

ED 025 051

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Interaction of Deaf and Hearing in Frederick County, Maryland. Studies from the Bureau of Social Research, Department of Sociology, the Catholic University of America, Number 3.

Catholic Univ. of America, Washington, D.C. Bureau of Social Research.

Spons Agency- Vocational Rehabilitation Administration (DHEW), Washington, D.C.

Pub Date Dec 64

Note- 100p.

EDRS Price MF-\$0.50 HC-\$5.10

Descriptors- *Adjustment (to Environment), *Attitudes, *Aurally Handicapped, Clergymen, Community Attitudes, Community Characteristics, Community Involvement, Deaf, *Exceptional Child Research, Family Life, Group Membership, Health Personnel, Individual Characteristics, Interaction, Intergroup Relations, Interpersonal Relationship, Interviews, Knowledge Level, Research Methodology, Socialization, Social Welfare, Statistical Surveys

In order to study the interaction of the deaf and the hearing, surveys were made in Frederick County, Maryland. Eighty deaf persons were studied by social casework techniques, and 1017 hearing persons were interviewed. Specialized data were obtained from interviews with manufacturers, merchants, health personnel, and clergy, data which indicated contact with the deaf, knowledge of local conditions among the deaf, and general knowledge of the deaf and deafness. Implications drawn in summarizing the study were that the deaf were not a homogeneous group, but they did have in common varying degrees of difficulty in communication, difficulty which handicapped them in many ways. Although none of the difficulties faced by the deaf was found insuperable, their successful adjustment demanded planning by both the entire community and the deaf individual, and, if the hearing community were to participate effectively in planning for the welfare of the deaf, its members had to have social contacts with the deaf and a practical knowledge of deafness and the problems of the deaf. Also provided are explanations of the project's methodology and its results concerning the deaf (membership and participation in groups, family life, and individual adjustment) and the hearing (quantitative-qualitative comparisons on social contact with and knowledge of the deaf and on social characteristics). (JD)

JAN 31 1969

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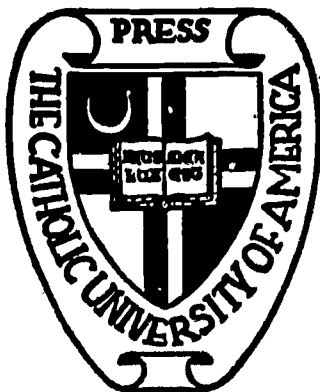
The Catholic University of America

Interaction of Deaf and Hearing
in Frederick County, Maryland

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Thomas J. Harte

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No. 3

December, 1964

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IN FREDERICK COUNTY, MARYLAND

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The Bureau of Social Research
Department of Sociology, The Catholic University of America

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I N F R E D E R I C K C O U N T Y , M A R Y L A N D

by

Paul Hanly Furfey
Thomas J. Harte

December, 1964

The Catholic University of America Press
Washington 17, D.C.

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Library of Congress Catalog Number: 64-8308

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PREFACE

The research described in the present report was carried out by the Bureau of Social Research of The Catholic University of America and was supported, in part, by a research grant, number RD 1012s, from the Vocational Rehabilitation Administration, Department of Health, Education, and Welfare, Washington, D.C. 20201. For purposes of community publicity, the study was called the "Deaf Community Research Project" (DCRP).

The Bureau of Social Research was organized to provide a stable nucleus of professional and clerical personnel with the necessary skills for carrying out moderately large-scale grant and contract research. When the work load is heavy, additional workers are hired, either on a part-time or a temporary full-time basis. Thus it came about that a good many persons were employed at one time or another on this Frederick study. Some of these worked in the Bureau's Washington office; and some, in the special branch office which was maintained in Frederick.

In the grant award Dr. Furfey and Dr. Harte were named as Co-Principal Investigators, and it is for this reason that their names appear on the title page of the present report as co-authors. It would be unfair, however, to fail to mention a number of other persons who participated actively both in gathering information and in the writing of this report.

Dr. Ann Douglas, Dean of the Georgetown University School of Nursing, was responsible for the discussion of health problems of the deaf; she is at present engaged in a more extensive study of the same topic under a different grant (USPHS CH 00057-01). All the case material herein presented was analyzed

by Dr. Mary Elizabeth Walsh, Professor of Sociology at The Catholic University and a trained caseworker; she wrote the long section in which the case material is presented and discussed.

For the sample survey of the hearing population, a group of young men and women were hired as enumerators. They worked out of the Frederick office and were supervised by Miss Rosalinda M. Reuter, Project Coordinator. Miss Reuter also carried out personally the survey of nearly all the merchants, was responsible for examining the records in the county courthouse, and helped in various other ways. Mr. William R. Tash had charge of the survey of manufacturers. The deaf persons and some members of their families were interviewed by two teachers from the Maryland School for the Deaf and by a trained caseworker. In most cases both the caseworker and one of the teachers conducted interviews at different times. In addition, a number of other experts in various ways contributed their specialized services.

The two Co-Principal Investigators were both personally involved in all phases of the study from the preliminary planning to the preparation of the final report. However, Dr. Harte tended to be more active in the gathering of data in the field, whereas Dr. Furfey was more concerned with the analysis of the data in the Washington office.

The cutting of the Multilith Duplimat Masters from which this report was printed was the responsibility of Miss Catherine C. Slattery, the Bureau's Administrative Assistant. The reader will correctly infer that Miss Slattery knows her business.

ACKNOWLEDGEMENTS

The present study was first suggested by Dr. Jerome D. Schein, Director, Office of Psychological Research, Gallaudet College. He was himself engaged at the time in a study of the Washington deaf and he pointed out that a more or less parallel study of the deaf in a small city and a rural district might be interesting.

Since, as already mentioned, this study was made under a grant from the Vocational Rehabilitation Administration, our staff worked with Dr. William M. Usdane, Chief, Division of Research Grants and Demonstrations, of that agency, and with Dr. Usdane's staff. We enjoyed uniform courtesy and profited frequently from their skilled advice.

Numerous other persons, groups, and organizations did a great deal to make this study possible. Limited time and space make it impossible to name them all, but they include civic and social leaders in Frederick City and County, the local newspapers and radio stations, and others. Not to be forgotten are the many clergymen, manufacturers, merchants, and other citizens who gave of their time to our interviewers.

Our debt to the Maryland School for the Deaf is enormous. Room is lacking to mention all the members of the staff who again and again proved very helpful. However, it is impossible to pass over the names of Mr. Lloyd A. Ambrosen, Superintendent, Miss Margaret S. Kent, Principal, Mr. Kenneth R. Lane, Vice Principal, and Miss Hazel K. McCanner, Secretary to the Superintendent. Without the skilled and timely aid which we received from these, and other school personnel, the present study would have been wholly impossible.

The expert advice of Dr. Joseph F. Daly, Chief Mathematical Statistician of the U.S. Bureau of the Census, played an essential part in the formulation of the sampling design and the mathematical analysis of the data.

Finally, one must remember that research involving case studies must also involve the gathering of a good deal of quite personal information. To those persons who were generous enough to cooperate with our staff by furnishing such information, we are profoundly grateful. We trust that, through our study, their generosity may ultimately lead to a more intelligent and more helpful understanding of the deaf and their problems by the country's hearing population.

I. INTRODUCTION

The social aspects of deafness have received remarkably little attention from sociologists. Yet it is evident that deafness, with the communication problems it involves, must profoundly affect interpersonal relations. The deaf live in a special sort of social environment. Rehabilitation counselors cannot be indifferent to this fact. To be helpful, a counselor must understand his deaf client not merely as an individual, but as a member of a particular kind of social group. It was logical, therefore, that the Vocational Rehabilitation Administration should have helped to finance the present study.¹

It has been mentioned already in the "Acknowledgements" that the stimulus for the present study was Dr. Schein's research on the Washington deaf. It seemed reasonable to assume that the deaf living in rural districts, or even those living in a small city, would face problems somewhat distinct from those of the deaf in a city the size of Washington. Therefore, the City of Frederick and the surrounding rural district which make up Frederick County were chosen as the locale of the study.

The City and County of Frederick offer certain definite advantages. The City alone, with a population of 21,744 at the time of the 1960 Census, and the County including the City, with a population of 71,930, were small enough to be surveyed with reasonable thoroughness with the time and funds available. Frederick City is an hour's drive from Washington so that not too much time was lost by the staff in the necessary travel back and forth. However, the greatest

¹This investigation was supported, in part, by a research grant, number RD 1012s, from the Vocational Rehabilitation Administration, Department of Health, Education, and Welfare, Washington, D.C. 20201.

advantage of Frederick was the presence of the Maryland School for the Deaf with its highly efficient and cooperative staff.

Purpose of the Project

The project had a twofold object. Both the deaf and the hearing were studied. This was obviously necessary since the study's focus of interest was the interaction of these two groups.

In the present connection, the "deaf" were defined as those without usable hearing in the speech range even when assisted by a hearing aid. By this definition those merely hard of hearing were clearly excluded. On the other hand, the receptive aphasic were included because, although in such persons the organ of hearing itself may not be impaired, their hearing is not "usable."

The method used in studying the deaf was essentially the casework method. The precise techniques will be described later; but in sum they amounted merely to assembling all pertinent information from every available source: interviews, school records, public records, observation, and so forth and then analyzing this information by the familiar processes of social casework. The effort was made to see the social environment through the eyes of the deaf person and to understand his reactions to it and his reasons for them.

The principal study of the hearing population consisted of interviews with a probability sample of residents of the City and County aged 18 and over. The sample design is described in Appendix I. The interview schedule was structured to yield three numerical scores plus certain social information, such as age, sex, and the like. The first score, called Contact Score, was designed to measure the amount of social contact which the interviewee had had with deaf persons. The second score, Local Knowledge Score, was based on

questions relating to local conditions affecting the deaf, particularly those relating to the Maryland School for the Deaf located in Frederick. Finally, the General Knowledge Score was concerned with knowledge about the deaf and deafness in general. The social information asked of the interviewee included such items as sex, age, marital status, occupation, and the like. Thus the interview schedule made it possible to study interrelations between these characteristics and the three scores. These interrelations formed a principal focus of interest for the whole study.

In addition to the survey just described, four special studies were made of four special groups of the hearing, namely, of manufacturers, of merchants, of health personnel, and of clergymen. In earning their living, in shopping, in attending to their medical and religious needs, the deaf are obviously handicapped by their difficulty in communication. The special studies were designed to learn more about these handicaps and in what way the community helps, or fails to help, the deaf to overcome them.

Rationale of the Study

At the very beginning of the study one staff member was assigned as a full-time task the duty of studying the literature on the deaf and deafness to gather background information which might be helpful in planning the research. The literature is fairly extensive. The medical aspects of deafness are well covered, and so are the educational aspects. Very little, however, has been written on the sociology of deafness, and practically nothing on the specific subject of the present study.²

²By far the best tool for finding literature on the social aspects of deafness is the section, "Social and Legal Factors," in dsh Abstracts, a quarterly publication of Deafness, Speech and Hearing Publications, Inc.

The New York State Psychiatric Institute study³ was published while the present study was in progress. Like our own, the New York research was aided by grants from the Vocational Rehabilitation Administration. It is an excellent study of the deaf in New York State, emphasizing particularly the psychiatric implications of deafness but containing much of interest on other aspects of the subject, such as genetics. The chapter most relevant to our own research is Chapter 6, "Patterns of Socialization and Community Integration." Unfortunately, from our standpoint, the chapter is only three pages long.

Undoubtedly the study closest to our own in its focus of interest is the Deaf Community Study of Washington, D.C. directed by Dr. Jerome D. Schein of Gallaudet College. As was mentioned above under "Acknowledgements," our own study was frankly inspired by Dr. Schein's. A certain parallelism between the two studies is therefore to be expected. At the present writing Dr. Schein's report has not appeared.

To the staff members of the Bureau of Social Research, who are sociologists, it has seemed that the published research on the deaf has serious lacunae. After all, the deaf must live in a hearing world. They must adjust to a hearing community. On the success of this adjustment depends their success in getting an education, in earning a living, in raising their families--in short, their success in living a normal and satisfying life. Yet very little is known, scientifically, about the interaction of the deaf and hearing communities.

In a sense the deaf man is a marginal man. He exists between the deaf and the hearing communities. In the former he is likely to be more at home; difficulties of communication are minimized by his ability to sign and to

³John D. Rainer, Kenneth Z. Altshuler, and Franz J. Kallman (eds.), Family and Mental Health Problems in a Deaf Population (New York: New York State Psychiatric Institute, 1963).

finger-spell. Yet it is almost always in the hearing community that he must earn and spend his money, receive medical care, defend his legal rights, and attend to his religious needs. The dichotomy may extend to his own family; he may be the child of a hearing parent or the parent of a hearing child. Obviously the deaf person's adjustment involves a multiplicity of interpersonal relationships and all these are conditioned in one way or another by his marginal position between the deaf and the hearing communities.

The interaction of the deaf and hearing has more than a purely theoretical and scientific importance. It has practical importance also. It is something that must be understood by all who work with the deaf, by teachers, counselors, social workers, employers, merchants, clergymen. Information gained by a study such as the present one should therefore have some real practical value.

The Setting of the Project

Frederick County lies in the north central part of Maryland. It is bounded on the north by the Mason-Dixon line which forms the Pennsylvania border. Part of the County's southern border is the Potomac River, across which lies Virginia. The area of the County is 663 square miles. The City of Frederick is located somewhat south of the County's center. In addition to Frederick, there are only three places in the County with 1960 populations over 1,000, namely, Brunswick (3,555), Thurmont (1,998), and Walkersville (1,020).

Frederick, City and County, has the unmistakable but indefinable air of an old place with traditions. Citizens are proud of its history. The city was laid out in 1745 and the County was created in 1748. In 1765, when the British Parliament passed the Stamp Act, the County Court of Frederick was the first to refuse to uphold it. November 23 is celebrated as Repudiation Day in

honor of this event.

During the Civil War both Union and Confederate armies passed through the County several times and a number of important military maneuvers took place there. The legend of Barbara Fritchie, which Whittier made so popular, is connected with this war.

A number of famous Americans lived in Frederick County. These include Thomas Johnson, first Governor of Maryland, John Hanson, first President of the States under the Articles of Confederation, Francis Scott Key of Star Spangled Banner fame, and Roger Brook Taney, fifth Chief Justice of the Supreme Court.

The terrain of Frederick County is quite varied. Some of it is extraordinarily good farm land and the County ranks first in the state in farming and dairying and second in livestock production. The northwest corner of the County is mountainous and largely unsuitable for farming. Much of this area is in public ownership and is devoted to recreational uses. At an unpublicized spot Camp David, the presidential retreat, is located.

There are a dozen manufacturing establishments in the County which employ at least a hundred persons, the largest employing 650. In addition there are a fairly large number of smaller firms. Products are quite varied and include men's and women's clothing, brushes, electrical relays and controls, metal household wares, and shoes.

An establishment which gives a special character to Frederick City is Fort Detrick, seat of the U.S. Army Biological Laboratories. Fort Detrick is the center for research in biological warfare which is defined as "the intentional use of living micro-organisms or their toxic products for the purpose of producing disease or death in man, animals, or crops and defense against these materials for these purposes." In spite of the grisly nature of the work, Fort Detrick has had a good influence on the community. Its staff

includes a good many scientists with graduate degrees and many highly specialized technicians. It is said, for example, that improvements in the Frederick public school system have been brought about largely through intelligent pressure from Fort Detrick personnel.

In addition to the Detrick scientists, the faculty and students of three senior colleges enhance the intellectual atmosphere of the County. Hood College in the City of Frederick is a women's liberal arts college affiliated with the Evangelical and Reformed Church. Mount Saint Mary's College and Saint Joseph College, the former for men and the latter for women, are both in Emmitsburg and are both Catholic. In addition there is the Frederick County Community College, a junior college. For the specialized purposes of this study of course the Maryland School for the Deaf is the most important educational institution in the County. It is located in Frederick City. It serves all the deaf of the State of Maryland and offers elementary and secondary instruction. It is a residential school, but a few students whose families live near by attend as day students.

The nonwhite population of Frederick County is only a bit over seven per cent, which may seem small for a County located south of the Mason-Dixon line. Interracial relations on the whole are good. The public schools were integrated without incident. The chief hotel in Frederick City integrated both its lodging and its eating facilities long before civil rights legislation.

The members of the survey staff from the Bureau of Social Research made it their business to get as widely acquainted as possible with Frederick people. It was not hard to do this; for Frederick proved to be a friendly place. Staff members met City and County officials, the police, businessmen, lawyers, clergymen of all faiths, physicians and nurses, hotel personnel. News travels quickly in a city the size of Frederick and it was not long before staff members began to pick up many items of useful background information. Unfortunately,

it was not possible to get as well acquainted with dwellers in rural districts. Their comparative isolation precluded this.

The staff's impression of Frederick and Frederick people after two years of intensive survey was a pleasant one. Frederick retains a certain aroma of the genteel tradition of the Old South. It is conservative in that it is not a town of boosters and go-getters. Frederick citizens are very proud of their past; they are likely to attach a great deal of importance to local history. City Hall has been "restored" and there is a movement to remodel stores in the downtown district to make them deliberately quaint. Yet Frederick is moving with the times. Its school system is considered excellent. Fort Detrick scientists are leaders in their macabre field. Best of all, from our standpoint, the Maryland School for the Deaf is a model institution of its kind.

II. METHODOLOGY

It has already been mentioned that three principal methods were used in the present study. One was used with the deaf; the other two were used with the hearing population. The three methods were: (1) Case studies of all deaf residents of Frederick County, both those living in the City and those in rural districts, (2) structured interviews with a probability sample of the County's hearing population, aged 18 and over, and (3) interviews, some structured and some unstructured with members of four special groups of hearing persons, namely, manufacturers, merchants, health personnel, and clergymen. It is now time to discuss these methods in more detail.

Case Studies of the Deaf

Population studied

Definition. The population studied consisted of the 80 deaf persons who had resided in Frederick County at any time during the course of the study. It did not include the students, teachers, and other personnel of the Maryland School for the Deaf (MSD), unless their principal residence was in the County.

Case findings. The first task was to compile a list of the deaf persons to be studied. Here, MSD gave invaluable aid. This included (a) a current list of students, teachers, and other personnel of the School who met the requirements for the study and (b) another list obtained by searching the files for former students who are permanent residents of the County. Other sources included inquiries made by interviewers, who asked both hearing and deaf for the names of deaf persons known to them. Finally, some names were added by

information obtained in the special studies, such as that of the merchants of the entire County. We feel that the list is fairly complete. However, it contains only one preschool child. It may be possible that others were not brought to the attention of the School or to any of the other sources. Often a young child may not be diagnosed as deaf and hence his name is not available.

General characteristics. The study population is made up of 43 males and 37 females.¹ The adult population (over 18) consists of 61 persons; there are 18 school children; and there is one preschool child. Among the adults, there were 9 over 60 years of age; 17 who were between 40-59; and 35 who were under 40 years of age. Of the total group, 55 were classified as "urban" in that they lived in, or were chiefly associated with, the City of Frederick; the balance were classified as "rural." It is important to note that these two terms are given these specialized meanings throughout this study.

Data collection

The preliminary interview. This was a semi-structured interview, making use of a printed form. The form included identifying information about the deaf person and his immediate family; and information about his birthplace, education, occupation, religious affiliation, type of home, and marital status. A special section of the form was devoted to questions about the individual's deafness; and another section was left blank to provide space for the interviewer's comments. In addition to the information written on the form, the interviewer gave a written account of his observations of the home and family. The preliminary interview was conducted in more than three-fourths of the cases by one male teacher from MSD. Other interviews were done by one female teacher

¹It is, of course, not known how this compares with the nation as a whole; but the New York study found a sex ratio of 113 males to 100 females. This is not very different from our own results which give 116 males to 100 females. See, John D. Rainer and W.E. Deming, "Demographic Aspects: Number, Distribution, Marriage and Fertility Statistics" in Rainer and Others, pp. 13-27.

from the School. In addition to their background of education and training, these interviewers had the special advantage of being able to sign and finger-spell in their interviews with deaf persons who preferred this method of communication. In the remainder of the cases, the interviews were assigned to a trained social worker, and in one case to a sociologist with extensive research experience. There were only two cases not covered by the preliminary interview; in one case the individual flatly refused to have anything to do with the study; and in the second case the individual could not be contacted.

The follow-up interview. This was an unstructured interview, with particular emphasis on the deaf person's family adjustment and individual adjustment. The follow-up interviews were all conducted by a trained social worker, with experience in depth interviews. They were usually done in the evening or on the weekends with the hope of finding the interviewees more relaxed than during the work week. Appointments were made ahead of time and every effort was made to keep the interviews unhurried. The follow-up interviews were made on all but 11 cases. In four cases the person had moved away from the County, in one case the person was ill, two people refused to be interviewed, and four could not be contacted.

In practically all cases the interviews, both preliminary and follow-up, were in the deaf person's home. This had the advantage of allowing for observation on the part of the interviewer. Also, it facilitated communication, as the hearing members of the family could assist. In several cases, for special reasons, interviews were at the YMCA, the library of the MSD, or at the Deaf Community Research Project office in Frederick. In the case of deaf children, one or both parents, or, in a few cases, the grandparents, were interviewed. In some cases the child was present when the interviewer visited the home and in other cases not.

School records. This material can be divided into two parts: (1) Written reports prepared at MSD on members of the study population who had attended the School at some time and written reports from schools other than MSD on members of the population who were educated elsewhere. Many schools were some distance away and could be contacted only by mail. In the case of nearby schools, some information was obtained by interviews also. These reports included information about academic and vocational achievement and social adjustment and audiograms and other factual data regarding the individual's deafness. (2) Record reading at the Maryland School on the children of the study group by the Case Analyst. This group consisted of the 18 children of the entire County who were enrolled at the School and included Pre-Primary, Primary, Intermediate, and Advanced division students. The purpose was to obtain an understanding of the basic school documents as well as to gain a deeper understanding of the children and their needs. The records included material from various reports, such as case histories, diagnostic screening procedures, teachers' reports, achievement tests, and reports of testing and treatment facilities.

Court records. To supplement the case studies of deaf persons and their families, marriage and divorce records for Frederick County were searched at the Frederick County Court House. Records from 1895 to the present were inspected. Information from these records pertaining to any deaf person in the study population, or any member of his family, was copied and included as part of the case studies.

Observation of children in the school. This part of the study was done by the Case Analyst who was also reading the school records. The purpose was to see at first hand the school environment of the child and to learn how he was currently progressing. The first day of observation was spent in a special observation room with a one-way screen where the observer was not noticed by

the children. In this way she had an opportunity to become somewhat familiar with the teaching methods used with deaf children. After that, visits were made to the children's classrooms. With the younger children, the observer was given a sense of intimate participation in the class activity for the day which might include something of special interest like a trip to the library or a rhythm class in the auditorium. While the visiting with the older students was on a more formal basis, it was also informative and helpful. Visits were paid to the classes of all students who were in school at the time and who were on the list as residents of Frederick County. Several had either moved out of the County, were absent because of illness, or had moved into the County too late to be on the list at the time. In some cases the classes were conducted by hearing teachers and in some cases by deaf teachers. In every visit there was an opportunity to discuss the child's progress with his teacher. Informal contacts were possible also at coffee breaks with the teachers or at the lunch served in the school dining room.

Other sources. Certain special studies of groups of the hearing persons also yielded information on the deaf population. These included surveys of employers, medical personnel, ministers, and merchants of Frederick County. Informal interviews with civic and social leaders, as well as ordinary citizens, constituted another fruitful source of information. Any findings relating to deaf individuals in the study population were made available to the Case Analyst.

Data analysis

The evidence. As has just been pointed out, the evidence on which the case analysis was based was quite extensive, including as it did written records of various sorts, a wide variety of oral testimony, and personal observation. These diverse types of evidence supplement each other, and provide the necessary

basis for good casework analysis.

The accumulation of sources was important in the majority of cases because this insured obtaining a well-rounded view of the situation. The preliminary and follow-up interviews were usually made at different times by different people and hence a somewhat different interpretation was obtained. When information from all the contacts was brought together into the individual's case folder, the total was impressive. The wide variety of sources was also helpful in making an evaluation where conflicting opinions were encountered. The reports, for example, contained some information based on community opinion. These reports were sifted and verified wherever possible, preferably by documentary sources. In one case, by way of illustration, community opinion held to the presumption that an individual's marriage was of the common-law type but the legal record of the marriage was found in the County Court, and community opinion was thus found to be in error. One strong point of the research was the fact that so many sources of information were available. Another strong point was that expert opinion on questions regarding deafness was readily obtainable in both Maryland and the District of Columbia. This availability of expert opinion greatly enriched the study. Again the use of documents was most helpful, since audiograms could be obtained in many cases, as well as diagnostic summaries by specialists in various fields relating to the individual's physical and mental capacities.

The fact that so many sources were available was important also because of the unevenness of the source material obtained directly by interview of the deaf persons and members of their families. The majority cooperated to the best of their ability. Some entered into the spirit of the study with exceptional generosity. Others cooperated but to a more limited degree. Many were willing to answer questions but did not know the answers. Others were extremely well informed and could answer well. And so there was a certain unevenness

which needed to be rounded out by other sources.

The written analysis. Although the study of the deaf population was carried out on a case-by-case basis, it was not possible to write it up in this way, due to reasons of confidentiality. Hence it was necessary to use a typological method. However, every generalization presented in the case analysis was based on adequate, concrete evidence, even though this evidence could not be included in this report. The population could be divided first into an adult population and a child population. The adults could be divided into those who were married and those who were unmarried. As a matter of scientific interest many subgroups could be made. However if the subgroups become too small, again the question of confidentiality arises. The focus of interest from the standpoint of social casework is the individual's family adjustment and his personal adjustment. Since the problem of social isolation is a key problem among the deaf, his social role must be considered in some detail. Does he live in an urban or rural community? How is his community participation affected by his economic, racial, or religious groups? Does he live alone or with his family? Does he have any friends outside his family? Does he belong to any organized groups of either deaf or hearing persons? These are all questions which are of concern in considering the social adjustment of each case.

Sample Survey of the Hearing Population

It has been mentioned already that this survey formed an important part of the total research. It is now time to describe in some detail, first the population studied, and then the techniques used for the collection and analysis of the data.

The population studied

This consisted of all hearing persons aged 18 and over with established residence in any part of Frederick County. In applying this definition certain interpretations were necessary. For example, it was arbitrarily decided that residential students at the local colleges should not be included unless their homes were also in the County.

Separate sampling designs were used for the City of Frederick and for the rest of Frederick County. The hearing persons of the City were sampled in three strata as follows. Stratum I: Block-sides exclusive of selected large apartment and other special dwellings. Stratum II: Selected large apartments. Stratum III: Other special dwellings. Designs used for the three strata are as follows:

Stratum I. The design here was cluster sampling with two stage subsampling within each selected cluster. The primary sampling units were inhabited block-sides. Staff members walked through all the streets of the City and listed all inhabited block-sides, that is, segments of one side of a street between two cross streets, that had people living on them. These were arranged in order beginning with the block-side with the largest number of dwelling units (DUs). Then every third block-side was selected from the listing beginning with a randomly selected number. Within the selected block-sides all DUs were listed consecutively and then every third inhabited DU on the list was selected. Finally, among the persons 18 years and over in the selected DU, one was selected for interview by an equal probability selection method.

Stratum II. The selected large apartment houses within the City were listed. Then, beginning from a random number, every ninth individual apartment was selected. Within this apartment one interviewee was selected by an equal probability selection method.

Stratum III. This consisted of dwellings, such as nursing homes or convents, where at least ten unrelated persons had their residence. Systematic

sampling was used in this case. Beginning with a random number, every tenth person was selected for interview.

The County sample. The following design was used for the County outside Frederick City: (1) The 1960 Census enumeration districts (EDs) were arranged in order of magnitude and, beginning from a random number, every third ED was selected. (2) The selected EDs were divided into "segments of enumeration districts" (SEDs) of about 55 DUs each. (3) The SEDs were listed and a systematic sample of every third SED was drawn. (4) All the roads within the selected SEDs were divided into identifiable road sections. Each of these road sections was defined and the description was written on a card. All cards belonging to a given SED were shuffled, and the road sections were listed in this random order. Enumerators visited each road section following the said random order, and listed the DUs consecutively. (5) Every fifth DU was selected from this list. (6) Within each DU an interviewee was selected by an equal probability selection method.

It is, of course, a fundamental principle of probability sampling that an individual once drawn into the sample must be interviewed. If too many of the selected persons are passed over, simply because it is difficult to interview them, then the sample loses its random character and mathematical analysis becomes invalid. Faithfulness to this principle imposed not a few difficulties on the staff. There was, for instance, the case of the alcoholic whom our enumerator found sober enough to interview on the tenth visit. It was, however, in the County outside the City of Frederick that faithfulness to sampling design imposed most difficulties. Such were the vagaries of chance that some of the persons selected by the County sampling design lived in remote mountainous districts inaccessible by the ordinary automobile. The solution was to hire a jeep. Thanks to this vehicle, our enumerators were able to go everywhere.

In spite of all these efforts, it was of course impossible to interview every single individual originally selected in the sample. Some had moved away. Some had died or were too ill to be interviewed. In spite of repeated call-backs our enumerators were unable to locate some. There were a number of outright refusals. Table 1, Appendix II gives the number selected in the sample, the number actually interviewed, and the percentage not interviewed. As the reader can see from this table, more than nine-tenths of the entire sample were interviewed and in the case of the City the proportion was better than 93 per cent. Only those with experience in this sort of survey work can appreciate the enormous effort necessary to attain figures like these.

Accuracy of the sample survey

The point of supreme importance in judging the quality of a survey is the accuracy with which the survey results approximate the true characteristics of the population surveyed.² Accuracy is affected by many factors. First of all, there are sampling errors due to the fact that the sample may not be precisely representative of the entire population. Then there are response errors, the failure of respondents to give frank and accurate information to the interviewers. It is also inevitable that in spite of meticulous care some errors will be introduced during the recording and processing of the data. The size of one type of error, namely, sampling error, may be discussed in terms of probability statements by mathematical sampling theory. However, sampling theory presupposes that information was obtained for all cases selected for the sample, and actual practice falls short of this ideal. The application of sampling theory to the present survey will be discussed at

²For a discussion of "accuracy" and its distinction from "precision," see, M.H. Hansen and Others, Sample Survey Methods and Theory (2 vols., New York: Wiley, 1953), vol. 1, pp. 10-11 and passim.

appropriate places. In the meantime it would be desirable to have some independent check on the accuracy of the results.

One such check is the comparison of some of our results with corresponding results available for the same population from the 1960 Decennial Census. There are certain defects in such a comparison. Three years separated our survey from the Census. Again, although the Census, being based on a complete enumeration, is presumably much more accurate than our sample survey, it is itself subject to some errors. Nevertheless the comparison mentioned is not without interest.

Table 2, Appendix II compares survey estimates and Census results for total population. As the reader can see, the survey shows a slight increase in population for the County as a whole, as one would expect. A decrease appears in the City figures. This may be accounted for by the fact that students in local colleges were included in the Census, but excluded in the survey.

Table 3 compares survey and Census figures on race and sex. Racial differences proved to be small enough to be explained by sampling errors when differences were compared with their standard errors. The sex differences were somewhat harder to explain, as the statistical analysis showed. The survey yielded a notably higher proportion of females than the Census. One explanation which was discussed by the staff was the possibility that, among those persons selected for the sample, the women proved to be more available for interview than the men, the latter being more often absent for work. However, a review of the interviewers' sampling sheets did not substantiate this hypothesis. Thus the possibility remains that some slight bias in favor of females, due to unknown causes, existed in the survey.

Data collection and analysis

Interview staff. The hearing adults included in the sample for the City of Frederick were interviewed during the summer of 1963; the County sample was begun during the same period, but the interviews were not completed until early in 1964. A total of ten interviewers and one Field Supervisor were employed for varying lengths of time during this phase of the study. These were recruited from two local colleges and from the Maryland School for the Deaf. Of the 11 who worked in the field, seven were teachers (two of these from MSD) and four were college students. It is worth noting that only two of the interviewers had some background in the behavioral sciences, namely, the Field Supervisor, who had extensive training in sociology at the graduate level and who taught this subject at both the local colleges mentioned above, and a student in college who was majoring in social science. The remainder were identified with the various unrelated disciplines, such as special education, biology, accounting, and physical education. Four of the staff were females and seven were males, with an age range from early twenties to late thirties. With the exception of the two teachers from MSD, all of the interviewers were recruited by the Field Supervisor.

This phase of the project was initiated by an intensive two-day briefing session in mid-June, 1963, conducted by the two Co-Directors. The program included instruction on the techniques of interviewing, precise details on the sampling procedures to be followed, and explanation of the exact meaning of each question on the interview schedule. Interviewers were required to memorize each question, with all possible alternative responses, and in proper sequence. They were also required to list households and to interview at least five randomly selected adults in blocks in Frederick City which had not been selected in the block-side sample. In the last session of this initial briefing, the interviewers were quizzed on their knowledge of schedule items

and each question was again reviewed in the light of the interviewer's experience with actual interviews in the field.

Assignment of interviewers

Interviewers were assigned in pairs to specific sections of the City, but each interviewer had his own block-sides within his section. They first listed each occupied household in their sample blocks, and indicated which dwelling unit would be drawn into the sample. This and all the following procedures were checked daily with the Project Coordinator. They then listed all persons 18 and over in the sampled dwelling units on a specially designed sampling sheet which provided built-in controls to insure that the person to be interviewed would be selected in a completely random fashion. Each interviewer was expected to complete an interview with every person drawn into his sample, but "hard-core" refusals were later assigned to two of the most successful interviewers. Completed interview schedules were checked and coded each day, then returned to the Bureau of Social Research headquarters in Washington where they were transferred to IBM cards and processed.

After about two weeks in the field, the interviewers were called back for a second major briefing session. This was devoted exclusively to the problem of interview reliability. A special computer program had been designed to compare the performance of the paired interviewers on all items against each other, and also with all interviewers in the field. The assumption was that interviewers working in homogeneous areas would obtain approximately similar responses on most items. On the basis of computer analysis, it was possible to single out particular interviewers who were markedly deviant on each question and to check with them on the manner in which they asked questions or scored responses. This soul searching experience payed off handsomely in generally improved interviewing techniques.

The schedule. The interview schedule, which had been carefully worked out and pretested prior to the briefing session, comprised four sections: (1) The first dealt with the extent and intensity of the respondent's social contact with the totally deaf; the responses were scored in such a way as to yield what was called a Contact Score. (2) The second contained questions concerning the Maryland School for the Deaf, and yielded a Local Knowledge Score. (3) The third was concerned with information about the deaf and deafness in general; the score derived from this section was called the General Knowledge Score. (4) The final section dealt with the personal characteristics of the respondent, such as age, sex, occupation, years of education, and the like.

Reliabilities: The three scores were treated statistically as test scores. Their reliabilities were examined by the usual method of split halves with the Spearman-Brown formula. This procedure gave a reliability of .63 for Contact Score, .72 for Local Knowledge Score, and .67 for General Knowledge Score. Guttman reliabilities were also calculated.³ They gave almost exactly the same figures, namely, .62, .71, and .67. Both Spearman-Brown and Guttman reliabilities were based on the entire group of 719 interviewees from the three City Strata.

Reliabilities as high as these were a pleasant surprise, the tests being as short as they were. For example, the Local Knowledge Score was based on only 13 questions. Reliabilities of this size are quite satisfactory for group comparisons. They would not, of course, be satisfactory for individual diagnosis, but that fact is irrelevant here. Spearman-Brown and Guttman reliabilities were also calculated separately for each of the seven inter-

³L. Guttman, "A Base for Analyzing Test-Retest Reliability," Psychometrika, X (1945), pp. 255-82. The advantage of the Guttman formula is that, unlike the Spearman-Brown formula, it does not assume that the variabilities of the two half-scores are equal.

viewers who made at least 25 interviews. The two sorts of reliabilities for the seven interviewers on the three tests gave a total of 42 coefficients. These ranged in size from .34 to .86. We have no explanation for the surprising differences among enumerators in their ability to get reliable test responses from interviewees. This is a point worthy of formal investigation.

The lowest reliabilities were those for Contact Score. However, in this instance, the surprising thing was that the reliabilities turned out to be as high as they did. Contact Score was designed to measure the amount of social contact which the interviewee had had with the deaf as friends, neighbors, relatives, fellow workers, fellow club members, and so on. It is not altogether clear why the fact that one has one type of social contact with the deaf should increase the probability of having also another type of contact; yet this is what is implied by the reliabilities obtained. On the other hand it is no surprise that the knowledge tests were reliable. A person who is knowledgeable about the deaf and deafness in one area of information might be expected to be knowledgeable in other areas as well; and this is what the reliabilities imply.

Validities. The validities of the tests cannot be measured as simply as their reliabilities. The test for Contact Score is valid if the interviewees gave truthful answers to questions about their social contacts with deaf people. It seems reasonable to assume that this would usually be the case. The validities of the tests for Local Knowledge and General Knowledge are examples of what is known as content validity. That is to say, these tests are valid if the questions they contained cover a fair sample of the sort of knowledge which a well-informed citizen might reasonably be expected to have concerning deafness and the deaf. Whether this is the case is a matter of judgement. It can be said, however, that the selection of the test items was made only after a good deal of thought and consultation with experts.

Order of items. One question which occurred to the investigators was

whether the order of asking questions might affect the answers. Therefore two forms of the interview schedule were prepared in which the same questions were asked in a different order. One was printed on white paper and the other on yellow paper. Enumerators were instructed to alternate these, using the white schedule on the first interviewee, the yellow on the second, and so on. After the completion of the survey, mean scores were calculated for those interviewed by white and yellow schedules respectively. The differences between these means were examined by the usual formulas for the significance of differences between means and the differences in question proved not to be significant.

The interpenetration experiment. Was there any tendency for some enumerators to obtain responses from interviewees which would yield consistently higher or lower scores than those obtained by other enumerators? This problem was attacked by the technique of interpenetration. In the survey of the City of Frederick, Stratum I was divided into four special sections. It was planned to assign two enumerators to each. Then, since both enumerators were surveying the same population, the mean scores obtained by one should not differ significantly from those obtained by the other when examined by the usual statistical tests for the significance of differences. This test was applied not only to the three scores but also, as a check, to three other numerical results, namely, age, length of residence in Frederick, and years of schooling.

In one of the four special sections it was not feasible to apply the technique of interpenetration because, due to staff problems, eight different enumerators had to be assigned at different times to this special section. However, the other three special sections were surveyed, each by two enumerators only and their results were compared. In the case of one special section differences between means were in no case significant at the five per cent level. In another special section one enumerator obtained significantly higher Contact and Local Knowledge Scores (both critical ratios were 3.0), but

the same enumerator also obtained a significantly higher mean for years of schooling (critical ratio, 2.1). Perhaps the most reasonable way to interpret these facts is to realize that the individuals surveyed by the two enumerators were not simple random samples of the total population of the special section in question as the formulas presuppose. They were actually cluster samples, that is, groups of dwelling units in specific block-sides. It might happen that one enumerator would, by chance, be assigned a couple of block-sides with very special characteristics. In the final special section one enumerator obtained a significantly higher mean for Contact Score and a significantly lower mean for General Knowledge Score (both critical ratios, 2.7).

The general conclusion to be drawn from the interpenetration experiment is that there was very likely some tendency for some enumerators to obtain higher-scoring responses than other interviewers. However, for the reasons explained, our results do not permit us to affirm this conclusion with full certainty. In any case these between-interviewer differences do not seem to be serious enough to constitute a major defect in the survey as a whole.

Interviews with Special Groups

Manufacturers

No comprehensive survey was made of the occupational adjustment of all the deaf in the study group. However, information was obtained about several special groups. In particular, the manufacturers in the Frederick City area were surveyed for information about their relations with the deaf.

There is some difficulty in defining the word "manufacturer." It was therefore decided to ask Mr. Richard D. Hammond, Manager, Frederick Chamber of Commerce, to draw up a list of the Frederick City firms falling under that term. He responded with a list of 23 companies. Most of them would be classified as light industry; but there was one iron foundry and two cement companies.

The number of employees ranged from 12 to 535 with a median of 50.

The survey instrument was a combination schedule and interview guide, containing both structured and open-end questions. At the plant of each company some official familiar with company policy and practice, often the manager, was interviewed. The survey team consisted of three men experienced in interview technique.

Out of the 23 companies surveyed, 7 had a total of 11 deaf employees. The conclusions of the survey were based on the policies and practices of all 23 companies, but more specifically on the experience of the 7 which employed the 11 deaf.

Merchants

Shopping at retail stores is of course an activity of some importance in the life of the citizen. To study the behavior of the deaf in this area a survey of all the more important retail stores in all of Frederick County was undertaken. Of course the decision as to what stores constitute the "more important" ones is necessarily an arbitrary one, no figures being available on the amount of business of specific stores. What was done, then, was to include: (1) all stores in an area which was defined for purposes of the study as the downtown shopping area of Frederick City, (2) the three Frederick City shopping centers, (3) all the retail stores in the rest of the County which appeared to the staff to be important. It is to be noted that not a sample, but the entire universe of important stores was included. A total of 291 retail outlets were visited and the proprietor or someone else in a position of authority was interviewed.

The interviews were in accordance with a structured interview schedule, but the interviewer's general impressions and observations were also recorded. About three-quarters (74.2 per cent) of the interviews were conducted by one

full-time staff member; the balance were done by three college students who were skilled in this task. Of the merchants studied only a few (2.1 per cent) had ever had deaf employees; but a large majority (86.3 per cent) could recall having had deaf customers.

Health personnel

The study of health personnel in their relation to the deaf was conducted by observation and unstructured interviews. The following paragraphs indicate how the study was conducted at the School and in the general community.

Some time was spent visiting MSD and interviewing the personnel. The deaf students there are under the care of their family physician. Emergency and routine infirmary care are rendered by a local physician who is appointed by the state through school administration referral. Because of the wide-spread geographical distribution of the permanent residences of the students enrolled at MSD, it was considered impractical to contact each individual family physician. Instead, the local physicians who carried deaf individuals in their case loads were contacted and interviewed whenever possible.

A cover letter explaining the nature of the study was sent to the president of the local County Medical Society and a copy was sent to the Secretary of the same organization. Permission to interview members of the Society was requested as well as Society approval of the study. When approval was given, the interviewer searched through the list of physicians and attempted to find those who would be involved with deaf patients. Because a number of the deaf teachers were young married couples with young children, obstetricians and pediatricians were selected. Another natural choice seemed to be otolaryngologists. From here the next group selected were the general practitioners. Other health personnel were also interviewed. These included dentists, chiropractors, and nurses. The nurses were chosen from two areas, the local hospital which

services the community and the official public health nursing agency. (The community apparently cannot support a voluntary service such as a Visiting Nurse Association). From the hospital a representative group of teaching supervisors as well as some staff nurses from the areas of medicine, surgery, obstetrics, and pediatrics were interviewed. Interviews were also conducted with the nurse director of the public health agency and one staff nurse who had had some experience in dealing with the hard-of-hearing. Three local dentists care for deaf patients; one of these was seen. Only one chiropractor consented to an interview. She had no deaf patients, but many elderly patients who were hard of hearing.

Interviews were unstructured and lasted from three-quarters of an hour to three hours. The initial contact was usually made by telephone, although a few first contacts were made through a mailed written request. The information obtained through the interview was written out, typed, and filed.

Clergymen

Two separate attempts were made to learn the experiences of ministers, priests, and rabbis with the totally deaf. In the summer of 1962, a questionnaire was sent to all 112 members of the Frederick County Ministerium and to the 27 members of the Frederick City Ministerium. It should be noted that all but 6 on the latter list also belonged to the County Association. The responses were so few and so vague that it was decided to drop this approach. One question asked the ministers to list the names and addresses of deaf persons known to them. Of those who completed the questionnaire, a few listed names already known, but most of the names received this way were of hard-of-hearing rather than deaf.

A second approach proved more fruitful. When deaf persons in Frederick City and County were initially interviewed, they were asked to indicate their

religious affiliation. From this information a list of the deaf was compiled, for the City and the rest of the County, according to religious affiliation. Then one of the Co-Directors personally interviewed each minister or priest who should have had deaf persons in his parish or congregation.

A total of 37 ministers and priests were contacted in this way: 15 ministers and 1 priest in the County outside the City, 19 ministers and 2 priests in the City. Three of the ministers were Negroes. These interviews were made either in the clergyman's home or office.

III. RESULTS: THE DEAF

Membership and Participation in Groups

Socio-economic class

Socially and economically, we have three indices which give some insight into the class structure of the deaf population: occupation, education, and type of living quarters.

Occupation. Of the 61 deaf adults, only seven did not have an occupation. One of these was taking further training, and the other six were not working primarily because of some handicap other than deafness such as age or some physical or mental disability. The remaining adult population can be divided into groups of approximately four quarters. The first group consists of professional men and women; the second is made up of men and women doing semi-skilled and unskilled work; the third consists of women who are not engaged in gainful occupations but are classified as housewives; and the fourth is a miscellaneous group of men and women who are working in clerical occupations, skilled trades, service, and farm work.¹

From the standpoint of their own earning power, the deaf adults are neither among the very rich or the very poor. Aside from those with professional training, special skills, or unusual abilities, they are a hard working group

¹In New York 6 per cent of the employed deaf were clerical workers, fewer than 3 per cent were businessmen or employers, 30.4 per cent were unskilled workers, and over half were skilled. See, K.Z. Aitshuler and G.S. Baroff, "Educational Background and Vocational Adjustment" in Rainer and Others, pp. 116-30. "While most of the graduates have held a job at some time, about 62 per cent of them are working at the present time (men, 82%; women, 36.6%)." Joseph Justman and Sue Moskowitz, A Follow-Up Study of the School for the Deaf (New York: Board of Education of the City of New York, 1963), p. 79.

of people who manage to make ends meet by working regularly at whatever jobs are available. Fourteen of the women are employed and the others are mostly housewives. It appears that a substantial segment of the men are able to earn enough to support their families.

Education. One-quarter of the adult members of the study group were college graduates, and some had done graduate work in addition. This unusually high proportion of well-educated persons was doubtless due to the fact that the group was heavily weighted with members of the MSD faculty. The other three-quarters consisted of persons whose educational achievement varied from an excellent record at a state school for the deaf down to the one individual who had had no formal education.²

Type of living quarters. The married people for the most part are living in homes which they own (16) or in houses or apartments which they rent (19). Most of the unmarried or single individuals are living in rented rooms (7) or in the homes of relatives (21). Others are living at their place of employment, are hospitalized, or else no information was available as to whether the home was rented or owned. The 19 children of the population reside with their families.

In using living quarters as an index of socio-economic status we have to take into account that this factor does not depend entirely on the individual's earning capacity. Even those who are completely self-supporting may have a family inheritance which helps them to become property owners. For others, adults who are not completely self-supporting, and for the children, the standard of living is affected by the circumstances of the parental family or of the relatives with whom they live.

²"Almost all" of the deaf population in the New York study "had some formal schooling, and 3.7 per cent have had more than a high school education." K.Z. Altshuler and G.S. Baroff in Rainer and Others; quotation on p. 116.

The homes owned, including those of the children and of adults living with relatives, ranged from an estimated value of \$3,000 to \$25,000, with about two-thirds in the over \$10,000 category. In several cases the home was a part of a family business or farming property, valued from \$20,000 to \$50,000. Rented dwellings averaged around \$40 to \$45 per month, with a range of \$30 to \$125. More than one-third of the population of 80 people live in dwellings which are substantial homes or high-rent apartments. The others live in more modest circumstances but only a half dozen can be said to live under very poor urban or rural conditions.

The socio-economic status of the study group covered a quite wide spectrum, from the fairly well-to-do to the very poor. However, if one considers the high average educational level of the group and the rather large proportion of property owners, it becomes clear that the deaf of Frederick City and County are far from constituting a disadvantaged group. One's general impression is quite favorable.

Ethnic groups and nativity

Racially, the deaf population is almost entirely native-born white (75). There were, however, a few others, namely, one foreign born white and four native born nonwhite or Negro.

Over half the population (43) was born in Maryland, 25 in Frederick County, and 18 in other parts of Maryland. Aside from the one person born outside the United States and one case with no information about place of birth, the remainder came from other States.

A sizeable segment has lived in Frederick County for some time. Twelve people have resided in Frederick County from 11 to 20 years, and 20 for more than 20 years.

The ethnic stock of the Maryland families is predominantly that of

northern and western Europe. Of those who gave information about their ethnic background, the German, English, and Irish were mentioned most frequently, in the order given. Among those who came from other parts of the United States, the ethnic strains are more diversified.

Religious groups

Of the 80 deaf in the study group, all but one claimed some religious affiliation. It should be noted that deaf children were assigned to the religion of one or both parents even though they may not have held actual church membership. Sixty-~~eight~~^{seven} (85 per cent) were Protestants, 11 were Catholics, and 1 was Jewish. Of the Protestants, Methodists ranked first (24), Lutherans second (10), with Baptists and just "Protestants" tied for third (7 each).

Unfortunately, no provision was made on the interview schedule to obtain information on attendance at religious services. Incidental information supplied voluntarily by 19 respondents provided some clues on this point. Of these 19, 10 stated they attended church regularly; the remainder attended irregularly or not at all.³

It is interesting to compare the reported religious affiliation of the Frederick deaf respondents with the findings of the survey of clergymen who ministered to churches in the entire County. Only 6 of the 37 ministers and priests interviewed knew deaf members of their congregations. One minister in the City knew quite a number of deaf adults and children by sight and also had

³Justman and Moskowitz, pp. 70-3, report that over half of their study population indicated membership in a church or temple and nearly two-thirds indicated some degree of attendance at services. Of the deaf interviewees in the New York Study, "84 per cent reported some degree of religious activity, while more than one-third (39%) claimed regular attendance at either hearing or deaf churches. Slightly more than one-third (36%) of those who were regular participants in religious activity exclusively attended hearing churches and synagogues, while 27 per cent were members of congregations limited to the deaf." See, George S. Baroff, "Patterns of Socialization and Community Integration" in Rainer and Others, pp. 113-15.

some personal contact with them. The reason for this familiarity was the fact that a member of his congregation, who is also a teacher at MSD, regularly signs a Sunday service for deaf participants. Three ministers knew two deaf persons quite well, and the remaining two clergymen who knew deaf members of their congregations (one each) knew them merely by reputation or by casual contact.

For the rest, ministers and priests, they had no contact with deaf members of their religious denominations. In fact they were completely unaware of the existence of these deaf people, in spite of the fact that in many cases they knew personally other members of the deaf person's family.

In interpreting these findings, it is important to bear in mind that Frederick is relatively a small city. It would be reasonable to expect that the clergy would know the members of their congregations.

None of the ministers or priests interviewed knew of a deaf member of any church-sponsored organization. However, it is appropriate at this point to note that the religious needs of students at MSD are well supplied. A priest from the Baltimore area, assisted by two Sisters and several young men from a nearby seminary, gives religious instructions to Catholic students one afternoon each week. Several Protestant ministers, also from the Baltimore area, provide a similar service for Protestant students. In addition, during the school year, the two Protestant ministers referred to above alternate in providing a Sunday service for children who remain in school over weekends. No such service was provided during the survey period for the Catholic and Jewish children because of the unavailability of clergymen who could communicate with the deaf.

In the area of religious participation, deafness constitutes a very serious handicap. This is especially true for non-ritualistic religions. Formal religious services are ordinarily designed for hearing people exclusively. It may be assumed that deaf people have the same religious needs as the hearing.

Yet these needs are not being met for most deaf adults by the local clergy in the Frederick Community, with the exceptions noted earlier. It is somewhat surprising that hearing teachers at MSD are not used as interpreters for Sunday services.

So much for formal religious services, which consume only a fraction of a clergyman's time and effort. Each one plays many different roles for the members of his congregation, that of educator and counselor being foremost. There is no absolute need in these latter areas for mastery of manual signs since writing is a reasonably satisfactory means of communication. Apparently the deaf are reluctant to approach clergymen with their problems. Then why don't the clergy go to the deaf to offer their services? The answer is a tragic but indisputable one: most clerics simply do not know that the deaf exist. We must conclude that religion is an area in which the deaf are likely to be deprived--not only in their participation in strictly religious activities, but in their participation in church-connected social activities as well.

Urban-rural

As mentioned previously, 55 people were classified as urban, and 25 as rural. However, among the rural people only four were engaged in farming. The others fell into a general rural non-farm category, with the exception of a half dozen who were living in small towns or cities like Thurmont and Brunswick.

There is a general trend in the United States for people to move from rural to urban areas and this is true also of the deaf population. At least a dozen of the deaf adults now living in Frederick City were born in rural areas of Maryland or of other states. Among those born in urban areas, the people were predominantly from small cities and only six were known to be from a large city.

The deaf children classified as urban are 13 in number. They present a somewhat different picture from the six rural children. The rural children were all born in Maryland whereas the urban children have a more diversified background. Five were born in Frederick City, six were born in other small cities of Maryland, Virginia, and Georgia, and two were born on an Army or Navy Base.

Organized societies for the deaf

Organizations especially for the deaf play an important role in the deaf community. Almost two-thirds of the study population of adult deaf persons belong to clubs and organizations for the deaf. Most of this group belong to one or two clubs but a smaller number belong to three or four.⁴

The social club which is primarily for recreation is very popular with deaf couples and husband and wife can attend the socials together. Many of the older residents of Maryland are well acquainted throughout the state and they find these gatherings a pleasant opportunity to renew friendships in Frederick, Hagerstown, Baltimore, and Washington. Some of the younger adults, couples and single persons too, also enjoy the social club. The Frederick club meets once a month and at times has combined meetings with the social club of Hagerstown.

An important club in Frederick is known as the Francis Scott Key Club and it is affiliated with the American Athletic Association of the Deaf (AAAD). This organization has a special attraction for the younger college trained men who have a keen interest in athletic events. The club sponsors a basketball team of young deaf men which plays in deaf leagues and tournaments. The AAAD sponsors a national basketball tournament annually.

⁴It was found that in the New York Study "67 per cent" of the study population "were either present or former members of deaf fraternal organizations" and "80 per cent reported socializing on at least a once a week basis." See George S. Baroff in Rainer and Others; quotation on p. 113.

There is also the Maryland Association for the Deaf (MAD) which includes all of the deaf in Maryland. Then there is the National Fraternal Society of the Deaf (NFSD) which has an insurance lodge in every large city of the United States. Some of the Frederick deaf belong to the Baltimore lodge.

In addition to membership in deaf clubs, some of the deaf also belong to clubs for the hearing, such as the Elks and the Moose. On the other hand about one-third of the deaf adults do not belong to deaf clubs at present and many of this latter group do not belong to any clubs at all.

There are a number of benefits derived by the deaf from their organizations and clubs. Like members of other minority groups, they have learned the importance of gaining a place in the social and economic power structure by means of strong organizations. For some of the members, the clubs provide opportunities for a leadership role, depending on the organizational, social, athletic, and other skills which different individuals may have. Others find recreation and friendship at the social club meetings. The sense of isolation which many feel if they are completely dependent on the hearing world may be overcome by companionship with deaf friends. The ease of communication with the deaf may be a welcome relief for those who work all day with hearing people.

What about the people who do not belong to the deaf clubs and organizations? Are they able to find other satisfactions? Why do they not join the deaf clubs? We do not have complete information on these points but there is enough to suggest that the answers are quite varied. Some belong to a disadvantaged group and do not participate in the organized social life of the deaf because of problems of poverty, rural isolation, or racial isolation. For others, there is no barrier to participation but because of differences of temperament and cultural background, they may find congenial friends in some other way. As individuals, the deaf may be absorbed in professional activities,

intellectual or artistic interests, church services, or community work. A young man may be working long hours to support his family, a young woman may be busy with the care of small children. Some may not have the time or energy for club activities and may prefer more informal recreation with family and friends. Also, the automobile provides an opportunity to travel some distance to visit relatives and friends and hence individuals are not so dependent on local clubs.

The group of non-members then may consist of some people who are suffering from lack of social life and others who are not. The effect on the person depends somewhat on the ease of communication that he has with the hearing, and whether he tends to be more identified emotionally with the deaf or the hearing world. Such factors as degree of deafness, age at onset of deafness, and whether the individual's primary orientation is manual or auditory, may be influential. In other cases the individual simply has not had the opportunity to find companionship with the deaf and has been forced by circumstances to adjust to the hearing world with varying degrees of success.

Family Life

Hearing parents, deaf children

There are 19 deaf children with 35 hearing parents in the study population. Two of the children have the same parents and one child's father is not living in the home. In the case of another child, the parents have separated, but a visit was made to both homes. Except in a few cases, the hearing parents maintain a stable home life. Four of the parents are step-parents but their presence in each case has helped to stabilize the family situation.

There are two families in which the parents are over 45 years of age. The other parents are mostly in the twenties and thirties with a few in the

the early forties. In half of the families, the parents have either two or three children, in two cases the deaf child is an only child, and in the remaining cases the parents have from four to eight children. Two of the deaf children in the study group are siblings. All of the other deaf children have hearing siblings only with the exception of one child with a deaf sibling who has grown up and moved away from Frederick County.

A few of the parents come from large cities but for the most part they are rather evenly divided into two groups, those with a rural background and those with a small-city background. Three of the parents are college trained and eight others are high school graduates. About two-thirds of the parents have not completed high school. For the most part, the hearing parents are able to provide a comfortable home environment and normal supervision for the children. In a few cases the environment is above average and in a few cases it is very poor.

In no case was there a complete rejection of the deaf child because of his handicap. However, there were at least a half dozen cases where the child was neglected for various periods of time because of the personal problems or lack of understanding of the parents. Most of the parents tried very hard to help their children get expert medical care and the best education available. In almost one-third of the cases the parents had moved to the City of Frederick so that the child could attend the MSD. Usually, this move meant considerable expense, effort, or sacrifice on the part of the parents.

Even though most of the parents were quite normal in their concern for the child's welfare, they often made the child's problem more difficult for him by attitudes which were psychologically unhealthy. These attitudes grew out of the emotional reactions of the parents which made it difficult for them to consider the child's problem objectively. From the child's viewpoint the parental treatment may be classified as helpful or unhelpful.

The most helpful parents were those who understood the nature of the child's problem in a realistic way and could make the effort necessary to assist the child to obtain a good education. They realized that the deaf child had to work harder than the hearing child to progress in school and to develop his powers of communication and understanding. A few of the parents learned to sign and finger-spell so that they could communicate more effectively with their children. A number of others were eager to obtain advice from the professional personnel of the school and tried conscientiously to follow the guidance given to them.⁵

The parental treatment which was not helpful was that which was based on unrealistic viewpoints. In several cases, for example, the parents tended to deny the seriousness of the problem. Either they would push the problem out of their minds, or they would expect the child to accomplish wonders by his own efforts alone. Others tended to be overprotective and thus weakened the child in his efforts at self-help. Some of the parents made many mistakes at first but gradually learned how to bring up their deaf child and to treat him in a helpful way.

Some of the parents were not able to give their children the amount of attention they needed because of their own life situation. Perhaps the family was large and both parents had to work hard to care for the family; or perhaps the home environment was disorganized because of social problems such as poverty, unemployment, illegitimacy, and nonsupport. In several cases the home was disturbed at least temporarily by the death of one parent, by the separation of the parents, or by the physical or mental illness of a parent.

The deaf child's relationship with his hearing siblings is also an

⁵In the New York Study population in "only 12 per cent of hearing families with a deaf child does anyone other than the child learn to use manual communication." See, K.Z. Altshuler, "Sexual Patterns and Family Relationships" in Rainer and Others, pp. 92-112; quotation on p. 112.

important matter. Occasionally, the parents made the mistake of forcing the deaf child to compete with his hearing sibs for parental affection. On the other hand, a few parents gave their deaf child so much attention that they tended to neglect their hearing children. Fortunately, these relationships are not too difficult for average parents to manage, if they have some professional guidance. Often the hearing sibs were helpful to the deaf child as they could assist him in developing speech and language patterns. Some learned to communicate with the child better than the busy parents and took a special interest in the deaf child's welfare. This was more apt to be the case where the hearing sib was older than the deaf child.

The education of the deaf child and the training which he receives for his future life are matters of concern to all the parents. In no case did the interviewers find a parent who did not have some appreciation of the benefits the child received at MSD. On the other hand, some of the parents tended to rely too much on the school and did not cooperate as fully for the child's success as the school desired. Here the question might be raised: what can the school do for the child and what must the parents do to cooperate with the school?

The school provides skillful evaluation of the child's capabilities and intelligent understanding of him as a whole person, physically, mentally, and emotionally. Each child's hearing and communication problems receive careful and expert attention and the most competent methods of audiometry are routinely used. By means of group amplification and individual hearing aids, where called for, any amount of hearing which the child has can be used to help his language development or to give him an auditory signal for mental alertness.

Another benefit provided by the school is a staff of well-trained teachers, both hearing and deaf. These teachers must be willing to work very hard to help the child overcome his academic handicaps. They must also know

how to use the latest teaching aids devised to help the deaf child. The hearing teachers can contribute much to the child's speech development and language work. The deaf teachers can bring the subject matter to life for the child by dramatic use of the simultaneous (speech and manual) method of communication. The deaf teacher can serve as a role model for the deaf child as he grows into adolescence and the hearing teacher can help the child gain social poise in the hearing world. Thus the interaction of the deaf and hearing teachers can bring many advantages to the child.

The school can also give the child a structured environment. This is important to deaf children, who may arrive at the school in a state of mental confusion because of an environment where they did not understand clearly what was expected of them. The child who is confused or who is out of touch with social reality because of lack of communication needs to have a great deal of repetition and systematic training in his environment until he begins to feel secure and at ease with his teachers and fellow students.

An organized social life is another benefit provided by the school. Here the child can enjoy the companionship of other deaf children and have a chance to overcome his feelings of being strange or different which he may receive from exclusive contact with hearing people. An organized environment also provides for the development of talents and skills and the stimulation of creative imagination. In addition to his academic work, the child has the chance to learn various vocational subjects, to take part in athletic events, to develop an interest in art and literature. In the clubs which he shares with his deaf friends, the child can develop a feeling of belonging to an in-group of his own, where he has a "we-feeling" enhanced by his own language, jokes, and the dramatic acting out of his emotions. In this way he can gain courage and warmth from the group to help him face the difficulties of the hearing world with self-confidence. This group morale and social reinforce-

ment are especially important for adolescent boys and girls.

What can the parents do to help the school in its program of development which means so much to each child? It is important for the parents to get the child into the proper school as soon as possible. Sometimes there is a delay because of difficulties in obtaining a satisfactory diagnosis of the child's problem. A deaf child who has not been properly trained may appear to be mentally retarded. Sometimes the parents may place the child in an ordinary classroom in the hope that somehow the child will progress normally despite his hearing problem. This is usually a waste of valuable time and may also cause the child to lose self-confidence. In some cases the parents may find it necessary to move around from one place to another and the child is placed in a number of different schools. This is hard enough for hearing children but it may be quite devastating to the deaf child.

After the child has been placed in the school, it is very important that he attend regularly. In several cases in the study group the child failed to receive the benefits he needed because of frequent absences which caused him to fall far behind his class and his age group. It is also frustrating to the teachers when they try hard to help the child and the parents do not do their part.

Another important point is that the parents must give the child emotional support. No one can take the place of the parents in giving the child the emotional stimulation to try hard and do his best work in school. The child who is emotionally deprived may lose interest in his school work and fail to take advantage of the opportunities provided for him. In some cases the parents gave the child good general emotional support but failed to stimulate his best effort in academic work. In several other cases, the child received very little encouragement from his family.

The child who goes back and forth from home to school each day needs

some parental help in making the transition from the hearing to the deaf world and from the deaf to the hearing world more easily. For the boarding students the same is true when they go home for the weekends and for the holidays. In all cases the parents need to reinforce the work of the school during the long summer vacation when the child can easily forget the things he has learned during the school year.

Deaf parents, hearing children

There are 42 people in the study population who are now married or who have been married at some time. This number includes 15 deaf couples, 5 individuals with hearing spouses, and 7 who are widowed, separated, or divorced.⁶ Six people reported they had no children and the others, excluding one case on which there is no information, reported a total of 50 living children, 47 hearing and 3 deaf.⁷

About half of the married people were in their twenties or thirties, and the other half were all over forty, eight being in the over-sixty category. The children also fall into a younger group and an older group. The younger consists of preschool children and school children who have not yet completed their education. The older group is made up of those who have finished school, some of whom are still in the parental home and others who have moved away to homes of their own. Regarding the adjustment of the younger children, the primary source of information was the parents themselves. The older children living in the home could be included in the interview and could give their own recollections of childhood experiences.

⁶Justman and Moskowitz, pp. 4-15, report that in their population "three-fourths of the graduates have married a deaf person".

⁷"Almost 10 per cent of all children born to our deaf subjects are themselves deaf . . ." John D. Rainer and W. E. Deming in Rainer and Others; quotation on p. 19.

Deaf parents of course have many problems which are similar to those of hearing parents. A husband may be out of work temporarily, a wife may have a miscarriage, a small child may be difficult to manage at times, a teenager may be somewhat unruly, but all of these problems are commonly encountered by married people. There is no clear evidence that deaf parents have a higher percentage of these problems than other parents.

However, there is one problem that deaf parents have to work out which hearing parents do not have. They have to solve the problem of how to help their children adapt to the hearing world. The problem varies in intensity depending on various factors: the degree of deafness of the parents and their facility in communication; the intelligence and education of the parents; the economic situation and how much time the employed parents can give the child; the presence of hearing members of the wider family to assist the deaf parents; and the willingness of hearing friends or neighbors to be helpful.

Information about the adjustment of the younger children is important to the study because the parents have these children right before their eyes at the present time and the details of child care are more readily available. Several mothers pointed out that they have to be especially vigilant in watching the young preschool child because if the child should fall or injure himself they could not hear his cries. Other parents felt that their children were exceptionally smart in that they could not only speak well but could also sign and finger-spell. Several mentioned special talents and abilities they had noted in their children. On the other hand neighbors and other observers commented on several occasions that they had noticed a few examples of misbehavior by the younger children. These however were all comparatively minor disciplinary problems which could no doubt be worked out with a little time and effort on the part of the parents.

The real test of the child's adjustment usually comes to the fore when

he enters school for the first time. For the most part the school children seem to be getting along well. However, there have been several cases where the child was not properly prepared for school entrance, and these serve as an illustration of what can happen if the parents do not make provisions for the child to have contact with hearing children and to develop normal speech. The hearing child who is unable to communicate except through signs will have a most difficult adjustment to make when he goes to school. He may become very disturbed emotionally and find the school a confusing and even terrifying place. Unless the teacher is very understanding and helpful the child may suffer greatly.

The younger children in the study population are fortunate in that the majority of the parents are above average educationally and are able to provide for their children's needs. There were only a few cases in which the parents were not alert to the special needs of their children, or were temporarily unable to meet a problem. Hearing relatives and friends were helpful to some parents. In other cases, the parents have excellent speech themselves or they can provide nursery school training or other contacts with hearing children.

Information about the adjustment of the older children is important to the study because these children provide a concrete demonstration of the success or lack of success that the deaf parents have had. Most of these grown children are now employed in the hearing world and many have married and have families of their own. From the adjustment of the older children we can also gain some perspective on the problems of the younger children.

The parents themselves did not mention any problems which they felt to be insuperable. Of course they may have forgotten some of the problems with the passage of time. But it is significant that in no case did the parents state that the problems involved in rearing a family were more than they could manage. There were three cases in which the home was broken by divorce and the

children were not living with the parents. However, the parents themselves felt that the children were getting along all right.

Educationally, the achievement of the older hearing children is better on the average than that of their parents, as one would expect. However, some dropped out of school before they completed high school. Others have finished high school and a few have gone on to take advanced work in college or graduate school. The employment of the older children ranges from the more or less well-paid average jobs which are available in the community to a minority of positions which imply above-average success in the business or professional world. As to marriage success, again there is variation. Some have stable marriages and well-established homes. Other marriages are more recent and it is too soon to know how well they will work out.

In regard to the communication problem, it was generally stated by the older group of deaf parents that at least one parent had good speech, or that hearing relatives and friends helped the family. In a number of cases, older children living in the parental home served as interpreters for parents whose speech was poor. These children were able to sign and finger-spell very well and thus they served as an intimate link with the hearing world for the parents. In a few cases the children felt that their parents' deafness had made some problems for them. In other cases, the children took a special interest in the deaf community and felt that their own personal knowledge gave them an advantage.

Deaf parents, deaf children

The present study population is an atypical population in that it does not yield a representative sample of deaf parents with deaf children. There were only two cases in which the deaf parents of the study population had any deaf children. In one case the deaf parent had three hearing children and one

deaf child, and in the other case, the parent had two deaf children and one hearing child. In neither case was much information available. The children had grown up and were apparently making good adjustments.

Supplementary information obtained by talking with various people interested in the education of the deaf indicates that deaf children of deaf parents have certain advantages over deaf children of hearing parents. For one thing the child's emotional adjustment tends to be better. For another, the communication between the parents and children is so much better that the child is more informed about what is going on and does not suffer from the type of mental confusion that some deaf children of hearing parents have to endure.⁸ A possible disadvantage of deaf children of deaf parents is that in some cases the parents do not make use of improvements in hearing aids to assist children who have some degree of response to sound.

The subject is one of considerable interest and should be followed up as soon as a representative sample can be obtained.

Individual Adjustment

Earning a living

The fact was mentioned above, in the discussion of socio-economic class, that 54 of the 61 deaf adults were employed and that the 7 unemployed were out of work on account of some handicap other than deafness or, in one case, because the man in question was taking further training. One's first impression then, is that the deaf are a responsible group who take the business of earning

⁸In this connection it is interesting to note the finding of the New York study: "In families with both deaf and hearing children, deaf parents were found to have more problems of control and obedience with hearing children than with deaf ones. Apparently, the deaf approach their deaf children with less uncertainty, making fewer demands of them and having a more realistic understanding of their potentials and limitations." Franz J. Kallmann, "Main Findings and Some Projections" in, Rainer and Others, Family and Mental Health Problems of the Deaf. pp. 234-48. Quotation on p. 240.

a living seriously. They are anything but shiftless. The impression is strengthened when one examines case histories in detail; for it seems quite clear that our study group average rather high in occupational status. Twelve (nine men and three women) are teachers at MSD. On the other hand, there were very few low-status jobs. There was one janitor, one hotel kitchen helper, and one maid. One woman was recorded as having "seasonal work in canning factories." Three men were listed as farm helpers, but they worked on their own family farms and this fact implies a certain independence. One woman, also on a family farm, occupied herself with "house and farm work" there.

Among the nonprofessional group, the most satisfactory jobs were probably those of the four men working in the printing trades. There was also one draftsman. Two men were self-employed, owning respectively a shoe-repair business and a newspaper and periodical store. Among those holding more routine jobs were at least six who could be classified as machine operators. Examples of miscellaneous occupations were a clerk in the bookkeeping section of a bank, a meat cutter, and a body-and-fender man in an automotive shop.

The information summarized in the preceding paragraphs illustrates certain generalizations often made concerning the occupations of the deaf. One is that among the professions the most popular one is that of the teacher in the school for the deaf. Another is that among skilled workers a disproportionate number of the deaf are found in the printing trades. It is easy to see why these occupations should be popular with the deaf; but some consider it unfortunate that the deaf do not explore a wider variety of professions and skilled trades respectively. Outside the skilled trades and the professions our data do not show great concentration in particular occupations except that the deaf tend to work at rather routine trades, involving more or less repetitive work. This is understandable because, if a job involves flexibility it also involves the need of understanding instructions--an area in which the deaf

are obviously handicapped.⁹

More specific information is available about the 11 deaf employees of the 23 manufacturing companies covered in the special survey of manufacturers already mentioned. The following generalizations were found to be applicable to this study group: (1) All the employees worked in production areas, rather than in offices. (2) Only two were skilled workers. There were no unskilled. Thus semiskilled work was characteristic of the group. (3) No deaf were employed by the heavy industries surveyed; a reason given for this fact was that the deaf could not safely be employed around heavy machinery where they could not be warned of danger by auditory cues. (4) Companies not hiring the deaf tended to underrate their abilities. (5) Even companies hiring the deaf had little detailed information about them and did not exchange information with other companies also hiring them. (6) No special programs were in existence to help the deaf overcome their special occupational handicap. (7) Generally speaking, the officials interviewed expressed satisfaction with their experience with the deaf as employees and paid them on the same scale as hearing persons.

Shopping

The fact has been mentioned already that, although the vast majority of Frederick County merchants had deaf customers, very few had ever employed a deaf person. Both facts are understandable. Deaf persons have approximately the same needs as hearing persons and may be expected to shop at the same stores. On the other hand, selling, the chief activity of store employees, is an activity in which communication difficulties are a severe handicap.

Somewhat more than half the merchants who furnished information on the

⁹On the general topic, see, Anders S. Lunde and Stanley K. Bigman, Occupational Conditions Among the Deaf (Washington: Gallaudet College, 1959).

topic stated that they had deaf customers at least once a month; more than a quarter had deaf customers weekly or more often. Dealing with the deaf, then, is a not unusual activity of the merchants. By far the most common method of intercommunication between store personnel and deaf customers was writing; but a good many other methods were used at least occasionally, including speech, gestures, conventional signs, finger spelling, and various combinations of these.

Merchants were asked a number of opinion questions about the deaf in their shopping activities. A good many merchants found these questions hard to answer because their personal experience with the deaf was too limited to permit broad generalizations. However, what consensus there was tended to indicate that the deaf are somewhat more friendly than the hearing, that they are somewhat easier to please, are somewhat wiser spenders, and possibly a bit more sensitive. About a third of the merchants believed that store personnel treated the deaf with more consideration than hearing customers.

The question was raised whether there might be some relationship between the responses given to different questions. Do those who respond in a certain way to one question tend to respond in some particular way to other questions? To analyze this problem the 1620 computer was programmed to make 24 contingency tables comparing responses to 24 pairs of questions. These were prepared for chi-square analysis by omitting rows or columns with zero frequencies and by combining rows or columns with low frequencies. Then the 1620 was programmed to calculate chi-squares for the 24 contingency tables and to calculate also the corresponding probabilities. The relations between answers for the following six pairs of questions were found to be significant at the .05 level or better:

Friendliness of deaf customers	. . . . .	Ease or difficulty in pleasing deaf
Type of ownership (individual, corporation, etc.)	. . . . .	Breadth of business (local, national, state-wide, etc.)

Type of ownership	Sensitivity of the deaf
Breadth of business	Treatment of deaf by store personnel
Friendliness of deaf customers	Wisdom of deaf as spenders
Ease or difficulty in pleasing deaf	Cash or credit

Some of the above results merely demonstrate what one would expect.

Thus it is no surprise to learn that nation-wide businesses are more likely to be owned by corporations, whereas merely local businesses are more likely to be individually owned. Neither is it surprising to find that merchants tended to give the same ratings, high or low, on the questions dealing with friendliness of their deaf customers on the one hand, and with ease or difficulty in pleasing the deaf and with their wisdom as spenders on the other. Answers to these latter questions probably merely reflect the respondents' general attitude toward the deaf and this attitude is likely to be either favorable or unfavorable across the board.

The question designated above as "Cash or credit" asked whether the deaf were more likely to buy on a cash or credit basis, and, in the latter case, what sort of credit risks they were. The results seem to show that the merchants who found the deaf easy to please also found them better credit risks. Perhaps this is merely another example of the halo effect, like the two last relations discussed in the preceding paragraph.

Results on the two remaining pairs of questions are a bit more challenging. Proprietors of individually owned stores tended to believe that the deaf are more sensitive than hearing people; and personnel in locally owned stores were thought to have special attitudes to deaf customers. The relations discovered were not strong. (P was .028 and .046 in the two cases.) However, it is conceivable that personnel in local and in individually owned stores are a bit closer to their customers, a bit more perceptive, and therefore a bit more conscious of the problems of the deaf.

Health problems

Preliminary findings. People who work with the deaf are exceedingly concerned with the problems of their physical and mental health. Some areas of major concern are:

(1) Lack of education by the medical and paramedical professions, especially in the areas of promotion of health and prevention of disease.

(2) The emotional health problems of the deaf, for example: (a) Who prepares the deaf child for the usual surgical procedures such as a tonsillectomy and adenoidectomy? (b) Who prepares the deaf child for the trauma associated with repeated evaluations in clinic situations, such as audiometric tests? (c) Who prepares the young married girl for the problems of pregnancy and childbirth?

There is obviously a very great need for medical assistance, but the teachers of the deaf do not feel that this help is being given in sufficient quantity to the deaf population. There is also grave concern about the quality of the help being given.

The medical and paramedical professions on the whole do not view the problem as gravely as do their associates in the teaching profession. There seem to be several subgroups within each group in the health professions.

Physicians. Group I feels that the deaf have problems intensified by the handicap. These physicians are attempting to work with the deaf toward a solution of these problems. This group is composed of a small number of physicians who have many of the deaf families under their care. They believe the deaf have need of a concentrated kind of attention. This attention due to the handicap takes much more time than the same problem would take with a hearing patient. However, in spite of their dedication to the interests of the deaf, these physicians do not advertise their policies. Nevertheless their deaf patients pass the information along to other deaf persons. As a

result we have some physicians carrying as many as 15 families while certain other physicians never have a deaf patient on their rolls. Some of the physicians in the second group cover for the favored physicians on their days off.

Group II feels that the deaf have specific health problems which call for more time than the physician ordinarily gives to certain kinds of patients with specific complaints. These physicians feel they do not have this time to spare. As a result they simply avoid the deaf patients. This was expressed very well by one physician who stated that it was simply impossible to work with them. It is worthy of note that this was a psychiatrist who felt that verbal communication was an absolute in his area.

Group III acknowledges that the deaf have health problems. These problems are no different from those of the ordinary hearing population. It takes about the same time or perhaps about five minutes more to deal with these patients. They may have one or even two patients who are deaf in their case load.

Group IV does not see that the deaf have any health problems and do not carry any on their rolls.

Nurses. The nurses seem to fall into one group; however, they divide the patients who are deaf into two groups. These are:

(1) The cooperative or good patient. These patients are those who have been prepared for hospitalization by the physician, the family, or perhaps some one from MSD. As a result of this preparation the patient is not troublesome. He does not require extra work and hence is referred to as a good patient.

(2) The uncooperative patient. This is one who, usually due to lack of preparation, does not understand what is going on. He is fearful, seeks attention, and as a result gives the nurse more work. He interferes with the usual order of things on each tour of duty.

In general, the nurses interviewed used the mechanism of "denial" in referring to the deaf patients. They are no different from anyone else (understood is that the physician has prepared them or someone else is staying with them to interpret). It was interesting to note that no nurse felt it was her responsibility to prepare the deaf patient for the usual and the unusual hospital routine. No nurse felt it was her place to disrupt her usual routine to assist the deaf patient to work through his anxiety. The stock answer was "That's the doctor's job".

Reference to nurses in the above material refers to those nurses who work in Frederick Memorial Hospital. The public health nurses are less familiar with the health problems of the deaf. This is due to the fact that none of the deaf in the County are on the public health rolls. If they have problems, they are taken care of privately rather than through public assistance in the health areas.

Dentists. The dentist interviewed did not see the need for great concern. It was his opinion that there was little conversation necessary in the dentist's office. Necessary communication could be limited to gestures and grunts. He felt the dental care of the deaf in the community was adequate.

General considerations. In particular reference to the individual adjustment of the deaf person the problems of health are not expressed as major problems. The deaf teachers interviewed expressed the opinion that the health of the deaf individual is usually better than that of the hearing person. They attribute this to the fact that most of the deaf are at some time enrolled in a school for the deaf. These schools usually conduct sound health programs. They require medical as well as dental supervision. Because of the emphasis on health in the school the student usually continues a sound health regimen. He may be inclined to seek medical help for a problem long before a hearing person would seek help for the same type of problem. This may be due to many

factors, chief among them being anxiety due to the limited health knowledge in relation to illness and treatment of minor disturbances.

Problems in the health area. These certainly exist in the following areas: (1) Selection of a physician. (2) Diagnosis, treatment, and follow-up care. (3) Communication with health personnel during and after illness, which involves (a) accurate interpretation of chief complaint, (b) sufficient understanding of prescribed treatment, and (c) interaction with nurses and auxiliary personnel in the hospital setting. (4) Expression and interpretation of symptoms, physical, mental, or both.

In selecting a physician, the deaf individuals looked for someone who would understand them. It did not seem to be merely a communication problem, but rather a problem in human relationships. One deaf teacher expressed the situation in these words: "We go to him because he sees us first as human beings and then as deaf."

In this community there seemed to be little interest among the majority of health personnel in learning ways and means of communicating with the deaf. Even those physicians who were appointed by the state to give health services to the deaf had not learned methods of manual communication. However, a local physician who carries about 15 deaf families in his case load expressed an interest in sign language and had developed some beginning skill in it. This physician is one to whom deaf families refer other deaf families. Consideration for the deaf individual and concern for his human dignity should be given more attention by physicians who come into contact with the deaf.

Diagnosis, treatment, and follow-up care present problems for many reasons. The problem of time is a crucial one. History-taking is time-consuming at best. When communication difficulties are present the time needed to obtain this history is increased. Some physicians estimated that it took three times as long to get a history from a deaf patient as from a hearing patient. This

causes modification of schedules and the amount of fees for the day. Communication difficulties also slow up the giving of instructions regarding treatment and follow-up care.

The problem of communication with nursing personnel at the hospital is a serious one. Anxieties engendered by the hospital system are intensified by the inability to communicate. This intensification can result in bizarre behavior, lack of cooperation with hospital rules and regulations, and frequently much misunderstanding between the deaf individual and hospital personnel. This, in turn, can adversely influence the deaf individual's response to the need for health services.

The expression of symptoms by the deaf and their interpretation by hearing people constitute a problem area. An example is the fact that hearing teachers quite often interpret symptoms as indications of very serious problems. This may or may not be so. At this time it seems that more data are needed before firm conclusions can be drawn.

Communication is one of the great problems in dealing with the health needs of the deaf. Health personnel need to learn to communicate with them. An understanding of the deaf individual as a normal human being also needs to be emphasized.

Lawbreaking and illegitimacy

In the entire population of 80 deaf persons there was no reported case of any arrest for lawbreaking. This is a creditable record. It was true also that among all the children in the study group now at MSD there were no cases of juvenile delinquency. There were minor behavior problems occasionally, especially among the teenagers, but nothing serious enough to warrant appearance in a juvenile court.

Perhaps some of the credit for the good record of the deaf, children and

adults, is due to the type of training received in residential schools for the deaf. In this controlled environment, there is a planned emphasis on good citizenship. Also, the children are spared the sort of temptation which they meet in city slums. The teachers have rather intimate contact with their pupils. There is a good deal of informal counseling. All in all, it does not seem to be too much to say that the schools do a rather exceptional job in training for good citizenship. Among the 61 adults in the study population, all but 7 attended deaf schools; another 7 had attended both deaf and hearing schools. The remainder attended deaf schools only. Thus the great majority of the deaf had experienced the special environment characteristic of schools for the deaf.

The picture is somewhat different for the problem of illegitimacy. There were a half dozen cases where either illegitimate children were born to deaf women or else the women were known to the police for suspicious behavior or for going with bad company. It is perhaps significant that generally it was a matter of hearing men taking advantage of the deaf girl. Usually some other factor than deafness was involved in the girl's case, such as social isolation, mental retardation, or lower-class social environment. The pattern in these few cases was that of a rather young woman, seeking some social life and companionship, who evaded the watchfulness of the family group, and who thereby gained a bad reputation or became an unmarried mother. In every case the illegitimacy was found to be a problem which had occurred only once for the deaf individual involved.

Multiple handicaps

When deafness is complicated by other handicaps, the problem of communication, or of making a good school or job adjustment, becomes more difficult. About one-quarter of the deaf population had other disabilities which were

serious enough to be brought to the attention of the interviewers.

In several cases there were visual defects. These made it difficult to read lips and to follow the signs and finger spelling of the interviewer in two cases. In one case job adjustment was affected and in another, school adjustment was affected to some degree.

In several other cases, individuals were known to be suffering from a disease of the central nervous system such as epilepsy or cerebral palsy. In each case job adjustment or school adjustment suffered somewhat.

There were at least a dozen cases of mental illness or mental retardation. In two cases the individuals were so ill they had to be hospitalized. In two other cases the individuals were known to be seriously retarded mentally, and could be classified as feebleminded. Others were retarded as far as performance was concerned but the reasons for their poor performance were not entirely clear.

Various other disabilities were mentioned to the interviewers, such as heart disease, arthritis, kidney disease, and anemia. In several cases the individual's adjustment was seriously affected, but for the most part the people involved managed to carry on successfully in spite of the disability.

Not included here are various minor illnesses which may cause children to miss time at school. However, it might be pointed out that it is a serious matter for a deaf child to miss school frequently. He may never be able to catch up with his class if he is absent too many times.

About half of the study population reported that their deafness was due to disease or to injury at birth. The possible after-effects of these causes do not come within the scope of the present discussion.

Isolation

Ordinarily, married people do not have the same type of problem regarding isolation as the unmarried. The deaf parents who live with their spouses and

members of the family group have some protection against the extreme types of social isolation which may be encountered by some of the single people. It is only in cases where the home has been broken by death or separation that the married person may have to live alone or with hearing relatives.

Ten deaf adults were found to be living alone, mostly in rented rooms or apartments. Six were unmarried and four were widowed, separated, or divorced. The group was split in two by age differences, half being in the 20-30 year age category and the other half in the over-50 age group. The present situation is probably temporary for the younger half of the group, since most of them are likely to marry. In fact, two were already engaged at the time of the interview. The younger half also has a more active social life than the older half of the group. All of the younger people belong to deaf clubs and in several cases they mentioned that they did not have to depend entirely on Frederick as they could travel to Baltimore and Washington as well as other nearby cities. The older people have fewer social contacts, although two of them mentioned deaf friends and more or less frequent contacts with family members. The others seemed to be chiefly dependent on the hearing community for friends and social life.

Twelve deaf adults were living in the homes of hearing relatives. Most frequently, the adult was still living in the parental home. In other cases they were living with aunts, grandparents, married sisters, and in the case of two married people, with their daughters. Seven of these adults were under 40 years of age and five were over 40. Only 2 of these 12 people are presently active members of deaf clubs. Several of the older people are not as active socially as they were at one time because of advancing years, but may keep up an active correspondence with deaf friends or keep in touch with them by other informal means.

Of the entire group of 22 adults mentioned in the two preceding paragraphs,

it seems clear that approximately half are suffering from more than an average amount of social isolation. A few of these live in Frederick City but the majority do not. People living in rural areas have a natural disadvantage in that they must travel some distance to visit with deaf friends. When other problems are added to rural living, such as racial barriers, mental retardation, or an environment which is culturally or economically deprived, then the problem of isolation becomes more acute. In some cases, the deaf person seemed to have no friends at all, either hearing or deaf.

In several cases rural people were able to find satisfaction in church attendance and in active participation in community affairs. Others found genuine friendships with hearing people. But for the most part the rural people were rather dependent on the immediate family for companionship. This usually meant that the major accommodation had to be made by the deaf person. Hearing relatives, no matter how devoted, did not seem to understand the psychological needs or the communication problems of the deaf. The relatives were satisfied to have the deaf person adjust to the means of communication which are most convenient for the hearing. In several cases where speech, lip reading, or writing were impossible for the deaf person, a rather crude system of gestures was employed.

In only a few of the rural cases was the deaf person completely independent economically. Usually the economic welfare of the individual depended somewhat on the state of the family affairs. In some cases the individual's labor was an economic asset to the family and in other cases not. In the problem cases where the individual was unstable or mentally retarded, it was incumbent on the family to provide supervision as well as support. The families did try to do this, but with varying degrees of success. In all cases, whether urban or rural, the behavior problems of deaf individuals in the study population seemed to be directly related to their efforts to achieve a normal

social life. The individuals themselves were social isolates who did not have constructive friendships or normal association with their peers.

IV. RESULTS: THE HEARING

The object of the survey of the hearing was to throw light on two questions: (1) How is the amount of an individual's social contact with the deaf (as measured by Contact Score) related to his known social characteristics? (2) How is the amount of an individual's knowledge of the deaf and deafness (as measured by his Local Knowledge and General Knowledge scores) related to these same known social characteristics?

The importance of these questions is obvious. The case studies made in the course of the survey demonstrated the importance of isolation as a problem among the deaf. Isolation is lack of social contact. Therefore any information which the survey yields about contact between the deaf and the hearing will throw light on a problem which is vital to the deaf. Again, it is clear that any community program to aid the deaf or to cooperate with the deaf in the solution of their own problems presupposes an intelligent understanding of these problems in the general community. Therefore whatever information comes from the survey on the distribution of knowledge about the deaf and deafness in the community will be of vital assistance in social planning.

In the presentation of results it might seem logical to discuss with the reader, one after the other, the survey results relevant to the two questions just proposed. However, methodological considerations impose a different order. The essential problem is to compare test scores and information on social characteristics. The three test scores are quantitative. The information on social characteristics is partly quantitative (for example, age, years of education) and partly qualitative (for example, sex, marital status, occupation).

As will appear presently, different statistical techniques are needed for quantitative-quantitative and for quantitative-qualitative comparisons. We shall therefore discuss these two sorts of comparison, one after the other.

Quantitative-Quantitative Comparisons

The survey interviews yielded three quantitative test scores, namely, Contact, Local Knowledge, and General Knowledge Scores. They also yielded, in quantitative form, information on three social characteristics--age, years of residence in Frederick City or other parts of the County, and years of education. For the analysis of the interrelations of these six variables, the Pearsonian product-moment coefficient of correlation was used.

Three tables of intercorrelations were calculated, for City Stratum I, for City Stratum II, and for County, City Excluded, respectively. These tables are presented in Appendix II, Tables 7, 8, and 9. As the reader can see, all three tables gave quite similar results. City Stratum III was not included because only ten interviews were made in that stratum.

A most important question concerns the statistical "significance" of the correlations displayed in the tables. A correlation coefficient (r) is statistically significant if it is large enough so that it cannot reasonably be explained by chance, that is to say, by sampling errors, by the fact that these particular persons, rather than others, were selected in the sample.

A thorough analysis by means of significance tests was carried out only for City Stratum I, the largest of the interviewee groups. In theory it would have been desirable to carry out similar analyses for the other groups as well. However, since the intercorrelation tables showed quite similar trends everywhere, it was decided to omit these other analyses.

The use of the ordinary Pearsonian product-moment correlation formula for City Stratum is open to a theoretical objection. Its use involves the simpli-

fying assumption that the sample was a simple random sample instead of being, as it actually was, a cluster sample with two stages of subsampling. Although this procedure is not strictly defensible on theoretical grounds, it is our judgment that the assumption does not seriously weaken our conclusions.

Application of significance tests

The significance of the correlation coefficients (r 's) was examined by setting up the null hypothesis that in each case the true r is zero and then determining whether the obtained r is consistent with this hypothesis. This method was used to classify the r 's according to their significance. The statement that a certain r is "significant at the .001 level" is to be interpreted to mean that if the true universe correlation is zero there is less than one chance in a thousand that an r as large as the obtained r would occur purely through the vagaries of chance. In other words, there is less than one chance in a thousand that in a given case the true, or universe, correlation is zero. The classification of correlation coefficients by their significance will now be presented.

Significant at the .001 level: Contact and Local Knowledge, Contact and General Knowledge, Local Knowledge and General Knowledge, Local Knowledge and Age (negative), General Knowledge and Age (negative)

Significant at the .01 level: Contact and Residence

Significant at the .05 level: General Knowledge and Residence (negative)

Not significant at the .05 level: Contact and Age (negative), Contact and Education, Local Knowledge and Residence, General Knowledge and Residence, Local Knowledge and Education.

(Intercorrelations among the three variables, Age, Residence, and Education were not tested for significance because they are irrelevant to the present study.)

Discussion

Conclusions to be drawn from the foregoing may be summarized as follows:

1. Contact, Local Knowledge, and General Knowledge are all interrelated.

This is scarcely surprising. The more contact one has with the deaf the more one might be expected to know about the deaf, both locally and in general; nor is it surprising that the two types of knowledge should themselves be related.

2. Age is negatively correlated with both Local and General Knowledge.

The older generation is less familiar than the younger with the deaf and their problems. One can only speculate why this should be the case. Perhaps it is because the younger generation is better educated, more active in civic affairs, and more intellectually curious.

3. Residence in the locality is negatively correlated with General Knowledge. There is no obvious explanation for the fact that long-time Frederick residents should be less knowledgeable than others about deafness in general. Perhaps it means that long-time residents tend to be older people and, as the preceding paragraph pointed out, the older have less knowledge. In any case, note that the coefficient in question is significant only at the .05 level which is not a high order of significance.

An examination of the correlation tables brings out a further interesting fact. Very many of the r 's, though significant by statistical tests, are rather small. For example, correlations between Contact and, respectively, Local and General Knowledge are only .30 and .24. A partial explanation of the small size of these r 's is the phenomenon called attenuation. This is a spurious lowering of the size of correlations when the variables being correlated are measured by tests of less than perfect reliability. When the reliabilities of the tests in question are known, it is possible to "correct for attenuation," that is, to estimate the probable size of the r 's if the variables had been measured by perfectly reliable tests. For example, the two r 's cited

above would be raised from .30 and .24 to .45 and .37 by the correction formula. However, even after correction for attenuation, correlations between Contact and the two Knowledge scores remain low.

Why does social contact with the deaf teach so little about deafness, the deaf, and their problems? Perhaps the answer is that social contact with the deaf is a very special sort of social contact in that it involves little communication. Very few deaf persons speak and read lips well enough to carry on much conversation with the hearing; and few hearing persons can sign and finger-spell well enough to communicate easily with the deaf. Therefore having a deaf acquaintance or neighbor or fellow employee is not likely to lead to much mutual knowledge or understanding. Thus the personalities of the deaf, their attitudes, their problems, their ambitions, are likely to remain mysteries to hearing persons, even to those who rub shoulders with the deaf.

City Stratum II and the County, City excluded

It has already been remarked that intercorrelations for these groups give results similar to those obtained in City Stratum I. The reader should now examine Tables 8 and 9 in the light of the foregoing discussion to appreciate this fact. For example the observation made above that the correlation between Contact and the two Knowledge Scores is low is confirmed; indeed in Stratum II and the County the r's are even lower. Again, all the correlations between Age and the two Knowledge scores are negative. Again, the strange fact that Residence correlates negatively with General Knowledge is confirmed.

All this emphasizes once more the isolation of the deaf. Contact with them does not lead to knowledge. They are a minority group and, like other minority groups, they suffer. However, their disadvantaged status arises less, it would seem, from their neighbors' prejudice than from their neighbors'

ignorance. Possibly this is one of the major conclusions of our study.

Quantitative-Qualitative Comparisons

The task here is to compare the Contact, Local Knowledge, and General Knowledge Scores of persons belonging in different categories as to race, sex, marital status, birthplace, and occupation. Tables 10-12 in Appendix II give the data separately for City Stratum I, City Stratum II, Total City, and County, City Excluded. Data for City Stratum III were also calculated; but they are not given in the tables, since there were only ten interviews in this group. City Stratum III data are, however, included in the Total City figures. Table 13 gives results for the two Sociality questions in City Stratum I. These will be discussed separately.

The analysis which follows is based on City Stratum I only. It would be desirable to apply the same type of analysis to the other groups; but time for carrying out this analysis was lacking. The statistical methods employed are discussed in Appendix I.

In what follows, "significant" means significant at the 0.05 level, the critical ratio (difference divided by standard error of the difference) being at least 1.960; "very significant" means significant at the 0.01 level, the critical ratio being at least 2.576; and "extremely significant" means significant at the 0.001 level, the critical ratio being at least 3.291.

Sex

Males exceeded females on all three scores; the difference was significant for Contact, and extremely significant for Local Knowledge; it was not quite significant for General Knowledge. It is possible that males have more inter-personal contacts than do females and that this would account for their greater contact with the deaf in particular. This greater contact may, in turn, account

for their greater knowledge.

Race

Whites outscored nonwhites on all the three scores. The differences were very significant for Contact and extremely significant for the other two scores. It is probable that the relative isolation of the nonwhites in Frederick accounts for their fewer contacts with the deaf, and that lesser contact leads to lesser knowledge. Of the 80 deaf in the entire County, only four were nonwhite.

Marital status

First of all, it is probably fair to eliminate the category "separated" from discussion. Only about two per cent of the respondents were in this category and this was too few to yield much of significance. Among the five marital-status categories, the separated scored highest on Contact and next to lowest on the two Knowledge scores. The general trend throughout the test was for those with highest Contact scores to score highest on the two Knowledge scores. The fact that this was not true of the "separated" group is probably due to the unreliability of a too small sample.

The widowed stood out as a group of very low scorers. On all comparisons they were below the single, the married, and the divorced. The significance of these differences (between the widowed and these other groups) is shown in the following table:

	Contact	Local Knowledge	General Knowledge
Single		***	***
Married	***	***	***
Divorced		*	**

* = Significant ** = Very significant *** = Extremely significant

The three remaining categories, single, married, and divorced tended to hang together with roughly equal scores, although the divorced were significantly lower than the other two remaining groups on Local Knowledge. See

Table 11.

In summary: (1) There were too few of the separated to yield significant results. (2) The widowed tended to lag far behind. (3) The three remaining categories scored roughly the same.

Birthplace

Only about 1.4 per cent of the respondents were foreign-born. A sample of this size proved too small to yield much of significance. This category being eliminated from consideration, it was a bit surprising to find that those born in Frederick County outside Frederick City did less well on all comparisons than those born in Frederick City, Other Maryland, or Other U.S. Moreover, the differences between Frederick County, City Excluded, and these other three groups were very significant on the Contact score, and were extremely significant on most of the Knowledge scores. Intercomparisons among the three remaining categories, namely, those born in Frederick City, Other Maryland, and Other U.S. showed no significant differences.

In summary: (1) There were too few foreign-born to yield significant results. (2) Those born in Frederick County (outside the City, of course) did very poorly. (3) There were no significant differences among the remaining categories.

Occupations

Comparisons in this area were a bit complex. Nine occupational classes were distinguished. These could be paired in 36 different ways, each on three scores. This resulted in 108 comparisons for which critical ratios were calculated. Fortunately, however, this mass of data can be reduced with little loss of accuracy to the following generalizations:

1. Differences among the Contact scores of the various groups were rather small. The only difference which could be classified as "very signi-

ficant" was the superiority of the professional and managerial group over the unskilled.

2. The professional and managerial group exceeded all other groups on both Knowledge scores to a significant degree, at least, in all cases. In all except one of the comparisons the difference was "extremely significant."

3. The professional and managerial group being eliminated, the clerical and sales group exceeded all the remaining groups in both Knowledge scores. In three-quarters of the comparisons the superiority was "significant" or better.

4. The professional and managerial group, and the clerical and sales group, having been eliminated, the skilled worker group exceeded all the remaining groups in both Knowledge scores. In half the comparisons the superiority was "significant" or better.

City Stratum I compared with other groups

The most clear-cut results came from the comparison of the two racial groups and the two sexes on the three scores. Whites exceeded nonwhites on all three scores for all groups except for Local Knowledge in City Stratum III. Males scored higher than females on all tests for all groups with three exceptions, namely, Contact in City Stratum II, and in both Local and General Knowledge in the County, City Excluded. Thus, as far as race and sex are concerned, findings in the other groups confirm the findings in City Stratum I.

Results from the analysis of marital status were less definite. The finding in City Stratum I that the widowed tended to lag on all three scores was confirmed for the most part, the chief exception being that in the County, City Excluded, the widowed made the highest, instead of the lowest Contact Score. The finding in City Stratum I that those born in Frederick County outside Frederick City did very poorly on all three tests was only partially

confirmed in the other groups. The analysis of occupational categories among the other groups tended to confirm, in spite of some exceptions, the finding derived from the study of City Stratum I that members of the professional and managerial, the clerical and sales, and the skilled worker groups tended to exceed the other groups on all comparisons. The inconsistencies in the results from the analysis of the scores of the different groups can be pretty well accounted for by the size of their sampling errors. It was for this reason that so many of the comparisons had to be stated cautiously even for the largest group, City Stratum I. The other groups, being smaller, were subject to even larger sampling errors.

Sociality

Table 13 gives two questions which were asked all interviewees, together with the possible answers. The characteristics revealed by these questions were called Sociality I and Sociality II respectively. As the reader can see, the former has to do with one's habits of going out socially and the latter is concerned with habits of receiving visitors in one's home. The interesting point here is the question whether the three scores tend to vary along with Sociality I and II. In other words, do the more sociable persons, as measured by these criteria, tend to have higher Contact, Local Knowledge, and General Knowledge Scores? It is clear from the table that, in any case, there is not a simple linear functional relationship. For example, those in the "three times" category on Sociality II have higher mean scores on General Knowledge than those in either of the two higher categories, "four times" and "five or more times." On the other hand, a positive relationship does exist. On both Sociality criteria and on all three tests those in the highest or "five or more times" category make scores which are higher to a statistically significant degree than those in the lowest or "not at all" category. It is therefore

legitimate to conclude that there is a demonstrable tendency for those with high scores on the three tests to be in the higher Sociality categories as well and that the reverse is true for those with low scores.

V. SUMMARY AND IMPLICATIONS

Summary

Since the focus of the present study was the interaction of the deaf and hearing in Frederick County, both these groups had to be surveyed.

An effort was made to identify all deaf persons living in the County at the time of the study, the deaf being defined as those without usable hearing in the speech range even when assisted by a hearing aid. Eighty such persons were found. It is believed that these eighty include all persons in Frederick County falling under the definition just stated, with the possible exception of some preschool children whose deafness had not been diagnosed and brought to the attention of public authorities. The deaf in the study group were studied by the usual techniques of social casework. These included one or more home visits in each case, the searching of public records, interviews with those in a position to know the subjects, correspondence, information from school records at MSD and other schools, and other available sources. In analyzing this material, it was our effort to learn the deaf persons' adjustment to life in general and especially--this being the focus of the whole study--their interaction with the hearing world.

The hearing residents of Frederick County, aged 18 and over, were studied particularly to learn three quantitative facts--the amount of their contact with the deaf, their knowledge of local conditions among the deaf, and their knowledge of the deaf and deafness in general. To obtain this information four probability samples were drawn, three from three strata of Frederick City and one from the County, Frederick City excepted. Those drawn into the sample

were visited by trained interviewers, using a structured interview schedule. The schedule was constructed in such a way that it yielded scores for the three variables just mentioned, that is to say, a Contact Score, a Local Knowledge Score, and a General Knowledge Score. The schedule also asked for information about the interviewee's social characteristics, such as age, sex, occupation, years of schooling, and so forth. In all, 1113 persons were selected for the sample and of these, 1017 were actually interviewed. Although the tests which gave the three scores were short, the application of standard techniques showed them to be gratifyingly reliable. Data gathered by the interviews were used to study the distribution of contact with the deaf and of knowledge about the deaf and deafness among residents of Frederick County with different social characteristics. Although the sample size was not large enough to permit firm conclusions regarding all the hypotheses suggested during the study, it did yield statistically significant facts about a satisfyingly large proportion of them.

In addition to these two general studies of the deaf and hearing respectively, four special studies were made of deaf-hearing relationships in four special areas: (1) All manufacturing companies in the City of Frederick were visited to learn their policies concerning the employment of the deaf and their experience with such employees, if any. Of the 23 companies surveyed, 7 had a total of 11 deaf employees. For these 11 employees, detailed work histories were compiled. (2) Visits were made to 291 retail stores in the City of Frederick and elsewhere in the County which were judged to include all the County's more important retail outlets. Among those merchants visited, 86.3 per cent could recall having had deaf customers, although only 2.1 per cent ever had deaf employees. A structured interview schedule was used. Thus information was gathered about the problems and practices of the deaf in the significant area of retail shopping. (3) An experienced nurse with an excellent

research background conducted unstructured interviews with key members of Frederick health personnel, including physicians, nurses, one dentist, and one chiropractor. Other persons familiar with health conditions among the local deaf were also interviewed; this included school personnel at MSD. The chief focus of the interviews was the problem of the difficulties which, in the care of the health needs of the deaf, stem from communication handicaps. How do health personnel adjust to the deaf and how do the deaf adjust to them? A considerable mass of material was gathered throwing light on this question.

(4) In the course of the survey, the names of 37 clergymen were found of whose parishes or congregations one or more deaf persons were reported to be members. The principal study of the religious care of the deaf was based on personal interviews with these clergymen. Interviews were unstructured. As in the case of the other studies, the focus here was on the special difficulties due to communication handicaps and the means used to overcome these handicaps.

The different types of surveys just described yielded a far-ranging sort of information about the deaf and hearing communities and the ways in which they interact. The next task was to sift this information in the effort to find valid generalizations about the deaf, the hearing, and their mutual interactions. These will be considered in the following section.

Implications

1. It is clear that the deaf are not a homogeneous group. They show the same variety as do hearing people. Among the deaf, as among the hearing, there are variations in wealth, in intelligence, in education, in personal qualities. Among the deaf, one finds the well-balanced and the neurotic, the ambitious and the apathetic. One finds wide varieties of professions, varieties of marital status, and varieties in almost every conceivable quality.

2. The deaf, however, do have in common a greater or lesser difficulty

in communication. This may be comparatively mild in the case of the very intelligent deaf person who lost his hearing as a teen-ager and who has good ability to read lips. It may be very severe in the case of the slow learner who is congenitally deaf and whose special education has been much delayed.

3. Difficulty in communication handicaps the deaf in many ways. It interferes with family life and this difficulty is likely to be more severe when some members of the deaf person's family are hearing persons. The variety of jobs open to the deaf is limited. His education requires special helps. He meets difficulties in taking care of his medical, as well as spiritual, needs. When deafness is compounded with other handicaps, the situation is likely to be still more complicated. In extreme cases, communication difficulties may reduce the deaf person to a state of almost complete isolation.

4. None of the difficulties faced by the deaf need be considered insuperable. This fact is proved by the many deaf persons who lead useful, satisfying lives as respected members of the community.

5. Successful adjustment by a deaf person demands planning, and this planning must involve the entire community as well as the deaf individual himself. The education of the deaf is a highly specialized form of education in which much progress has been made in recent years, but it is expensive and needs full community cooperation. For the deaf, vocational rehabilitation and vocational placement are specialized techniques, requiring planning. Communication techniques need to be given special attention in planning for the care of the ill deaf, particularly for the mentally ill, as well as in the whole area of health education. The list could be lengthened. However, the general conclusion is quite apparent. Successful adjustment by the deaf does not happen by accident; it results from good individual and community planning.

6. If the hearing community is to participate effectively in planning for the welfare of the deaf, it is obvious that hearing persons must develop

social contacts with the deaf and must have a practical knowledge of deafness and the problems of the deaf, both locally and in general. The sample survey of the hearing population of the entire County made in the course of the present study showed that social contact with the deaf and knowledge about the deaf were quite unevenly distributed. It is possible that insights gained during this survey can be useful in planning. For example, the survey showed what segments of the population were most aware of the problems of the deaf, and what segments were least aware. It showed, in other words, where education was most needed. It showed, also, where to look for intelligent leadership by pointing out the sort of person most likely to have an intelligent appreciation of the problems faced by the deaf.

VI. CONCLUSIONS AND RECOMMENDATIONS

The results thus far presented have been concerned exclusively with the interaction of the deaf and hearing populations of Frederick County, Maryland. It is natural to ask to what extent these results can be generalized and applied to the deaf and hearing in general or at least to the deaf and hearing in the United States.

Actually, it would be hazardous to generalize very much. The 80 deaf studied are too small a group to include examples of all the principal types of deaf persons in the country or of the principal types of social situations in which they live. The County, too, is unrepresentative of the wide variety of communities which the country contains. For example, it contains no large city.

The principal possible contributions of the Frederick study to knowledge about the deaf are two: (1) Certain research techniques were devised, tried out, and evaluated; some are promising tools for future research. (2) Generalizations coming out of the study, though not, as just said, directly applicable elsewhere, can nevertheless suggest useful hypotheses for future studies. If something was found to be true in Frederick, it may be true elsewhere. Ab esse ad posse valet illatio.

Of the two contributions mentioned in the preceding paragraph, one, the research technique, is described elsewhere in this report. The present section will be concerned with the other. That is to say, it will list certain hypotheses and certain unsolved questions suggested by the study. These are offered as possible topics for future research. Indeed, most of them are now being

tested by the Bureau of Social Research in a Baltimore study subsidized in part by the Vocational Rehabilitation Administration. Hypotheses concerning individual adjustment will first be considered; then, hypotheses concerning the deaf community.

Individual Adjustment

1. It seems clear that the deaf accept in a general way the goals of the larger society of which they form a part, but also that there are some exceptions to this rule. There is room for further research concerning these exceptions. For example, are the deaf willing to choose a comparatively modest goal of economic success? Does leadership success have a special meaning for them? Do they have a somewhat different conception of the cultured, well-educated man?

2. What special handicaps hinder the deaf in the attainment of the life-goals which they have chosen? The Frederick study revealed some of the handicaps they encountered in gaining an education, in maintaining a normal family life, in securing a satisfactory job, and in some other areas. However, much more research needs to be carried out in this area.

3. The Frederick study gave a good deal of attention to the interpersonal problems of families of hearing parents with deaf children and of those of deaf parents with hearing children. More research is needed here, and in particular families of deaf parents with deaf children need further study, since the case material on this topic in Frederick was very meager.

4. Some deaf, like some hearing persons, refuse to accept society's standard goals. Among these, in particular, are the criminals. The Frederick study gave no information in this area; for no deaf persons with criminal records were discovered. The characteristics of the criminal deaf therefore remain as a promising area of investigation.

5. Some information on the feeble-minded deaf and the mentally ill deaf was turned up in Frederick, but not enough to permit even modest generalizations. The adjustment of the deaf who suffer from such added handicaps is a research area which deserves attention.

6. The Frederick study emphasized isolation as a special problem of the deaf. It would be interesting to study this problem in a large city. Are the deaf less isolated there since there are more deaf persons with whom to associate? Or are they more isolated on account of the anonymity of big-city life?

7. The special education of the deaf deserves study by sociologists as well as by experts in education. Sociologists will be particularly interested in the effects of different programs of education on the later life-adjustment of pupils. Not only academic education, but also special programs of vocational education, on-the-job training, and training as a part of vocational rehabilitation should be studied. Do these programs fail to bring out the latent vocational skills of the deaf so that these are underutilized with resulting loss to the community and with a low degree of job satisfaction by the deaf themselves?

The Deaf Community

1. A question of prime importance is the correctness of applying the term "community" to the 80 deaf of Frederick County. Do they constitute a community in the technical sociological sense including the possession of "a territorial area, a considerable degree of interpersonal acquaintance and contact, and some special basis of coherence that separates it from neighboring groups"?¹ In some rough sense they doubtless do, and it is in this rough sense that the term "deaf community" has been used in this study. However,

¹Henry P. Fairchild (ed.), Dictionary of Sociology (New York: Philosophical Library, 1944), sub verbo "Community."

there is need of much more research on the sociological characteristics of this community. It will be particularly interesting to study conditions existing in large cities. What communities, subcommunities, social classes, and special-interest groups exist?

2. In Frederick a few deaf persons stood out as leaders among their fellows; but there were too few of them to form a basis for a study of leadership among the deaf. It would be interesting to study the characteristics of a larger group of deaf leaders and in particular to determine whether their personal characteristics were similar to those of leaders in the hearing community or whether, on the other hand, leadership among the deaf demanded some sort of special quality.

3. In Frederick there was no special pattern of residential location characteristic of the deaf group. It would be interesting to study this pattern in a large city. Does the presence of a special church for the deaf, for example, or of a business with special employment opportunities for the deaf cause them to concentrate their homes in a certain area?

4. In Frederick there was some tendency to move from rural farm to rural nonfarm areas, and to urban areas from the latter. It would be interesting to study these trends in a large geographical area. It would also be interesting to learn precisely what factors draw the deaf toward urban areas.

5. Every deaf person must adopt some definite orientation toward the deaf and hearing communities. He may identify closely with one of these communities and reject the other or he may adopt some compromise. This choice of orientation was visible in the Frederick case studies, but much more research is needed on the phenomenon and the personality characteristics of those choosing various orientations.

6. There is a wide range among the deaf in both expressive and receptive communication abilities. The Frederick case studies threw a good deal of light

on the effect of differences in the ability to communicate; but, here again, the study could profitably be pursued with a larger group.

7. One of the special features of the Frederick study was the survey of probability samples of the hearing population as described in this report. The survey yielded answers to certain questions with satisfactory assurance. However certain other questions could be answered only with fair probability because in these cases the sample had to be divided into small subgroups and the small size of these groups resulted in large sampling variances. If the survey could be repeated with a larger sample, this difficulty could be reduced.

APPENDIX I

STATISTICAL METHODS

A great many of the statistical techniques used in the analysis of the survey data were the conventional ones, familiar to every student of statistics. In the application of such formulas the only at all novel feature was the routine use of The Catholic University's IBM 1620 electronic computer, instead of desk calculators, for the solution of all but the simplest problems. The computer was programmed to make complicated tabulations, to calculate means, standard deviations, correlation coefficients, the significance of differences, and to perform other routine statistical tasks.

The only procedures calling for some discussion here are those used in the analysis of certain data yielded by the survey of a probability sample of the hearing population. The sampling design has already been described. See pages 15-18. The statistical methods used will now be described.

City Stratum I

Estimating totals and ratios

Let x_i be some number associated with each of the N individuals in the stratum. We wish to estimate $\sum_{i=1}^N x_i$ and we shall call this estimate \hat{x} .

The first step is the estimation of the totals for block-sides which, as the reader will remember, were the primary sampling units. Let N_b stand for the total number of inhabited dwelling units in block-side b ; let n_b stand for the number of these selected for the sample. Let x_{ab} be the value of x for individual a of block-side b . Let w_a be his within-household weight, that is, the number of persons 18 years and over living in this dwelling unit. Then our estimate of the total for any block-side would be

$$\hat{x}_b = \frac{N_b}{n_b} \sum_{a=1}^{n_b} x_{ab} w_a$$

From each of the selected block-sides it would be possible to make an estimate of the total of x for the entire Stratum I. If M is the total number of block-

sides in Stratum I and if m is the number selected, this estimate would be

$$\hat{x}_b^* = M\hat{x}_b$$

Our actual estimate, \hat{x} , for the total value of x for the entire Stratum I will be the mean of the m possible estimates, that is,

$$\hat{x} = \frac{M}{m} \sum_{b=1}^m \hat{x}_b$$

In a similar fashion other population totals may be estimated. A particularly important one will be \hat{y} , an estimate of the total number of individuals in the population, where $y_i = 1$ for every member of the population.

Given population totals, one can make estimates of ratios between them, such as $r = \hat{x}/\hat{y}$ where the denominator is a population estimate so that r represents a mean such, for example, as the mean Contact Score for the total population. The same technique can be used for estimating mean scores for segments of the total population, say, men's scores and women's scores. However, as can be seen from the next section, variances increase as the size of segments decrease so that the technique becomes less and less sensitive for discovering significant differences. It was for this reason that in the course of this study it was much easier to discover significant differences between, say, men and women than between the widowed and divorced.

Estimating variances

The next task is to estimate $\sigma_{\hat{x}}^2$, the variance of an estimate of a population total. Since this estimated population total is by definition the mean of the m quantities $\hat{x}_b^* = M\hat{x}_b$, the variance of the estimated population total will be the variance of this mean, which is given by the formula,

$$\sigma_{\hat{x}}^2 = \frac{M-m}{M-1} \cdot M^2 \cdot \frac{1}{m-1} \cdot \frac{1}{m^2} \left[m \sum \hat{x}_b^2 - \left(\sum \hat{x}_b \right)^2 \right]$$

For the rel-variances of ratios such as $r = \hat{x}/\hat{y}$, the formula used is

$$\frac{\sigma_r^2}{r^2} = \frac{\sigma_{\hat{x}}^2}{\hat{x}^2} + \frac{\sigma_{\hat{y}}^2}{\hat{y}^2} - 2\rho_{\hat{x}\hat{y}} \frac{\sigma_{\hat{x}}}{\hat{x}} \cdot \frac{\sigma_{\hat{y}}}{\hat{y}}$$

where

$$\rho_{\hat{x}\hat{y}} = \frac{\sum_{b=1}^m (\hat{x}_b - \bar{\hat{x}}_b) (\hat{y}_b - \bar{\hat{y}}_b)}{(m-1)\sigma_{\hat{x}}\sigma_{\hat{y}}}$$

City Strata II and III

The design for Stratum II is simple cluster sampling without subsampling. The total for variable x for each household is estimated by the formula,

$$\hat{x}_h = x_h \cdot w_h$$

where \hat{x}_h is the estimated total for household h ; x_h the value of the variable for the interviewee selected; and w_h , his within-household weight which is the number of persons 18 years and over in the household.

The Stratum II total of x can be estimated from \hat{x}_h as follows

$$\hat{x}_h^* = M' \hat{x}_h$$

where M' is the total households in Stratum II. Our estimate of the stratum total will be the average of all these. Let us denote by m' the number of households selected in Stratum II. Then our actual estimate of the stratum total will be,

$$\hat{x}' = \frac{M'}{m'} \sum_{h=1}^{m'} \hat{x}_h$$

By reasoning similar to that applying to Stratum I, the variance of this quantity would be

$$\sigma_{\hat{x}'}^2 = \frac{M'-m'}{M'-1} M'^2 \frac{1}{m'-1} \frac{1}{m'^2} \left[m' \sum_{h=1}^{m'} \hat{x}_h^2 - \left(\sum_{h=1}^{m'} \hat{x}_h \right)^2 \right]$$

The rel-variances, $r' = \hat{x}'/\hat{y}'$ will be calculated by exactly the same formulas as those given above for r , the obvious substitutions of variables having

been made.

In Stratum III the selection was made by a systematic sampling and the formulas for simple random sampling may be used. If m'' individuals out of a total of M'' in the stratum are interviewed, then our estimate of x'' , the total value of x for Stratum III will be \hat{x}'' , the total x of the persons interviewed multiplied by the reciprocal of the sampling fraction, that is,

$$\hat{x}'' = \frac{M''}{m''} \sum_{i=1}^{m''} x_i$$

The formulas for variance and rel-variance in Stratum III will be precisely the same as those used for the other strata, except that actual individual values of x , that is to say values of x_i are to be used instead of values of \hat{x}_b , estimated block totals, or values of \hat{x}_h , estimated household totals.

The County Outside of Frederick City

The sampling design used in this part of the survey was cluster sampling with two-stage subsampling within each selected cluster. It is thus quite similar to the sampling of City Stratum I, except that segments of Enumeration Districts were used where block-sides were used in Stratum I. The similarity of sampling design thus made it legitimate to use the same formulas for this part of the survey as were used in City Stratum I.

Appendix II

SURVEY OF THE HEARING POPULATION

TABLES

TABLE 1

SIZE OF SAMPLE AND NUMBER OF INTERVIEWS

Group	Selected in Sample	Interviewed	Percentage not Interviewed
City, Stratum I	709	660	6.91
II	53	49	7.55
III	12	10	16.67
County, City excluded	339	298	12.09
Total	1,113	1,017	8.63

TABLE 2

POPULATION, AGE 18 AND OVER, ESTIMATED BY SURVEY (1963)
AND BY CENSUS (1960)

Group	Survey Estimates	Census
City	14,228	14,655
County, City excluded	34,572	31,963
Total	48,800	46,618

TABLE 3

CHARACTERISTICS OF POPULATION, AGE 18 AND OVER,
ESTIMATED BY SURVEY (1963) AND BY CENSUS (1960)

Sex				
	Survey		Census	
	Percent Male	Percent Female	Percent Male	Percent Female
City	40.50	59.50	43.51	56.49
County, City excluded	44.88	55.12	50.67	49.33
Total	43.60	56.40	48.42	51.58

Race				
	Survey		Census	
	Percent White	Percent Non-white	Percent White	Percent Non-white
City	92.49	7.51	91.18	8.82
County, City excluded	92.91	7.09	94.93	5.07
Total	92.79	7.21	93.75	6.25

TABLE 4

ESTIMATED PERCENTAGE OF PERSONS IN SPECIFIED CATEGORIES

Category	City Stratum I	City Stratum II	City Stratum III	Total City	County City Excluded
<u>Race</u>					
White	94.5	60.7	100.0	92.5	92.9
Nonwhite	5.5	39.3	. . . . .	7.5	7.1
<u>Sex</u>					
Male	40.7	41.6	. . . . .	40.5	44.9
Female	59.3	58.4	100.0	59.5	55.1
<u>Marital Status</u>					
Single	11.3	18.0	45.0	11.9	9.4
Married	71.3	67.4	. . . . .	70.6	78.0
Divorced	2.3	3.4	. . . . .	2.3	1.9
Widowed	13.1	5.6	11.0	12.7	9.0
Separated	2.0	5.6	. . . . .	2.2	1.4
Priest or Nun . . . . .	. . . . .	. . . . .	44.0	.3	. . . . .
<u>Birthplace</u>					
Frederick City	32.0	25.8	22.0	31.6	5.4
County, City excluded	28.0	27.0	22.0	27.9	62.0
Other Maryland	12.8	12.3	11.0	12.7	10.6
Other USA	25.8	29.3	45.0	26.1	22.0
Foreign	1.4	5.6	. . . . .	1.7	. . . . .
<u>Occupation</u>					
Professional or Managerial	16.3	16.9	33.0	16.4	6.5
Clerical or Sales	13.8	5.6	. . . . .	13.2	5.6
Service	7.9	14.6	. . . . .	8.3	6.8
Agricultural and Kindred	2.2	3.4	. . . . .	2.3	8.2
Skilled	8.4	3.4	. . . . .	8.1	10.7
Semiskilled	7.7	9.0	. . . . .	7.7	8.8
Unskilled	3.3	2.2	11.0	3.3	6.3
Housewife	29.6	34.8	. . . . .	29.7	38.8
Retired	10.8	10.1	11.0	10.7	8.3

TABLE 5

SPEARMAN-BROWN AND GUTTMAN RELIABILITIES OF THREE TESTS
FOR THREE SPECIFIC SAMPLES AND TOTAL COMBINED SAMPLE

Sample	Contact		Local Knowledge		General Knowledge	
	Sp. Brown	Guttman	Sp. Brown	Guttman	Sp. Brown	Guttman
City, Stratum I	.62	.61	.72	.72	.67	.67
City, Stratum II	.77	.76	.52	.51	.69	.69
Total City	.63	.62	.72	.71	.67	.67
County, City excluded	.60	.69	.72	.60	.69	.70

TABLE 6

SPEARMAN-BROWN AND GUTTMAN TEST RELIABILITIES,
CITY, STRATUM I, BY ENUMERATOR

Enumerator	Number of Interviews	Contact		Local Knowledge		General Knowledge	
		Sp. Brown	Guttman	Sp. Brown	Guttman	Sp. Brown	Guttman
A	76	.60	.57	.86	.75	.75	.86
B	117	.65	.64	.73	.68	.68	.73
C	51	.34	.34	.55	.74	.75	.54
D	118	.61	.61	.67	.42	.42	.66
E	105	.66	.64	.68	.68	.68	.65
F	90	.61	.59	.80	.76	.76	.79
G	93	.59	.57	.66	.61	.61	.65

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TABLE 8

INTERCORRELATIONS OF TEST SCORES WITH SPECIFIED QUANTITATIVE CHARACTERISTICS, CITY, STRATUM II

	Contact	Local Knowledge	General Knowledge	Age	Years of Residence	Education
Contact	1.00	.18	.07	.07	.07	.14
Local Knowledge	.18	1.00	.37	- .21	- .01	.37
General Knowledge	.07	.37	1.00	- .45	- .35	.28
Age	.07	- .21	- .45	1.00	.39	.01
Years of Residence	.07	- .01	- .35	.39	1.00	- .29
Education	.14	.37	.28	.01	- .29	1.00

TABLE 9

INTERCORRELATIONS OF TEST SCORES WITH SPECIFIED QUANTITATIVE
CHARACTERISTICS, COUNTY, CITY EXCLUDED

	Contact	Local Knowledge	General Knowledge	Age	Years of Residence	Education
Contact	1.00	.15	.16	.08	.11	- .06
Local Knowledge	.15	1.00	.59	- .32	- .14	.09
General Knowledge	.16	.59	1.00	- .38	- .34	.15
Age	.08	- .32	- .38	1.00	.71	- .07
Years of Residence	.11	- .14	- .34	.71	1.00	- .17
Education	- .06	.09	.15	- .07	- .17	1.00

TABLE 10

MEAN CONTACT SCORES OF SPECIFIED SUBGROUPS

	City Stratum I	City Stratum II	Total City	County, City Excluded
<u>Race</u>				
White	2.5	2.3	2.5	1.5
Nonwhite	1.6	.9	1.4	.8
<u>Sex</u>				
Male	2.6	1.7	2.5	1.5
Female	2.3	1.8	2.3	1.4
<u>Marital Status</u>				
Single	2.3	1.3	2.3	.8
Married	2.5	1.8	2.5	1.5
Divorced	2.6	1.3	2.5	1.7
Widowed	1.9	.6	1.9	1.9
Separated	2.7	3.8	2.9	.9
Priest or Nun . . . . .	. . . . .	. . . . .	.8	. . . . .
<u>Birthplace</u>				
Frederick City	2.6	1.0	2.5	1.1
County, City excluded	2.0	2.2	2.0	1.5
Other Maryland	2.7	1.3	2.6	1.5
Other USA	2.5	2.7	2.5	1.4
Foreign	1.8	. . . . .	1.4	. . . . .
<u>Occupation</u>				
Professional or managerial	2.8	2.9	2.8	1.5
Clerical or sales	2.6	3.4	2.6	1.7
Service	2.4	.8	2.2	1.2
Agricultural and kindred	1.7	3.0	1.8	1.2
Skilled	2.6	2.3	2.6	1.6
Semiskilled	2.6	. . . . .	2.4	1.3
Unskilled	1.6	. . . . .	1.5	1.8
Housewife	2.2	1.9	2.2	1.5
Retired	2.1	1.1	2.0	1.0

TABLE 11

MEAN LOCAL KNOWLEDGE SCORES OF SPECIFIED SUBGROUPS

Group	City Stratum I	City Stratum II	Total City	County, City Excluded
<u>Race</u>				
White	16.5	14.1	16.4	14.2
Nonwhite	13.7	14.6	14.0	12.9
<u>Sex</u>				
Male	17.2	15.0	17.1	13.7
Female	15.7	13.8	15.6	14.5
<u>Marital Status</u>				
Single	17.5	15.7	17.3	14.5
Married	16.9	14.6	16.8	14.1
Divorced	15.1	16.7	15.2	13.9
Widowed	13.1	9.2	13.0	13.2
Separated	14.5	9.8	13.8	18.0
Priest or Nun . . . . .	.....	.....	16.3	.....
<u>Birthplace</u>				
Frederick City	17.0	15.0	16.9	17.9
County, City excluded	15.3	14.0	15.2	14.6
Other Maryland	16.0	13.3	15.8	11.8
Other USA	17.1	15.2	17.0	13.0
Foreign	12.0	9.4	11.5	.....
<u>Occupation</u>				
Professional or managerial	19.7	19.2	19.6	16.7
Clerical or sales	16.8	16.8	16.8	15.1
Service	15.4	13.8	15.2	13.3
Agricultural and kindred	15.8	13.0	15.5	12.3
Skilled	16.4	14.3	16.4	14.7
Semiskilled	15.1	14.8	15.1	14.2
Unskilled	13.1	16.0	13.2	14.0
Housewife	15.6	11.7	15.3	14.4
Retired	15.2	14.0	15.1	12.1

TABLE 12

MEAN GENERAL KNOWLEDGE SCORES OF SPECIFIED SUBGROUPS

Group	City Stratum I	City Stratum II	Total City	County, City Excluded
<u>Race</u>				
White	23.2	23.9	23.2	21.5
Nonwhite	19.4	20.5	19.7	18.5
<u>Sex</u>				
Male	23.3	23.4	23.3	20.9
Female	22.7	21.9	22.7	21.6
<u>Marital Status</u>				
Single	24.1	22.7	24.0	22.7
Married	23.4	23.1	23.4	21.3
Divorced	24.0	21.3	23.8	18.1
Widowed	19.9	16.8	19.8	19.9
Separated	21.1	21.4	21.1	25.7
Priest or Nun . . . . .	. . . . .	. . . . .	23.0	. . . . .
<u>Birthplace</u>				
Frederick City	23.4	22.4	23.3	26.4
County, City excluded	21.7	20.4	21.6	20.7
Other Maryland	22.9	20.8	22.8	20.7
Other USA	23.9	24.9	24.0	22.1
Foreign	22.0	24.8	22.6	. . . . .
<u>Occupation</u>				
Professional or managerial	25.4	26.3	25.4	23.7
Clerical or sales	23.8	24.4	23.8	22.6
Service	22.2	22.5	22.2	19.2
Agricultural and kindred	22.8	16.0	22.2	21.5
Skilled	23.5	24.3	23.5	22.9
Semiskilled	23.3	24.5	23.4	21.8
Unskilled	20.0	21.0	20.0	19.2
Housewife	22.3	21.1	22.2	21.8
Retired	21.1	20.6	21.0	17.9

TABLE 13

ANALYSIS OF SOCIALITY TESTS, CITY, STRATUM I

Response	Mean Contact Score	Mean Local Knowledge Score	Mean General Knowledge Score
<u>How many times have you gone out socially in the past two weeks?</u>			
Not at all	2.2	14.5	20.8
Once	2.3	15.2	21.6
Twice	2.1	15.8	22.8
Three times	2.6	17.0	23.4
Four times	2.3	16.7	23.2
Five or more times	2.6	17.6	24.4
<u>How many times have you had visitors in your home in the past two weeks?</u>			
Not at all	1.8	14.6	21.3
Once	2.2	14.5	21.2
Twice	2.0	15.7	21.9
Three times	2.2	16.7	24.9
Four times	2.8	17.0	23.7
Five or more times	2.7	17.2	23.6