

TELEPHONE REFERENCE SERVICE IN RURAL PENNSYLVANIA LIBRARIES:
A SURVEY

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Reference service, providing information on demand, is generally acknowledged to be a primary library function. Because it captures such a high profile within the library community, reference service has been the subject of numerous articles and studies attempting to identify and categorize the process of providing satisfactory levels of information in response to patron queries. At first glance, this would seem to be a simple task of observation; however, the problem of assessing the quality of reference service becomes more complex as the evaluation process unfolds. Such was the experience of this author while conducting a recent survey of the telephone reference services provided by a number of rural libraries in Pennsylvania.

Evaluation of Reference Service

Many attempts at reference evaluation are limited to quantitative descriptions or subjective observations which disregard any measurement of success or failure. For example, some libraries keep statistics on the number and type of reference question asked, while others keep lists of the actual questions. This data in either case can then be analyzed in various ways to yield an accurate picture of

library's particular reference activities. This statistical data can also be utilized for comparisons with published guidelines for reference service such as "A Commitment to Information Services: Developmental Guidelines," which is the national standard adopted by the Reference and Adult Services Division of the American Library Association. Of necessity, these guidelines are designed as general standards which can be applied to all types and sizes of libraries. Thus they are most beneficial when employed as tools for providing an assessment of a specific library's strengths and weaknesses. Evaluations of these types fulfill the profession's need for information about the reference process; however, they are of little value in developing an effective model for the measurement of reference service.

Lancaster notes, "Real evaluation...entails the identification of successes and failures and the analysis of reasons for failure."¹ Various alternatives have been employed in the attempt to attain this goal. One such alternative is the determination of user satisfaction, where library users are asked to give their opinions of the reference services they have received. There is, however, a fundamental flaw in this approach. For several reasons, users tend to overrate the services. A number of studies conducted in this manner concluded that an overwhelming majority of users felt that their questions were answered satisfactorily, and in other studies, reference services were judged to be good or excellent by most respondents. So many favorable responses can only lead researchers to surmise that some bias was

present and that the results do not represent a realistic portrayal of user satisfaction.²

Another approach to measuring reference quality is to consult the reference staff. Staff members maintain a log of the questions asked, the answers given, and their own assessment of the users' satisfaction. Like user surveys, studies of this type have reported success rates of over ninety percent in most cases.³ Since it is not always clear how the questions were recorded, comparisons or conclusions cannot be reliably drawn. In addition, it may be unrealistic to assume that the library staff members can accurately assess the users' satisfaction levels. As Childers points out, "the fact that the recorders of the unanswered questions are usually the very people responsible for assessing them casts doubt on the objectivity of that measure."⁴

A less difficult approach to the analysis of reference accuracy is the obtrusive test. Unlike the preceding methods, it allows the assessment to be performed outside the normal operating atmosphere of the reference department, thus permitting a greater degree of control. Generally, this kind of test takes the form of a list of typical reference questions submitted to the reference staff. Staff members are usually requested to record their answers and the reference source(s) they consulted for each question. This method is especially beneficial as a tool for evaluating the performance of the reference staff or for evaluating the adequacy of the reference collection. There are, however, some very serious limitations to this type of test, "the most

obvious being that the subject of the evaluation is completely aware of the test situation. When he knows he is being observed and evaluated he may not behave as he would under 'normal' working conditions; an inevitable 'Hawthorne effect' is created."⁵

To avoid many of the problems encountered with the approaches previously discussed, Terence Crowley devised and implemented a technique for unobtrusive evaluation.⁶ "Ideally, it would be preferable to administer a controlled test, with the subject unaware that he is being studied. Such a test is likely to be more satisfactory in many ways than an obtrusive test, because it could measure the performance of the reference librarian under actual working conditions rather than under the artificial conditions of an obtrusive study."⁷

For the sake of convenience, most unobtrusive tests are administered via the telephone, so the anonymity of the inquirer can be preserved. Conducting the test over the telephone also permits the inquirer to make an immediate, and probably more accurate, record of the reference transaction. Another obvious advantage is that the test can be administered to a wide geographic area within a fairly short time span, enabling the researcher to sample a sizable number of libraries. It is not essential that hidden reference evaluation be performed only via telephone. Volunteers or proxies can be sent to visit sample libraries to simulate "real" patrons in the reference interface. One possible advantage of personal visits is the opportunity for the

inquirer to observe facial expressions, body language, and actions of the respondent, as well as to monitor the overall performance and attitude of the reference department.

Ever since Crowley first documented his technique of unobtrusive evaluation, critics have assailed the method as unfair and unethical. They contend that observing people without their knowledge is essentially the same as spying, and is an invasion of their privacy. They also fear that data collected in this manner can and will be manipulated and abused to the detriment of library workers. Supporters of this technique, though, point out that workers in the public sector are performing duties which do not fall into the "privacy" sphere. They agree that using the data to single out individual workers is an abusive and improper application of the evaluation process. It is interesting to note, however, that where workshops have been held to demonstrate this method and that when librarians have been afforded the opportunity to put it into practice themselves, there have been changes in attitude about it--from skepticism to enthusiasm.

When unobtrusive methods are applied to reference performance, the results are found to be substantially different from other evaluative approaches. In previous studies, users, when surveyed, indicated a high level of satisfaction and librarians gave themselves a ninety percent success rate in answering patron questions. However, unobtrusive measures have found that the average success rate is only a little better than fifty percent.⁸

Weech summarizes:

The primary trend in reference service evaluation seems to be in the area of unobtrusive testing of reference performance. Whether this trend will continue will probably depend...on the library profession's acceptance of the technique....Its future, as Childers has pointed out, lies in its use not only as a tool for quality control of reference service, but also as a means for gathering data on which nationwide standards for reference service might be based."⁹

Purpose of this Study

A telephone reference study was implemented by this author for the purpose of determining the current state of reference services in rural libraries. At the outset, a keen interest in reference evaluation and simple curiosity about the quality of service provided the initial momentum. Complete lack of documentation about reference evaluation in rural libraries provided further motivation. A review of the literature revealed many studies of reference service, yet none of them were exclusively devoted to small or rural libraries. In fact, many studies purposefully instituted minimum requirements for budget, population, or collection size to exclude those smaller libraries normally found in a random sampling. The final spark, however, was provided in an article written by Thomas Childers. In it he states, "There is indication that stronger libraries perform better on reference tests than smaller libraries."¹⁰ He goes on to offer several possible reasons for this tendency, which appear to be plausible deductions. However, since there have been no documented evaluations of rural reference services

using the unobtrusive method, it would seem to be a somewhat premature conclusion. Even if Childers' suspicions are accurate, a study designed to measure rural libraries could certainly shed some light on the disparity in reference service quality between large and small libraries.

In this vein, an unobtrusive study was undertaken to measure the quality of telephone reference service performance in rural libraries. The study was intended to primarily elicit quantitative data that would yield the percentage of correctly answered questions, as well as other variable which will be more fully discussed later in this report. It was also hoped that some insights could be gained by the researcher into qualitative aspects of the reference transaction, such as the helpfulness of the respondents, the attitude of the library staff, telephone etiquette, and the overall impression made upon the "would-be" patron. The test was administered over a ten-day period in March 1985, and all of the telephone calls were placed by this author. Because the time span of the study was relatively short, only five test questions were included and the sample size was limited to twenty-three libraries within a four county area of Pennsylvania. In view of these limitations, the results of this study were not expected to be conclusive evidence. In stead, they should be regarded as preliminary findings upon which future research studies can be built.

Telephone Reference Service and the Rural Library

For purposes of this report, telephone reference service

is meant to include all telephone calls that a library receives from its patrons. These calls may be simply requests for directions or library hours, or perhaps they will be requests for reader services which require checking the card catalog or offering interlibrary loan services. Other telephone calls may follow the line of more formalized reference, such as fact-type or short answer questions. Still others may necessitate a reference interview requiring question negotiation skills.

Regardless of the level of reference service executed, every telephone call plays an equally important role in the library. "In a world where fast service is expected and demanded...the telephone has become another critical library tool. Many people greet the library for the first time by using the telephone. In many cases, the library's first chance to 'win friends and influence people' comes when the telephone rings."¹¹

In the rural setting the telephone's critical role is intensified by the library's geographical isolation from patrons and large libraries. According to a nationwide survey performed in 1981 by the Center for the Study of Rural Librarianship, the average "maximum traveling distance" for rural patrons to reach a library was fourteen miles. The average distance from a rural library to the closest city with a population over 25,000 was forty miles. This study also found, not surprisingly, that 19.2% of the reference questions asked in the average rural library were received via the telephone.¹² These statistics serve to clearly

illustrate the significance of telephone communications in the rural setting.

Related Research

The earliest documented unobtrusive test of reference was performed by Terence Crowley in 1967-68 and is generally regarded as the seminal study utilizing this methodology.¹³ Eight test questions were posed, either in-person or via the telephone, to twelve medium-sized public libraries in New Jersey. The study was designed to test the hypothesis that "libraries with high expenditures and high per capita support will answer a larger proportion of information questions than will libraries with low expenditures and low per capita support."¹⁴ A total of 120 questions were asked, resulting in sixty-five correct responses (54%). Statistical analysis of the results, however, failed to find any significant difference in the proportions of correct and incorrect answers between the two groups--high expenditure libraries versus low expenditure libraries. Despite the lack of conclusive evidence in support of his hypothesis, Crowley's study did produce several salient contributions. The low success rate of only fifty-four percent led him to conclude that libraries were unknowingly dispensing outdated or incorrect information and that they were especially deficient in the area of current awareness. The greatest impact for future research, though, was the establishment of a new technique for the measurement of reference service. Crowley's unobtrusive method proved to be an effective,

inexpensive, and realistic way to obtain data on the performance of information service.

In a 1969 study of the Chicago Public Library, Lowell Martin applied Crowley's techniques by using "anonymous shoppers" to pose a variety of questions. The results were similar to the Crowley study in that the primary area of deficiency was current awareness questions. This led Martin to call for a well-developed mechanism which would fairly evaluate reference service.¹⁵

Another pioneer in the field of unobtrusive reference evaluation, Thomas Childers, conducted a prominent study of twenty-five New Jersey public libraries in 1970.¹⁶ Unlike the Crowley study, which sought to correlate expenditures and the quality of reference information, Childers' purpose was to measure telephone reference service "and then to relate it to some of the conventional measures of libraries (i.e. descriptive statistics), in order to judge the value of those conventional library measures in predicting the quality of the service."¹⁷ To this end, Childers collected data for forty-seven separate, conventional library measurements in an effort to uncover a relationship between any of these independent variables and the correctness of a library's responses to a list of twenty-six test questions.

In contrast to the Crowley study, Childers developed his set of twenty-six factual questions in an attempt to assure variety rather than to emphasize a specific area of questioning, such as current awareness. To do this, he adopted a classification scheme included in a 1948 study by Van Hoesen,

which places fact-type questions into one or more of the following categories:

1. Meaning type,
2. Numerical or statistical type,
3. Historical type,
4. Exact wording type,
5. Proper names,
6. Addresses of individuals or societies,
7. Books and publishing,
8. Biography (facts about specific individuals whose names are known),
9. Geographical facts,
10. Book reviews,
11. Illustrations.¹⁸

Perhaps the most innovative contribution made by Childers in this study was his development of a scale of correctness with which to judge the responses. Although he tried to design questions that required short, factual answers, Childers recognized that any judgement of correctness automatically introduces some degree of subjectivity. Therefore, a scale was devised that would diminish the amount of subjectivity that unavoidably seeps into the judgement process. All responses were judged according to the following code:

C = The final answer is wholly correct.

P+= (a) The correct answer is included in the response but incorrect information directly related follows or immediately precedes the answer...

(b) The correct answer is given, but is presented in such a way that an inquirer would likely be uncertain that he had gotten the correct answer...

P-= The correct answer is not given, but the response does indicate a substantive step toward the correct answer; that is, part of the correct answer is given...

N = (a) The answer given is wholly incorrect, or

(b) No answer given, but there was some consultation with printed sources or other persons on the part of the respondent...

R = There was no attempt to answer the question correctly. That is, the respondent, without leaving the phone to consult a printed source or another person, indicated that he would not be able to answer the question.¹⁹

By manipulating the various codes using weighted values, Childers came up with five different scales. For each scale different point values were assigned to the correctness codes, so several combinations could be analyzed and comparisons drawn. (See Table 1)

As a result of his experimentation, Childers concluded that a community's per capita wealth does not significantly

Table 1

Childers' Five Scales for Measuring Correctness of Responses

Point Values

	3	2	1	0
Scale A			(C) or (P+)	(P-) or (N) or (R)
Scale B	(C)	(P+)	(P-)	(N) or (R)
Scale C		(C)	(P+) or (P-)	(N) or (R)
Scale D			(C) or (P+)	(P-) or (N) (Remove all "R" responses)
Scale E			(C) or (P+) or (P-) or (N)	(R)

The results in terms of correct responses given, are summarized for Scales A and D. The fundamental difference between these two measures is found in the elimination of all "R" coded responses. Thus, Scale A measures the percentage correct for all responses whereas Scale D measures only those questions that libraries attempted to answer. Surprisingly, Childers' results were quite similar to Crowley's earlier study.

Scale A--54.7% correct answers out of 632 responses. However, when "refusals to answer" are discarded;

Scale D--63.8% correct answers out of 542 attempts.

influence the quality of reference service. However, there was a statistically significant difference in the information service provided when libraries were ranked according to total expenditures. The quality of reference service was also found to be related "to a combination of the number of professionals and the size of the collection."²⁰

Childers also made some recommendations for future applications of unobtrusive evaluation techniques. To avoid detection, the sample should encompass a wide geographic area, or different test questions should be posed in each sample library. He also observed that posing a number of questions in a concentrated time span could lead small or medium-sized libraries to become suspicious. Therefore, he advocated utilizing proxy inquirers who live in the communities serviced by each sample library to circumvent the necessity of maintaining anonymity when placing long distance calls or when responding to a library's request for a phone number to return the proxy's call. Recognizing the limitations of this approach, he suggested the alternative of extending the time span of the experiment to allow for the application of one question per month.

In a 1972 survey of public libraries in Summit County, Ohio, reference services were evaluated according to the correctness of the responses and the general attitudes displayed by library respondents. The findings indicated that only thirty percent of the responses were correct, but the respondents were rated positively by an overwhelming margin.²¹

Another Ohio experiment conducted in 1972 posed two factual questions to a number of academic and public libraries. All questions were asked via the telephone and used unobtrusive techniques. The study found that academic libraries correctly answered the questions one hundred percent of the time, whereas the public libraries had an eighty-six percent rate of correct responses. Based on a limited amount of data, no conclusions could be drawn by the researchers.²²

An evaluation of the telephone reference services provided by the University of Minnesota libraries was designed to determine the accuracy of responses, the amount of question negotiation performed, and the attitude of the reference librarian. Sixty percent of the questions were answered correctly, and twenty-five percent were answered incorrectly--leaving fifteen percent for which no answer could be given. The attitude of the librarian was judged "pleasant" in ninety-five percent of the responses.²³

In 1974-75, Peat, Marwick, Mitchell and Company conducted a three-part survey of twenty California public libraries. Libraries were evaluated on the basis of their responses to both simple and complex questions. The results were disappointing for several reasons. Staff attitudes and competency levels were found to be poor, and only fifteen percent of the libraries performed adequately in all three phases of the test. These poor performance levels were considered to directly affect patron utilization of the service.²⁴

The first major evaluation of academic reference/

information services was conducted in 1977-79 by Marcia Myers.²⁵ Using the Crowley and Childers studies as models, she employed proxies to ask fourteen fact-type questions via telephone in sixty academic libraries located in the southeastern United States. She also developed a sixty question survey which was mailed to each sample library. (94.9% were completed and returned.) This questionnaire enabled her to compile data for seventy independent variables. Those independent variables were then analyzed and tested for their relationships to the response variable (obtained from the correct responses to the fourteen test questions). In terms of the percentage of correct responses received, Myers' findings were similar to most of the preceding unobtrusive tests. Only 50.4% of the responses were considered correct and call backs were required in fifty-five percent of all observations.

During this same time period, Childers conducted a massive analysis of reference performance in the Suffolk Cooperative Library System on Long Island, Suffolk County, New York.²⁶ Over a period of six months, fifty-seven libraries were asked twenty questions each. Proxies were hired to telephone or visit the libraries, appearing to be bona fide clients with real questions. Most of the queries were fact-type questions requiring simple, short answers.

A new dimension was added when Childers included three questions designed to extract information about negotiation skills. These questions, called "escalators," were composed of sub-questions which progressed in steps from broad to

specific. Childers gives this example:

Step 1: Where can I find your books on poetry?

Step 2: I'm looking for something that describes
different kinds of poetry.

Step 3: Could you give me a definition of concrete
poetry?

Another innovation was the gathering of data about which non-library agencies proxies were referred to.

The results, stated briefly, follow. An actual answer was given only fifty-six percent of the time. When an answer was given, it was judged "correct" or "mostly correct" eighty-four percent of the time. When all queries were scored on a scale of correct, mostly correct, and wrong, the picture changed drastically. "About half the time the libraries delivered the correct answer to the query, and about half the time they did not."²⁷ For the three escalator questions posed, in sixty-seven percent of the cases the respondents made no effort to probe for sub-queries. Conversely, thirteen percent of the responses were partially negotiated, and twenty percent were negotiated to the final query.

The most recent unobtrusive study of reference service found by this author was conducted in 1980 by Jassim Jirjees. Five four-year colleges located in the northeastern United States were chosen for an extensive, in depth case study. From a group of several hundred actual reference questions, thirty-five questions were selected. Care was given to ensure a middle range of difficulty, and Van Hoesen's eleven question categories were utilized to provide

for maximum variety. Data were collected on thirteen independent variables that were identified in previous research studies as affecting the quality of reference service. An analysis of this data was performed to prove or disprove the hypothesis that "there is a positive correlation between reference performance in academic libraries and each of the identified independent variables."²⁸

Out of 175 observations, 160 responses were received. The remaining fifteen observations were referrals to another resource or outright refusals to answer. In keeping with the results of other unobtrusive research, correct responses were received 56.6% of the time. Thirty-six percent of the observations required the proxy to call back, and about five percent required two call backs. The average response time per observation was 7.2 minutes, and sources were given in only forty-four percent of the observations. Respondents' attitudes were rated positively 61.7% of the time and negatively 38.3% of the time. Sixty-five percent of the respondents were female, and thirty-five percent were male. The results of statistical tests indicated that there was no significant association between any of the thirteen variables and the library's performance score.

Methodology

The basic approach for this experiment was to follow the unobtrusive research methods established by Crowley and Childers in an effort to determine a performance score for rural telephone reference services. No attempt was made

to relate the library performance scores to any other statistical variables, such as expenditures or educational levels of the staff. Several other studies experimented in this vein, and as discussed earlier, none were able to conclusively state that a significant correlation existed.

Sample Libraries.

Twenty-one eligible libraries were selected from the Pennsylvania Public Libraries Directory--1983, which was the most recent edition available at the time. To satisfy the profile requirements, each library had to be a rural library geographically situated within a four-county area of central Pennsylvania. For reasons of confidentiality, the county names and locations of the sample libraries will not be revealed. This small geographic area was chosen with complete awareness of Childers' admonitions regarding the possibility of compromising the unobtrusive nature of the research by studying a too densely populated sample.²⁹ Extra care was taken, however, to avoid detection, so that the most expedient sample size could be studied.

There are several definitions of the word "rural," each one having its own unique implications for researchers in this area. Most dictionaries define "rural" as "pertaining to or relating to the country, country people, farming or agriculture." Obviously, a more specific measure is needed for research purposes. The U. S. Bureau of the Census maintains that the legal definition of rural includes only those communities with 2,500 or fewer residents. However, if

there is a Standard Metropolitan Statistical Area (SMSA) within a county population, the entire county is considered by the Census Bureau to be urban.³⁰ Neither geographic isolation nor the typical agricultural ambience serves to adequately define the rural community. To strike a balance between conflicting definitions, the Center for the Study of Rural Librarianship (CSRL) in Clarion, Pennsylvania "uses a definition of 25,000 people and the criterion that a library must be an independent unit as opposed to a library in a branch system as a means of targeting [rural] libraries for study."³¹ With one exception, the CSRL definition of rural was followed for this experiment. Branch libraries were not excluded from the sample. (Data can easily be compiled for a subset that does exclude these branch libraries.)

In addition to the twenty-one rural libraries, two "test libraries" with populations over 25,000 were chosen from the same geographic area. These "test libraries" were used to pretest the questions to eliminate overly difficult or tricky questions. The reader is also cautioned to keep in mind that the population statistics referred to herein are from the 1980 U. S. Census and bear no similarity to the populations served by these sample libraries. On the average, the rural library has a service area approximately three-and-one-half times its census population.³² Two rural libraries were omitted from the sample, because they did not have an accessible telephone. This, of course, is an unfortunate (but all-too-real) factor to consider when attempting to observe rural reference services. The final number of

libraries studied, then, included nineteen rural libraries and two non-rural "test" libraries.

Test Questions.

Particular attention was paid to the formulation of questions that struck a fair balance between simplicity and difficulty. It was not the purpose of this evaluation to "stump the librarian" but rather to pose queries that would be accepted as real questions being asked by bona fide patrons. According to a recent survey of telephone reference questions, ninety-one percent of the questions could be answered from the librarian's personal knowledge, from the card catalog, or from the ready reference collection.³³ Only nine percent of the calls required the use of the general reference or circulating collections. This corroborates the findings of other studies that suggest that telephone reference patrons are more likely to need answers to short answer or fact-type questions than to other, more in depth questions. Therefore, the questions chosen for this research all required short answers or factual information. Since only five questions were developed, it was not necessary to employ sophisticated techniques to ensure maximum variety. The queries were worded in the following manner:

1. When did China explode its first nuclear device?
2. A friend recommended that I read a book about South Africa, but I can't remember the title. I think the author's name is Paton. Can you help me?
3. What is a nautical mile?
4. Is it against the law to burn the United States flag?
5. Can you tell me the address for the Wall Street Journal?

It was not necessary to hire proxies to make any of the telephone calls, because all observations were made by this author. A set of basic instructions were developed and followed, however, so consistency could be maintained throughout the experiment. The most important rule was to appear to be a bona fide patron with a legitimate question. A rationale for asking each question was included to help make the inquirer be more relaxed and natural when posing the queries. All of the questions were asked exactly as worded, with neutral comments and/or the rationale interjected whenever it felt natural to do so. When possible, the inquirer would wait on the line while the respondent searched for the answer. If the respondent offered to take the inquirer's name and telephone number to call her back when the correct answer was located, the inquirer indicated that it would be more convenient for her to call the library back. Several excuses were used, depending upon the time of day and other circumstances. For example, for calls made during normal business hours it was very natural to say, "I'm at work. Can I call

you later during my lunch hour?" At other times excuses such as, "I'm taking the children to (or from) school," or "I'm running to a meeting" were offered. It was imperative that these excuses be offered in a believable manner so as not to arouse suspicion. Since many of the calls were long distance, giving the librarian a phone number outside the community would have immediately compromised the hidden nature of the evaluation. When the respondent asked if the call were long distance, the inquirer would say that the problem was with a new type of wireless telephone she was calling from. Because many libraries have a policy against answering questions for quiz games, puzzles, or homework, these types of rationale were avoided.

A "Query Response Record" was developed specifically for this experiment and was completed for each observation. (See Appendix A) The date of the initial telephone query was indicated, along with the library code, the telephone number and the question to be asked. At some point during the first call to each library, the inquirer asked for the library's weekly hours. With this information, it was possible to vary the calling times, so no library was called at the same time of day for all five queries. Search time, in minutes, was recorded on the observation form. The beginning time was recorded after the question had been asked and the respondent had made a comment indicating that a search was being started, such as, "Ok, hold on a minute." The ending time was recorded as soon as the respondent returned with an answer or another question. Intermediate question

negotiation was not included in the "time" category. If the respondent requested a "call back," the date and search time were recorded for each call.

Responses were recorded as exactly as possible. If the library staff member made a referral to a non-library source, the agency name was recorded on the form. If the library refused to answer, an indication was made and the inquirer recorded the reasons, if they were known. However, the inquirer never asked "Why?" if a library refused to answer. The sex of the respondent was recorded, if known. This determination was made about the respondent who provided the final answer or response. If the source of the answer was volunteered, the title was recorded as it was given. If the inquirer did not hear the full name, or if the respondent gave only part of the title, that partial information was recorded without further probing. Since most patrons would not ordinarily request a source clarification, it was felt that any probing by the inquirer would only have aroused unwanted suspicions. Finally, any additional comments regarding the respondent's attitude or any special circumstances were indicated at the bottom of the "Query Response Record."

Results

Each of the five test questions will be discussed individually, followed by comments and tables illustrating the responses as a group. In Appendices C and D are displayed Childers' five "correctness scales" calculated for each question and for each library. Unless otherwise indicated,

the accuracy scores presented below were calculated using Scale A. (See Appendix B) Table 2 shows the number of responses and the percentages of correct answers according to Scales A and D. The only difference between these two measurements is that for Scale D all of the refusals to answer (R) are eliminated. This makes the number of "attempts" to answer less than the number of total responses. Since the number of correct answers remains unchanged, Scale D often reflects a better performance rating.

Table 2
Correct Answers--By Question

Question Number	Scale A		Correct Answers	Scale D	
	Percent Correct	Number of Responses		Number of Attempts	Percent Correct
1	64.7%.....	17	11	15.....	73.3%
2	75.0%.....	16	12	16.....	75.0%
3	100.0%.....	16	16	16.....	100.0%
4	92.9%.....	14	13	13.....	100.0%
5	75.0%.....	16	12	16.....	75.0%
Total	81.0%.....	79	64	76.....	84.2%

The results discussed in this report, either by question or as a group, do not include the two test libraries. The reason for including a test group was to ascertain that all the questions could be understood and answered correctly. Where difficulties arose, modifications were made in the question or in its wording. This explains the very high performance ratings for the test libraries as shown in Appendix

C. If these extraordinarily high scores had been included with the sample findings, a definite overestimate of rural reference performance would have resulted.

It was mentioned earlier that branch libraries were included in the sample set if they met the eligibility requirements of location and population. Four branches, all within the same library system, fell into this category. Since the purpose of this study was to measure rural libraries, it was decided that the distinction of being branch libraries within a larger system was outweighed by the common characteristics of their rural status. The branch library status did not present any foreseeable difficulties until it was discovered that three of the four rural branches were geographically located within a very small area. The chances were very high that the library staff members in these three closely knit communities would at some time discuss the reference questions they were suddenly beginning to receive. Also, it was entirely possible that some of the library staff members were working at more than one of the rural branches. This would have led to immediate detection; something that could not be tolerated if the experiment was to reach a successful conclusion. Therefore, steps were taken to reduce the number of questions asked at these branches. Two observations were made at two of the branches, and one question was posed at each of the remaining two libraries-- a total of six observations.

Question 1: When did China explode
its first nuclear device?

Answer: 1964.

Seventeen libraries were asked this question, and eleven of them gave the correct answer (64.7%). There were four incorrect answers and two refusals to answer. One library was "too busy," and the other one told the inquirer to "come into the library and maybe we could find it in Time or Newsweek." Of the four incorrect responses, three required call backs. Only two of the eleven correct responses did not require a call back. One library required two call backs. So, of the fifteen libraries called for an answer, twelve (80%) requested that the inquirer call back.

This question seemed to be the most troublesome one in the test. Although it was a very straightforward, fact-type query, most respondents reacted negatively when the query was initially posed. For seven of the eleven correct responses, the following comments illustrate their attitudes:

1. I'll need some time to check
on this.
2. This may take me a while.
3. Can you call back? Give me
at least an hour and a half.
4. I can't answer that! I'll
have to look it up.
5. I'm working on something else
right now.

Two others were nearly hostile. Their question negotiations

were more like interrogations. Both asked if the information was needed for an assignment. When the inquirer replied that she was not a student, both respondents asked why she needed it. They also tried to get the inquirer to provide more information, such as what type of nuclear device or approximate date, decade or year. Of these two libraries, one responded correctly and the other did not. The library that responded incorrectly was more interested in finding out the inquirer's name and where she lived than in searching for an answer. When it became evident that a name, address, and phone number would not be forthcoming, the respondent replied that "only the U. S. and Russia have the bomb. China has not exploded one yet!" In contrast, when the other library was called back, the same respondent who had conducted the earlier interrogation was very pleasant and helpful. In fact, this observation yielded the most complete, informative response for Question 1. This respondent also indicated that the question appeared at first to be much harder than it really was. This comment led the author to conclude that the negative attitudes and the large number of call backs were probably caused by the respondents' initial fears of not knowing where to look for an answer. Unfortunately, this panic displayed itself in a negative manner that would have been discouraging and unpleasant to a real patron.

The correct answer to this question can be found in the 1985 World Almanac, or in older editions, in the entry for "China." The source was only volunteered in six of the

fifteen attempts to find the answer. Two consulted an almanac, two used an encyclopedia, and one went to the general reference collection to find the answer in the 1985 Countries of the World book. The fourth search was a multi-step process. The respondent first checked an almanac but could not find anything; then she used the card catalog to find books about China in the general collection. Her correct answer was located in a book by Seymour Topping called Journey between Two Chinas.

The minimum acceptable answer had to include the year 1964. Nine of the eleven correct answers (81.8%) provided more than just the year. Five of these also included the month (October 1964) or the exact date (October 15, 1964) or the place (Lop Nor). The other four provided two answers:

- a. 1964--detonated first atomic bomb,
- b. 1967--detonated first hydrogen bomb.

This question was added to the test because it closely paralleled a question included in Marcia Myers' study of academic libraries. Question 8 in the Myers study reads, "When did China orbit its first satellite?"³⁴ The answer to this question is also found in the World Almanac, in the same paragraph as Question 1 of this report. Since both questions are similar and since both answers are found in the same paragraph, perhaps a comparison can be made between the academic library responses and the rural library responses. In the academic study, forty libraries were

polled, and thirty-two (87.5%) responded correctly. Thirty of the thirty-five correct responses required call backs (85.7%). In comparison, rural libraries correctly answered eleven out of seventeen observations (67.5%) and required call backs in 80% of the cases. It should also be noted that the rural libraries performed their worst on Question 1 in the five question test. (See Table 2) In any case, one question cannot provide conclusive evidence for determining the superiority of one or the other type of library. This comparison was merely presented for informative purposes.

Question 2: A friend recommended
that I read a book about South
Africa, but I can't remember
the title. I think the author's
name is Paton. Can you help
me?

Answer: Cry the Beloved Country
by Alan Paton.

This question did not appear to be tricky until it was asked in the two test libraries. At first, it was decided not to offer the spelling of the author's last name, even if it was requested. However, when this was done in the first test library, the respondent could not find the answer using Books in Print or the card catalog. Of course, the correct spelling was never checked. Only "Patton" was checked, as in General George Patton. When Books in Print is checked, using the correct spelling, one can readily find several

entries for Alan Paton, including the one desired. As a result of this pre-test, the inquirer provided the spelling of the author's last name, but only when it was requested. Not volunteering the spelling of the name was done in order to observe the respondent's basic question negotiation skills.

Of the sixteen queries, twelve libraries provided the correct answer (75%) and four (25%) provided nothing. Of the four negative responses, two requested the spelling of the author's last name, and two did not. Three of the negative responses checked only the card catalog, and none of them offered to search elsewhere. It appears that these three respondents made the fatal assumption that the inquirer wanted to borrow the book and that she was, therefore, asking a holdings question. The fourth respondent understood the intent of the question and started her search with Books in Print. Unfortunately, she did not probe for the spelling of the name, so she was unsuccessful. She also went to the subject card catalog and looked under "South Africa," which would have yielded the correct answer if the book had been owned and if the subject entries had been included for fiction.

Of the twelve correct responses, six needed to check on the spelling of the author's last name. Three of the respondents answered immediately based on their personal knowledge. In addition, six other respondents volunteered their sources (75%). Four of them checked the card catalog, and one successfully searched Books in Print. The remaining correct response resulted from a "creative" search process,

often practiced out of necessity in the rural library. After requesting the spelling, the library staff member checked the card catalog and found a title by Alan Paton called Ah, But Your Land Is Beautiful. She pulled the book from the shelf and brought it back to the phone to ask if it were the title in question. When the inquirer responded negatively, she took a further step in the search process by consulting the book in hand for other works by the same author. This step resulted in a correct answer.

There were no refusals to answer and no referrals to other sources or agencies. Several libraries offered to get the book on interlibrary loan if it were not owned. All of the respondents were pleasant and helpful. None of them seemed to be overwhelmed by the inquirer's lack of information.

Question 3: What is a nautical
mile?

Answer: Any of these--1.852 kilometers
or 6076 or 6076.1 feet for
the International nautical
mile. Also accepted--6080
or 6080.2 feet for the U. S.
nautical mile.

This question corresponds closely with a question asked by Childers in his first study of public library reference performance, "How much does an assay ton weigh?"³⁵ Both are equivalency questions that require numerical answers.

In Childers' study, twenty-five libraries were queried and twenty-three responded correctly (92%). On the nautical mile query, sixteen rural libraries were questioned and all of them responded with a correct answer (100%). In this instance, general public and rural libraries performed equally well.

Of the sixteen observations, eleven were answered correctly on the first telephone call, and four required one call back (25%). Nine respondents volunteered their sources (56.2%). One respondent used the Information Please Almanac, four people consulted dictionaries, three people used encyclopedias, and one respondent searched the general reference collection to find the answer in a book entitled For Good Measure, an international book of standards and measurements.

Very little interviewing was performed for this question. Only five (31%) of the respondents asked whether a definition or an equivalent was desired. Without asking one way or the other, seven (43.8%) provided a definition plus the numerical equivalent; the remaining four (25.2%) gave only the numerical equivalent and did not offer additional information.

Even though one hundred percent of the responses were correct and only twenty-five percent required call backs, the inquirer felt that this question was approached by the respondents with some trepidation (although not to the same degree as Question 1). One respondent asked to be called back, because she would need at least an hour to find the answer. Another respondent panicked when she couldn't find

anything in the encyclopedia and asked the inquirer if she had an encyclopedia of her own to look it up in. When the inquirer called back thirty minutes later (long enough for the respondent to calm down), the answer had been located in the same encyclopedia under knots instead of nautical mile. Despite the trepidation, all the respondents were very pleasant and helpful.

Question 4: Is it against the law to burn the United States flag?

Answer: Quoted from the 1985 World Almanac, pages 455-56: "A 1968 federal law provided penalties of up to a year's imprisonment or a \$1,000 fine or both for publicly burning or otherwise desecrating any flag of the U. S. ... The flag when it is in (poor, worn) condition that it is no longer a fitting emblem for display should be destroyed in a dignified way, preferably by burning in private."

This is an example of a short answer, ready-reference question. Fourteen libraries were called, and thirteen responded with a correct answer (92.9%). One library did not attempt to answer but instead made a referral to the

local "post office or a federal agency." To be scored as correct, a response simply had to indicate that it is permissible to burn the flag. Twelve of the thirteen respondents also qualified their answers by adding one or more conditions, such as "when the flag is worn or being disposed of," "burn it privately," or "do not throw it in the trash." Only one respondent answered, "No, it's not." This answer left the inquirer in a confused state, but when it was sorted out the response was coded P+(b) according to Childers' scale (Appendix B) and counted as a correct response. Six libraries (42.9%) required one or more call backs; one of these required two call backs.

Seven libraries (50%) consulted a printed source, but only six volunteered the name of the source. Two respondents read a passage directly from the World Almanac, but only one of them included the part describing the 1968 federal law. Two others consulted an encyclopedia. One respondent quoted from a 1975 Veteran's Administration publication, and yet another read passages from the Marines Book and the Boy Scout Handbook.

What is disturbing about the responses to this question is the number of answers that were given without checking any source. For most of the other questions, it was necessary to consult some source to get any answer, correct or not. Although the name of the source was not always volunteered, most often one was searched. Therefore, for the other four questions, the "source given" data served as a measurement of how often the source was volunteered by the respondent.

For this question, "source" data is a measure of how often a source was consulted. Of the thirteen correct responses, six respondents (46.1%) provided information from their personal knowledge without clarification from another source. It is interesting to note that all six of these responses were presented in such a way that the inquirer was uncertain whether she had received a correct answer or not. (All were coded P+(b) on Childers' scale in Appendix B.)

Some of the unsubstantiated answers were very entertaining, however. One respondent clarified her response by saying her husband was retired from the military and burning was how he disposed of the flag. Another respondent called a neighboring rural library (which was also part of this experiment, but had not yet been contacted) to obtain an answer. When the inquirer called back, the respondent indicated that she had contacted another library "and there happened to be a man there who had studied the problem and he said burning is the only way to dispose of the flag. You can't use it for a rag or throw it in the garbage, or....He sounded very authoritative, but I don't know his credentials." A respondent from one of the test libraries read a passage from the World Book Encyclopedia and then added, "If you're really in doubt, call the VFW or American Legion and ask them to take it and destroy it for you. That's what I did. When in doubt, pass the buck!"

Question 5: Can you tell me the address for the Wall Street Journal?

Answer: There are two acceptable answers: the corporate headquarters at 22 Cortlandt Street, New York, NY 10007, or the subscription address at 200 Burnett Road, Chicoppee, MA 01021.

The rationale for this question was that the inquirer wanted to purchase a subscription to the Wall Street Journal; therefore, the Chicoppee, Massachusetts address was preferred. However, New York was also considered correct, because the would-be patron could request a subscription at that address, too.

From sixteen queries, twelve answers (75%) were scored as correct. Of the four incorrect responses, two libraries could not supply an answer, one gave an incorrect address, and one suggested a information number to call for toll-free directory assistance. Two respondents (12.5%) volunteered the source of their answers. Only three libraries (18.8%) requested call backs; one of these required two call backs. For all of the observations, the respondents were very helpful and eager to please.

Table 3 shows the breakdown by group for several of the performance measures discussed in the question-by-question analysis. When comparisons are made between the test libraries

and the rural library sample, the rural libraries are found to be evenly matched with the larger libraries. It is also interesting to note that the overall correctness score of 81% (Table 4) was an exceptionally excellent performance rating.

Table 3
Group Performance Measures

	Rural Sample		Test Libraries	
	Number	Percent	Number	Percent
Observations	79	100.0%	9	100.0%
Source Given	32	40.5%	4	44.4%
<hr/>				
Answer--First Call				
Response Time				
0-2 Minutes	24	30.4%	4	44.4%
3-4 Minutes	16	20.3%	2	22.1%
5-7 Minutes	<u>8</u>	<u>10.1%</u>	<u>1</u>	<u>11.1%</u>
Total	48	60.8%	7	77.8%
<hr/>				
Call Back	22	27.8%	2	22.2%
2nd Call Back	3	3.8%	0	0.0%
Referral	4	5.1%	0	0.0%
Refusal	2	2.5%	0	0.0%
<hr/>				
Sex of Respondents				
Female	75	94.9%	8	88.9%
Male	4	5.1%	1	11.1%

The top portion of Table 4 displays the responses and percentages of correct answers broken down by population. All three of the population ranges scored well above average, with the middle range libraries (2,501-10,000) performing slightly better than libraries in the smaller and larger

rural communities. Interestingly, when branch libraries were excluded from the rural sample, the overall percentage of correct answers rose by 1.2 percent. Although the sample size may not be statistically valid, it is tempting to conclude that branch libraries, even with the benefits provided by their larger system affiliations, do not perform better than their independent counterparts.

Table 4

Correct Answers--By Population
(Using Childers' Scale A)

Population Range	Number of Libraries	Number of Responses	Correct Answers	Percent Correct
0 - 2,500	7	27	19	70.4%
2,501 - 10,000	10	42	38	90.5%
10,001 - 25,000	<u>2</u>	<u>10</u>	<u>7</u>	<u>70.0%</u>
Total	19	79	64	81.0%

Excluding Branch Libraries

0 - 2,500	4	23	17	73.9%
2,501 - 10,000	9	40	36	90.0%
10,000 - 25,000	<u>2</u>	<u>10</u>	<u>7</u>	<u>70.0%</u>
Total	15	73	60	82.2%

Conclusion

Throughout the construction of this study and the subsequent reporting, several questions and inconsistencies of philosophy have been plaguing this author. The first of these is the question of test complexity and its relationship to the percentage of correct answers given. It is not difficult to perceive that as the test questions get harder, the number

of correct answers decreases. There is a direct relationship between the two.

In his study of academic libraries, Jirjees found his results, 56.6% correct answers, to be consistent with the findings of other unobtrusive research studies. In other words, the libraries that had been evaluated to that date were able to answer correctly slightly more than half of the questions posed. The dilemma, as this author perceives it, arises when Jirjees goes on to conclude, "Additionally, these results provide evidence for the validity of the findings of the performance test in this study."³⁶ In effect, he is stating that his results are valid because they are consistent with the previous studies. This mode of thinking makes the assumption that library performance is a static condition that will never improve or worsen. What he ends up measuring, then, is not library performance, but the level of complexity of the test questions. Therefore, the results become as much a reflection of the difficulty of the questions as they are a reflection of the quality of reference performance.

This leads to another problem. As long as the test questions themselves differ from one study to the next, changes in reference performance cannot be reliably measured. To measure any real changes, a universally accepted set of test questions must be adopted. But then, can we or should we expect a small public library to be able to answer the same questions as a medium-sized or large public library? Should academic libraries be expected to compete with special and research

libraries? What is a realistic expectation for each of these libraries? In this study, rural libraries answered eighty-one percent of the questions correctly. That result is exceedingly better than the findings of other unobtrusive studies. In light of the inquiries just posed, does this apparently high performance score reflect a true improvement? Or, were the test questions too easy? In either case, how can we be sure?

If we acknowledge that not all libraries can be expected to answer every question that is posed to them, then the important variable for measuring reference service shifts from the percentage of correct answers to other factors--the attitude of the respondent, telephone etiquette and politeness, quality of referrals, and reasons for refusal to answer. This experiment, like its predecessors, barely touched on these factors.

It is clear that librarians need to address the question, "What business am I in?"³⁷ Perhaps doing so would lend a new direction and purpose to the field of reference evaluation.

Appendix A

QUERY RESPONSE RECORD

QUESTION NO.: _____

LIBRARY: _____

LIB. CODE: _____

QUESTION:

PHONE NO.: _____

DATE: _____

RESPONSE:

TIME - BEGIN:
END:
TOTAL MIN.:

CALL BACK (IF REQUIRED)
DATE:
TIME - BEGIN:
END:
TOTAL MIN.:

REFERRAL MADE: Y / N
WHERE:

REFUSAL TO ANSWER: Y / N
WHY (IF KNOWN):

SOURCE (IF GIVEN):

SEX OF RESPONDENT: MALE _____
FEMALE _____
UNKWN _____

COMMENTS: (RECORD ANY OBSERVATIONS THAT ARE PERTINENT OR UNUSUAL SUCH AS POOR PHONE CONNECTIONS, ATTITUDE OF RESPONDENT, SPECIAL CIRCUMSTANCES, ETC.)

Appendix B

Childers' Scales of Correctness

- C = The final answer is wholly correct.
- P+= (a) The correct answer is included in the response but incorrect information directly related follows or immediately precedes the answer...
(b) The correct answer is given, but is presented in such a way that an inquirer would likely be uncertain that he had gotten the correct answer...
- P-= The correct answer is not given, but the response does indicate a substantive step toward the correct answer; that is, part of the correct answer is given...
- N = (a) The answer given is wholly incorrect, or
(b) No answer given, but there was some consultation with printed sources or other persons on the part of the respondent...
- R = There was no attempt to answer the question correctly. That is, the respondent, without leaving the phone to consult a printed source or another person, indicated that he would not be able to answer the question.

Point Values

	3	2	1	0
Scale A			(C) or (P+)	(P-) or (N) or (R)
Scale B	(C)	(P+)	(P-)	(N) or (R)
Scale C		(C)	(P+) or (P-)	(N) or (R)
Scale D			(C) or (P+)	(P-) or (N) (Remove all "R" responses)
Scale E			(C) or (P+) or (P-) or (N)	(R)

Appendix C

PERCENTAGE OF CORRECT ANSWERS--BY LIBRARY

(Using Childers' Five Correctness Scales)

<u>Library</u>	<u>Number of Observations</u>	<u>Scales</u>				
		<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>
A	5	80%	80%	80%	80%	100%
B	5	100%	87%	80%	100%	100%
C	5	80%	80%	80%	80%	100%
D	5	80%	87%	90%	80%	100%
E	5	100%	100%	100%	100%	100%
F	5	60%	60%	60%	100%	60%
G	5	80%	80%	80%	80%	100%
H	5	80%	80%	80%	80%	100%
I	5	100%	100%	100%	100%	100%
J	5	80%	93%	90%	80%	100%
K	5	60%	53%	50%	75%	80%
L	4	75%	75%	75%	75%	100%
M	5	80%	80%	80%	80%	100%
N	4	75%	75%	75%	75%	100%
O	5	80%	73%	70%	80%	100%
<u>Test Libraries</u>						
R	4	100%	92%	88%	100%	100%
S	5	100%	93%	90%	100%	100%
<u>Branch Libraries (Combined)</u>						
W,X,Y,Z	6	67%	67%	67%	67%	100%

Appendix D

PERCENTAGE OF CORRECT ANSWERS--BY QUESTION
(Using Childers' Five Correctness Scales)

Question Number	Number of Observations	Scales				
		A	B	C	D	E
1	17	64.7%	66.7%	67.6%	73.3%	88.2%
2	16	75.0%	75.0%	75.0%	75.0%	100.0%
3	16	100.0%	97.9%	96.9%	100.0%	100.0%
4	14	92.9%	78.6%	71.4%	100.0%	92.8%
5	16	75.0%	79.1%	81.2%	75.0%	100.0%
<hr/>		<hr/>				
Total	79	81.0%	79.3%	78.5%	84.2%	96.2%
<hr/>		<hr/>				
Total With Test Libraries	88	83.0%	80.7%	79.5%	85.9%	96.6%
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NOTES

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2. Ibid., p. 77.
3. Ibid., p. 79.
4. Thomas Childers, "Managing the Quality of Reference/Information Service," Library Quarterly 42 (1982), pp. 212-217.
5. Lancaster, pp. 83-90.
6. Terence Crowley and Thomas Childers, Information Service in Public Libraries: Two Studies (Metuchen, NJ: Scarecrow Press, 1971), pp. v-vii.
7. Lancaster, p. 90.
8. Terry L. Weech, "Evaluation of Adult Reference Service," Library Trends 22 (January 1974), pp. 328-29.
9. Ibid., p. 331.
10. Thomas Childers, "The Test of Reference," Library Journal 105 (April 15, 1980), p. 928.
11. Linda Stith and Ed Klee, "Your Library's Image--Over the Wire," Kentucky Libraries 47 (Winter 1983), pp. 21-22.
12. Bernard Vavrek, Reference Service in Rural Public Libraries (Clarion, PA: School of Library Science, Center for the Study of Rural Librarianship, Clarion State College, 1982), pp. 6, 13, 17-18.
13. Crowley and Childers, p. 1-71.
14. Ibid., p. 16.
15. Lancaster, p. 99.
16. Crowley and Childers, pp. 73-204.
17. Ibid., p.101.
18. Ibid., p.106.
19. Ibid., pp. 116-117.
20. Ibid., p. 173.

21. Marcia Myers and Jassim M. Jirjees, The Accuracy of Telephone Reference/Information Services in Academic Libraries: Two Studies, (Metuchen, NJ: Scarecrow Press, 1983), p. 163.

22. Ibid., pp. 11, 163-64.

23. Ibid., p. 164. A summary can also be found in Lancaster, pp. 107-8.

24. Ibid., pp. 9-10, 164.

25. Ibid., pp. 1-141.

26. Childers, "The Test of Reference," pp. 924-28.

27. Ibid., p. 926.

28. Myers and Jirjees, p. 196.

29. Crowley and Childers, p. 164.

30. Bernard Vavrek, "Adult Services in Rural America," RQ, Fall 1983, p. 18.

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32. Vavrek, Reference Service in Rural Public Libraries, p. 9.

33. Diane M. Brown, "Telephone Reference Questions: A Characterization by Subject, Answer Format, and Level of Complexity," RQ 24 (Spring 1985), pp. 296, 300.

34. Myers and Jirjees, p. 43.

35. Crowley and Childers, pp. 109, 195.

36. Myers and Jirjees, p. 229.

37. John Naisbitt, Megatrends: Ten New Directions Transforming Our Lives, (New York: Warner Books, c1982, 1984), p. 88.

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