as soon as possible.

APPENDIX F

SUMMARY OF COSTS

POSTAGE:	Advance postcards (740 x $.09)	$ 66.60
	Questionnaires (372 x $.13) plus (372 x $.24)	137.64
	Return envelopes' postage (744 x $.13)	96.72
	Followup postcard (740 x $.09)	66.60
	Subtotal	$157.56
PERSONNEL (estimates):		
	Typing envelopes (c. 5.25 hours)	
	Stamping envelopes (c. 1.75 hours)	
	Typing postcards (c. 5.8 hours)	
	Handwriting postcards (c. 5.2 hours)	
	Affixing postage stamps (c. 3.5 hours)	
	Folding and stuffing return envelopes (c. 3.4 hours)	
	Coding returns (c. 25.25 hours)	
	Estimate for time spent by ALA staff for collating marking and stuffing final mailing (c. 6 hours)	
	Drawing sample (c. 6 hours)	
	Total hours: 68.15	
	At $3.00/hour clerical salary and approximately 70 hours:	
	Subtotal	$210.00
PRINTING:	150 copies of each of 6 coverletters (900 sheets total, ALA printed) and 850 copies of 4-page questionnaire (3600 back to back or 1700 sheets, ALA printed)	$ 45.00
	800 copies of both advance & followup postcards plus 400 copies of bookmarkers (commercial printer)	38.85
	Subtotal	$ 83.85
COMPUTER CHARGES:	Includes keypunching data cards, processing charges, print paper costs, and consultant hours	$ 41.91
AUTOMATED LITERATURE SEARCH:		
	In Psychological Abstracts via UTK Library subsidized service via LOCKHEED	$ 10.15
SUPPLIES:	Envelopes (purchased and prorated donations)	$ 25.00
	SPSS-VI Manual	11.50
	Other miscellaneous	5.00
	TOTAL (ESTIMATE):	$755.00

VITA

Danuta A. Nitecki was born in London, England on October 2, 1950, and became a naturalized U.S. citizen in 1956. She attended primary and secondary schools in Chicago, Illinois and began her college education as an early entrant at the University of Chicago in 1966. After her freshman year, she received her 12th year certificate and transferred to the University of Wisconsin, Milwaukee where she completed with honors her Bachelor of Arts degree in 1970, with a major in art history. She remained at the University of Wisconsin for one additional year to continue her major area of study at the graduate level and to be a graduate teaching assistant in art history. In 1972 she received her Master of Science degree from the Graduate School of Library and Information Science at Drexel University in Philadelphia and was also awarded the Alice B. Kroeger Award for Outstanding Scholarship by the Beta Phi Mu Society. In August, 1972 she began her appointment as instructor and Interlibrary Loan Librarian at the University of Tennessee, Knoxville, and was promoted to Assistant Professor in 1975. During her first four years in this management position she has coordinated interlibrary services for Tennessee's major research library; has become active with interlibrary cooperation efforts within the state; and has initiated, developed and coordinated automated information retrieval services at the University of Tennessee Library. Her major concerns in librarianship are library cooperation, information retrieval,

and more philosophically, the role of librarians within the communication process of information exchange.

With this specialized interest, she began her graduate studies in the College of Communications in winter, 1973 and pursued her studies on a part-time basis while continuing her primary responsibilities as Head of the Interlibrary Services Department. She is a member of Phi Kappa Phi and Beta Phi Mu honor societies, and is an active member in the American Library Association, the Tennessee Library Association, and the Sierra Club. She has served on national and state library advisory committees both in elected and appointed capacities, and has contributed to the library literature.