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ABSTRACT

Followed up through interviews and questionnaires were 278 former students, average age 28 years, of two residential schools and one day school for the deaf in Ontario. Data was collected on the degree of hearing loss, use of a hearing aid, educational and occupational history, social integration, methods of communication, and attitudes toward school. A reading and writing test were also administered. Some of the data indicated that most former students has English speaking, normally hearing parents; that 88% of the predominantly prelingually deafened graduates were profoundly deaf; that slightly more than half of the former students had ever used a hearing aid; that school attendance averaged 13.3 years; that employment of deaf men were similar to employment of hearing men, although the rate of advancement and salary raise were lower; that half of the former students (all all over 35 years of age) were married; that 61% of married former students had children; that 18% of the graduates had hearing friends; that speech, writing, and reading skills were low; that 30% of former students used signing, fingerspelling, and total communication; and that day students were more oral than residential students. Approximately half the former students suggested that manual communication be introduced to the school curriculum whereas 21% of the graduates requested higher academic standards. (MC)

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A FOLLOW-UP STUDY OF THE DEAF

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Miss Kay Elgie worked on the design of the study and was responsible for much of the administration. Mr. David Grant did a commendable job in the computer analysis of the data. No doubt the greatest thanks belongs to the three interviewers -- Miss Vicki Kargul, Mr. Gordon Ryall, and Miss Jane Hooey -- whose commitment and communication skills were the cornerstone of the study.

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BACKGROUND OF THE STUDY

Reasons for the Study

The goal of any school system is to help develop people who can function as normal adults in our society. This includes getting married, raising families, working at jobs to support these families, and in general participating in and contributing to Canadian society.

Because of their handicaps, most deaf students in Ontario are separated from their hearing peers and placed in special classes or schools. The staff at these schools and some parents' organizations emphasize the quality of the education that is provided and its value in helping the child achieve a relatively normal life. In contrast to this, organizations of deaf adults in the province have been highly critical of the method of education employed by the schools. In particular, the policy of teaching by the oral method, which was followed by all schools in the province until recently, has come under heavy criticism. One of the problems in evaluating the opinions of these two groups is that, as is human nature, each group tends to attract and listen to people of like opinion. There is no person or group that can truly claim to represent all the deaf in Ontario.

The Ontario Ministry of Education is in the process of reevaluating the goals and methods of education of the deaf. The Ministry is committed to basing its decision partly on the experience and opinions of the adult deaf. One of the purposes of this study is to provide as representative a picture as possible of the adult deaf. Because it is important to study a representative population we chose to seek out aggressively and interview all the former students living within a specific area, Metropolitan Toronto, using interviewers who were prepared to use any method of communication which the interviewees preferred. The interview and testing was extensive and typically took two to three hours -- some took even longer, depending upon the communication skills of the interviewees. We also sent much shorter, written questionnaires to those people who lived elsewhere in the province, too far from Toronto to be interviewed in person.

In addition, we interviewed 24 hearing people who were siblings of the deaf in order to provide a reference population for certain questions.

Why another follow-up study? A number of follow-up studies of deaf students have already been conducted in the U.S. (e.g. Bruce, 1960; Furfey & Harte, 1968; Moores, 1969; Kronenberg & Blake, 1966; Justman & Moskowitz, 1967; Tutt, 1972). However, there is some question as to whether or not these studies are applicable to Canada, both because Canada

has a different population and because Canadian education may be different from that provided in the U.S.

There have been two studies of the adult deaf in Canada. The most extensive survey was conducted in the greater Vancouver area (Doese, 1966). This study includes data from 465 questionnaires and 100 interviews. Here the deaf were defined as those people who could at most hear sounds with a hearing aid, and the hard of hearing were defined as those who could hear conversation with a hearing aid but could not hear conversation without a hearing aid. The data from this study includes responses from both categories of people (62% deaf, 38% hard of hearing). Although they always separated the deaf from the hard of hearing in their analyses of the data, they do not always report the percentages for these two groups. More serious from the point of view of the educator of the deaf is the fact that there are almost no breakdowns by finer categories -- e.g. by age, sex, type of schooling, pre vs postlingually deaf.

Another survey was conducted in Nova Scotia (Blaise, 1969). The report is based on the results of 200 questionnaires which were returned out of about 400 which were sent out, a response rate which calls the representativeness of the sample into question. This study was more relevant to the concerns of educators since about 85% of the names came from a list of graduates of the Interprovincial School for the Deaf. However, the report again gives very few breakdowns by finer categories, and many might feel that Nova Scotia findings, especially on employment and earnings, are not applicable to a prosperous industrial urban area such as Metropolitan Toronto.

Although these two studies briefly covered communication, integration, and education, they were not primarily concerned with these issues, so there is relatively little information that Ontario educators can apply to their current considerations.

Therefore Ontario educators had no systematic body of data to rely on when considering educational policy. It is hoped that this survey will provide them with more systematic and representative information about the deaf than has been previously available.

Information Goals

The purpose of the study was to determine the actual status of the deaf in Ontario. It is thus a picture of what has been achieved in the past, and not necessarily what is being achieved now, or what should be done in the future. Nevertheless, the past is the best indicator of what the future will be, and there is always a great deal to be learned from history, even though a particular history may not be repeated.

To be specific, we would not expect students leaving the schools for the deaf today to be greatly different from the students who left in the past unless the schools or the population being fed into the schools had changed greatly. There have been important changes, most notably improvements in hearing aid technology and the introduction of day students into the Provincial schools. However this study collected data relevant to these two changes, as well as others, and thus should be useful in predicting what effect they may have.

Other changes that may affect a comparison with future students are the greater number of deaf children within Metro from New Canadian families and the increasing number of deaf children with handicaps other than deafness.

In the current deliberation on what form the education of the deaf in Ontario should take, several issues seem to predominate.

One of the major issues in Ontario is to what extent it is reasonable to expect the deaf to participate in the hearing world. Therefore, one of the goals of this study was to determine the extent to which the deaf actually are integrated with the hearing community.

Another major issue concerns methods of communication. Deaf organizations claim that, at least for some deaf, manual communication is the only workable method. (By "manual" methods, here and throughout the study, we refer to the use of signs and/or fingerspelling with or without speech. In this report we do not include gesture or pantomime in this term). Some people reply that deaf organizations do not include the "oral deaf", and thus are not representative of the deaf as a whole. Thus the study asks: How many "oral deaf" are there? To what extent do the deaf use hearing aids, use speech to communicate, etc.?

Another issue concerns the effects of different types of schools. What differences are there between graduates of residential schools and graduates of day schools?

In addition, we obtained detailed school and job histories and information on leisure time activities. We asked the former students how they felt about the schools for the deaf. We also gave each person a reading and writing test, and attempted to discover, through self report, how well they could communicate through speaking, lipreading, and signing.

METHOD

Definition of the Sample

Within Metropolitan Toronto, most children up to the age of 14 attend day school at the Metropolitan Toronto School for the Deaf (Metro). After age 14 they go to special classes at Northern Secondary school, Parkview Secondary School, and Heydon Park Secondary School. Before Metro opened in 1962 and beginning in 1958, deaf children attended Sunnyview School. Before that, from 1924 to 1958, deaf children attended Clinton Street School.

Most children whose parents live outside of Metro are sent to the provincial schools for the deaf at Milton or Belleville. Although at the present time 50% of Milton students and 15% of the students at Belleville are day students, during the period covered by this study most students at these schools lived in residence.

Because the schools in Ottawa, London, and Hamilton were unlikely to have produced many graduates living in Metro Toronto, we did not include students from these schools in the study.

The sample included all students who had attended Sunnyview (some of whom had also been at Clinton), Metro, and Milton, which was established as a senior school in 1966. It also included all former students of Belleville who had left in 1953 or later. 1953 was arbitrarily chosen as a cut-off year in order to keep the size of the sample within manageable proportions.

Altogether, the four schools gave us 878 names of former students with their last known address, phone number, and parents' names (see Table 1). From this list we tried to identify those who were possibly living within Metropolitan Toronto. Our first step in this process was to send letters to the address given us by the school. These letters briefly described the study, and requested the student to fill out and return a form giving his current address, phone number, and days and evenings of the week he was likely to be at home. This was done in September, 1972. Some of these were returned by the students; some were returned by the Post Office as undeliverable; and on the remainder we got no information at all.

We also checked the files of the Canadian Hearing Society (CHS) for more recent addresses. We showed our master list to a variety of people working with the deaf in order to obtain any information they might have on the whereabouts of the former students.

TABLE 1

DISPOSITION OF THE SAMPLE

Disposition	(N)	(n)	%
Eliminated from sample	135		
Still in school		72	
Ill, deceased, institutionalized		17	
Not living in Ontario		46	
		135	
Living outside of Metro	497		
Responded to questionnaire		109	22%
Non-respondents		388	78%
		497	100%
Living in Metro	246		
Interviewed		162	66%
Unable to interview		12	4%
Refusals		36	15%
Unable to locate		36	15%
		246	100%
Total number of students	878		

A large number of students was eliminated by this procedure as not properly being in the sample. In addition, once our interviewers went to work within Toronto itself, additional former students were eliminated. This category of eliminated students comprises 135 individuals who were either still in school, ill, deceased, institutionalized, or no longer living in Ontario (see Table 1).

246 students were identified as possibly living in Metro and being out of school, either through information available from the school or from our other sources. The remaining 497 were believed to be living elsewhere in the Province.

These believed to be living in Metro constitute the primary target for this study, and of this group, 66% (162)

were interviewed, a completion rate which is high for studies of this kind. Three interviews were discarded due to the inadequacy of the communication which our interviewers were able to establish. Thus the major data base of this study is 159 completed interviews. A small group (4%) were not interviewed because, although located and seemingly cooperative, a meeting could not be arranged.

We were unable to locate 36 (15%). An additional 36 (15%) refused to be interviewed. These two groups are of some concern, since they raise the possibility of bias in the sample. It is usually felt that those who are lost to a survey are less successful in life. However, in this case, it is possible that our failure to locate and/or interview a person is a result of his being more fully integrated into the hearing world.

It can be argued that those who refused to be interviewed did so because they were reluctant to be identified with other deaf. However, this does not seem to be the case. Of the 36, only two are believed not to use manual communication; on two, our interviewers were unwilling to make a judgement. This leaves 32 who are known to use manual communication, at least to some extent. We asked our interviewers to judge whether or not these individuals were members of the community of adult deaf. Admittedly this is a subjective judgment, but we believe it has some value in the absence of any other information. Of the 36, 22 were known to associate quite a bit with other deaf adults, 10 were believed to associate with other deaf to some extent, and 10 were believed not to associate with other deaf.

Although they were about the same age as the rest of the sample, men in this group outnumbered women by almost three to one. Our interviewers identified 12 of these individuals as belonging to one of 2 groups of young, deaf men who frequently associate together. It is possible that their refusal was the result of some discussion of the study among themselves, and was a mutual decision of the group.

It can also be argued that those we failed to locate were lost to us because they do not have extensive contacts among other deaf. We have, obviously, much less information about this group. However, of the 36, only 11 were known to CHS or to one of the other workers with adult deaf or to one of the adult deaf associations. To what extent they are truly integrated into the hearing world and to what extent merely isolated from the deaf world is unknown. Therefore it is possible that our sample is unrepresentative of this 15% of the deaf population.

Out of the original sample of 878, the remaining 497 were believed to be living elsewhere in the province. We eventually got what we felt was an accurate address for most

of these, either from the letter they returned or from knowledgeable individuals, or from a recent address in CHS files. With another group we got an address which, although it was not confirmed, was not disconfirmed, i.e., the Post Office did not return our initial contact letter or one of our informants did not indicate they had moved. Finally, there was a group for whom we had no address but who, we felt, were probably not living in Metropolitan Toronto. The breakdown of this provincial group is as follows:

a. Confirmed address	318
b. Unconfirmed address	83
c. No address	96
	497

In March, 1973, a short, written version of the interview was sent to former students in categories a. and b. The purpose of this substudy was to make the survey more useful to the provincial schools and to determine whether or not the deaf who live in a metropolitan area are different in any important way from the deaf in the rest of the province. Of the 401 questionnaires that were sent, we received 109 replies (22%). This response rate is very low, and is probably due to a combination of inaccurate addresses and lack of time to engage in more extensive follow-up work. In general, the response rate to mailed questionnaires runs about 40% to 50%. The data from the mailed questionnaires, therefore, must be viewed with some caution. It may represent the more linguistically able deaf, who are better able to handle a written questionnaire, and it certainly represents those who have more stable residential patterns.

Comparison Sample

One of the problems with survey research is that very often massive amounts of statistics are produced to which the reader responds "so what?" If we know, to choose an arbitrary example, that 45% of deaf people eat roast beef on Sunday, without some idea of how many hearing people do the same, it is impossible to say whether 45% represents a lot or a little of roast beef eaters. In order to make the figures in this study more meaningful, we have tried to provide comparisons. Sometimes there are figures available for the general population. This is true for income and reading scores. But for many things no such figures can be found, and we have tried to fill this gap with a comparison sample.

Each deaf person we interviewed was asked if he had a brother or sister of approximately the same age as himself living in Toronto. We then tried to interview and test these relatives using the same materials that were given to

the deaf. This technique would have provided a very good control group since the deaf and hearing individuals would have had similar backgrounds and characteristics apart from their deafness.

However, we were less successful than had been hoped. There were not as many brothers and sisters in the city of the same age as we had expected, and we just ran out of time. We did manage to reach 24 hearing peers, and their data is useful for some purposes.

However, on many things men must be compared only with men and women with women. Our comparison sample is too small to use in this way, and it is drastically overbalanced in favour of women (71%) while the deaf sample is evenly split. Also the comparison sample is somewhat older.

Accordingly we have tried to use these figures with care, and the reader should be warned not to take them too seriously.

Data Collection

The primary data collection instrument was an interview schedule developed in consultation with many people who we knew were knowledgeable about Ontario deaf - educators, Canadian Hearing Society, churches - as well as other studies of the deaf. A draft form of the interview was pilot tested with some deaf people before being produced in final form.

The interview schedule contained a series of questions which the interviewers asked each respondent. Interviewers were instructed to ask each question, as much as possible, as it appeared on the schedule. Of course the interviewers had to restate and paraphrase in many cases, and most interviews were conducted in some form of manual communication; however the interviewers were instructed to ask each question as neutrally as possible and not to inject their own feelings or opinions into the conversation.

Most questions were open-ended -- that is, the question was asked and the respondent could answer in any terms he wished. There was not a set of predetermined answers from which he had to choose. Many of these questions, however, were pre-coded -- that is, it was possible to guess in advance what the range of answers was likely to be and indicate the various alternatives right on the form. Then when a respondent gave an answer which fell into one of these pre-coded categories, it was a quick and simple matter for the interviewer to record his response. When, however, a response was given which did not fall into one of these categories, the interviewer recorded the answer verbatim, and the necessary categories were developed later.

The interview was long, comprising 31 pages of questions, and typically took two hours. After the interview, respondents were asked to take a reading test (25 minutes) and to write a composition (30 minutes) bringing the total session to about 3 hours. This is a great deal to ask of people, most of whom have spent the entire day at work. But we felt all the questions were necessary, and, in general, people were very cooperative.

Our interviewers were especially skilled for their tasks. Each was experienced in communicating in a variety of ways with deaf people. One was a hard of hearing student, himself a graduate of Belleville and of Gallaudet College. A second was the daughter of deaf parents and a native signer. The third was a worker with and religious teacher of deaf children and adults.

The interviewers were instructed to let the respondent take the lead in establishing a mode of communication. 23 per cent of the sample was interviewed orally, 45% used sign, 8% used gestures, and 23% used a combination of signing, speech, and fingerspelling.

Data Analysis

The answers to each question were tabulated separately for each of the four subpopulations distinguished by sex and school type--residental school men, residential school women, day school men, day school women. Most of the responses were also separately tabulated by age into three categories: 15-24, 25-34, and 35-44 years. These categories were chosen to facilitate comparison with published population statistics. Additional crosstabulations were performed on occasion to test specific hypotheses.

The crosstabulations were then tested to determine if the groups differed from one another. The tests used were the chi-square test, the chi-square test modified by Yates correction, and the Fisher exact test, whichever was most appropriate according to Siegel (1956:110).

In some cases in which the responses could be rank ordered (for example "how many of your friends are deaf"), the categories were assumed to be interval and means were computed. In these cases and in those in which we had true interval data (for example, wages), Students t test was used. Where two interval variables were compared (for example, wages by age), Pearson product-moment correlation was used. Separate results for the different subpopulations are reported in the text if the difference between them is statistically significant at or beyond the .05 level. Otherwise only findings for the total group are reported.

For the reader not familiar with statistics, the term "statistically significant" does not mean that groups differ in large or important ways, but that the differences, whether large or small, are reliable. In other words, statistical significance means that, if we were to repeat the study, for each reported difference there is at least a 95% chance that we would get the same result again.

Crosstabulations and many of the significance tests were done on the computer, using the SPSS program (Nie, et. al, 1970).

Description of Those Interviewed

Sex and School. Of the 159 people interviewed, 78 were male and 81 were female; 71 were from Metro schools, 9 from Milton and the remaining 79 from Belleville. A breakdown of schools by sex is given in Table 2.

Because of the small number of students from Milton in the sample, the responses of Milton and Belleville students were combined. Hereafter, these two schools will be described as the residential schools as distinguished from the day schools in Metro.

TABLE 2

NUMBER OF INTERVIEWED RESPONDENTS BY SCHOOL AND SEX

Sex	Schools			Total
	Toronto	Milton	Belleville	
Males	32	6	40	78
Females	39	3	39	81
TOTAL	71	9	79	159

Age. Table 3 shows the age breakdown of those interviewed. The average age was 28; almost half were between 25 and 34.

There is a statistically significant difference between the age of students from the two types of schools. There are relatively few residential students in the youngest age category; only 38% of the 15-24 year olds are from residential schools, while 62% of the 25-34 year olds and 67% of the 35-44 year olds are from residential schools. This is probably due to the fact that most residential school students come from towns outside of Toronto, and those who eventually move to Toronto do not necessarily leave home right after leaving school. This appears to be especially true of residential school women, many of whom move to Toronto only after several years.

Marriage. Approximately 48% of our population is or was married. In the age range 15-24, approximately 18% are or were married; in the 25-34 group, 49% are or were married, and in the 35-44 group, 97% are or were married. It appears that almost all deaf people get married, but they do so later than their hearing peers. The mean age of marriage

TABLE 3

NUMBER OF INTERVIEWED RESPONDENTS BY AGE, SCHOOL TYPE, AND SEX

Age	Males		Females		Total
	Residential	Day	Residential	Day	
15-24	15	16	5	16	52
25-34	24	12	24	17	77
35-44	7	4	13	6	30
TOTAL	46	32	42	39	159

for men is 24.5; for women it is 22.8. Table 4 gives the per cent married by sex and school.

In both age of marriage and per cent married there is a significant interaction between sex and type of school. As noted above, there are significantly fewer women in the 15-24 age category from residential schools, but significantly more of these women are married. These two facts are due to the geographical boundaries of the interviewed sample. Unmarried deaf women tend to live with their parents, who, in the case of residential students, more often live outside of Toronto. This is not true to the same extent for residential school men, who more frequently move to Toronto on their own.

TABLE 4

PER CENT MARRIED BY AGE, SEX, AND SCHOOL TYPE

Age	Males			Females			Total
	Residential	Day	Combined	Residential	Day	Combined	
15-24	7%	0%	3%	80%	27%	40%	18%
25-34	33	50	39	66	35	59	49
35-44	100	75	91	100	100	100	97

TABLE 5

NUMBER OF CHILDREN

Number	Per Cent (N=76)
None	39%
One	14
Two	28
Three	10
Four	8
Five	1
TOTAL	100%

of Toronto. This is not true to the same extent for residential school men, who more frequently move to Toronto on their own.

Children. Of the 76 married deaf, 61% had children. Table 5 shows the breakdown by number of children.

TABLE 6

PLACE OF BIRTH

Place	School	
	Residential (N=88)	Day (N=71)
Toronto	36%	61%
Ontario	48	15
Other	16	25
TOTAL	100%	100%

Family Background. Four deaf in our sample had deaf parents, and one had a deaf father and a hearing mother. All the rest (154) had hearing parents. 21% (34) of the deaf had one or more deaf siblings--three of the five with one or more deaf parent and 20% of those with hearing parents.

Place of birth is given in Table 6. Eight men and one woman were originally enrolled in a Toronto school for the deaf and later transferred to Belleville. The remainder of the sample spent all of their Ontario years in one type of school or the other. A check on those who did transfer did not turn up any noticeable differences on our measures between them and their classmates.

English was the sole language spoken in the home of 87% of our population. 7% came from homes where both English and some other language was spoken. The remaining 6% (10 people) consisted of 3 French, 2 Italian, 2 Greek, 1 German and 2 students who came from homes where sign language was the only method of communication.

Description of Those Responding by Mail

Sex and School. Of the 106 people who answered the mailed questionnaire, 3 were from Metro schools, 27 from Milton, and the remaining 86 were from Belleville. A breakdown of schools by sex is given in Table 7.

In order to compare the answers of people who responded by mail to those who were interviewed, we again merged the Milton and Belleville students into one category and

TABLE 7

NUMBER OF MAIL RESPONDENTS BY SCHOOL AND SEX

Sex	Schools			Total
	Toronto	Milton	Belleville	
Males	1	16	35	52
Females	2	11	41	54
TOTAL	3	27	76	106

TABLE 8

NUMBER OF MAIL RESPONDENTS BY AGE AND SEX

Sex	Age			Total
	19-24	25-34	35-44	
Males	28	11	10	49
Females	22	17	9	48
TOTAL	50	28	19	97

excluded the three Toronto students. Thus the maximum number answering any question is 103.

Age. Unlike those interviewed, the mail respondents could reply anonymously. Six of them did, and, as a consequence, we do not have their ages. Therefore, in age breakdowns, the maximum number of responses is 97. The breakdown by age and sex (excluding Toronto) is shown in Table 8. As can be seen by comparing Table 8 and Table 3, the mail respondents are as a group somewhat younger than those interviewed.

Locale. The respondents generally live in smaller communities: 82% live in cities under 200,000 population. There are no sex or age differences in where they live.

Marriage. Approximately 44% of the mail respondents are or were married. In the age range 15-24, 16% were married; in both of the older age ranges, 68% were married. It appears that the relative isolation of the small town makes it harder for deaf people to find spouses.

There are significant age and sex differences in marriage rates. Only 31% of the men are married while 56% of the women are or were married. This appears to be only partly accounted for by the facts that (1) women tend to marry younger and (2) in our sample the men who responded were younger than the women.

The age breakdown of those married is shown in Table 9. If we just consider the oldest category, it appears that deaf men in small towns are less likely to find mates than deaf women ($p = .06$ by Fisher exact test).

TABLE 9

PER CENT OF MAIL RESPONDENTS MARRIED BY AGE AND SEX

Sex	Age			Total
	19-24	25-34	35-44	
Males	11%	64%	50%	31%
Females	23	71	89	52
TOTAL	16%	68%	68%	41%

Age of Onset and Causes of Deafness

Respondents were asked the age of onset and cause of their deafness. This data is of questionable value since it refers to events occurring far in the past and since the onset and cause of deafness are often difficult to diagnose. In particular, we question the low reported incidence of inherited deafness in view of the large number of deaf people who have deaf siblings.

Table 10 shows the reported age of onset of deafness in our sample. Of the deaf contacted, 72% reported that they were deaf at birth or became deaf in their first year of life.

Table 11 gives the causes of deafness. It shows that 45% of the sample reported deafness to be caused by an ear

TABLE 10

AGE OF ONSET OF DEAFNESS

Age	Interviewed Respondents			Mail Respondents
	Residential (N=87)	Day (N=71)	Combined (N=158)	(N=90)
0	63%	78%	70%	76%
1	5	13	8	7
2	16	4	11	6
3	9	3	6	4
4	2	1	2	2
5	1	0	.6	0
6	0	0	0	1
7	1	0	.6	0
8	1	0	.6	0
9	0	0	0	1
10	0	0	0	1
11	0	0	0	1
14	0	1	.6	0
16	1	0	.6	0
TOTAL	100%	100%	100%	100%

TABLE 11

CAUSE OF DEAFNESS BY AGE OF ONSET AND SCHOOL TYPE

Cause	Under One-Year-Old		Over One-Year-Old		Total (N=159)
	Residential (N=55)	Day (N=55)	Residential (N=33)	Day (N=16)	
Ear Infection	51%	62%	21%	19%	45%
Measles	11	13	27	50	19
Meningitis	5	5	30	19	12
Pregnancy Illness	20	9	0	0	10
Injury	2	0	15	6	4
Accident at Birth	2	7	0	0	3
Drugs	3	2	0	0	2
Inherited	2	2	0	6	2
Unknown	2	0	6	0	2
Did not Answer	2	0	0	0	1
TOTAL	100%	100%	100%	100%	100%

infection in the first year of life. Other causes accounting for more than 10% of the cases were: measles, 19%; meningitis, 12%; and illness during pregnancy, 10%.

There is a significant difference between the students from residential schools and the Toronto students in age of onset. Significantly fewer Toronto students became deaf after the first year. If this is true, it is probably due to superior medical care available within Toronto for childhood diseases (especially meningitis) and accidental injury, as well as earlier detection of hearing loss.

Degree of Hearing Loss

We sought to determine degree of hearing loss both with (for those who currently use one) and without a hearing aid. This was done using a self report scale developed at Gallaudet College, which has been shown to correlate well with audiometric data (Schein, 1964:11). This means that people tend to be ordered according to degree of deafness the same way by the Gallaudet scale that they are by audiometric tests. This does not rule out the possibility that deaf people consistently tend to overestimate or underestimate their degree of hearing loss. The questions, to be answered yes or no are:

1. Can you hear loud noises?
2. Can you tell one kind of noise from another?
3. Can you tell the sound of speech from other sounds?
4. Can you hear and understand a few words without seeing the speaker's face?
5. Can you hear and understand what a person says to you without seeing his face and lips?

The respondent receives a score which is one point for each question answered "yes." Thus a score of zero means a person answered no to all questions; while a score of five means he answered yes to all questions. The results with and without a hearing aid are shown in Table 12.

Table 12 shows that one-third of the sample report not even being able to hear loud noises, and 77% cannot tell one kind of noise from another without a hearing aid. On the other hand, 12% report that they can understand at least some words of speech without using a hearing aid and without seeing the speaker. Degree of hearing loss is independent of age of onset of hearing loss, sex, or school type. The degree of hearing loss reported by mail respondents does not differ significantly from the loss of those interviewed.

Use of an Individual Hearing Aid

As Table 12 shows, 43% of those interviewed have never used an individual hearing aid. Of those who have used a hearing aid, about half of them no longer do so. There is a strong sex difference as to who continues to wear a hearing aid -- approximately 39% of the women, but 63% of the men (see Table 13). This may be due to the fact that hearing aids are considered unattractive, but may also be due to the fact that more men work outside of the home in contact with hearing people.

Hearing aid use among those who filled out the mailed questionaire is not significantly different from those interviewed.

TABLE 12

PER CENT REPORTING VARIOUS DEGREES OF HEARING LOSS BY HEARING AID HISTORY

Hearing Aid History	Number of "Yes" Responses on Gallaudet Scale						Total	Mean Number of "Yes" Responses
	0	1	2	3	4	5		
Interviewed Respondents								
Hearing Without An Aid								
Never used aid (N=69)	43	30	13	7	3	3	100%	1.04
Don't use aid now (N=44)	32	32	18	7	5	7	100%	1.41
Use aid now (N=45)	20	22	20	18	11	9	100%	2.04
TOTAL (N=158)	33	28	16	11	6	6	100%	1.44
Hearing With An Aid								
Don't use aid now (N=41)	15	22	20	22	12	10	100%	2.24
Use aid now (N=45)	0	9	13	27	22	29	100%	3.49
TOTAL (N=86)	7	15	16	24	17	20	100%	2.90
Mail Respondents								
TOTAL (N=103)	30	27	14	15	10	4	100%	1.59

TABLE 13

HEARING AID HISTORY BY SEX

Hearing Aid History	Interviewed Respondents			Mail Respondents		
	Males (N=78)	Females (N=80)	Combined (N=158)	Males (N=51)	Females (N=52)	Combined (N=103)
Never used aid	45%	43%	44%	61%	65%	63%
Don't use aid now	20	35	28			
Use aid now	35	23	29	39	35	37
TOTAL	100%	100%	100%	100%	100%	100%

As Table 12 shows, hearing aid use is related to degree of hearing loss. As a group, those who never used an individual hearing aid have worse unaided hearing than those who have used one but no longer do so; and this group in turn has worse unaided hearing than those who are currently using hearing aids. This difference comes out most clearly when comparing the aided hearing of the different groups, but is also seen when comparing unaided hearing.

Hearing aid use is also related to age. In the 15-24 year age range, 27% have never used hearing aids; in the 25-34 year age group, 41% have never used aids; and in the 35 - 44 year age group the figure is 80%. This is probably due to major improvements in hearing aids and in provincial programs to purchase hearing aids for those who cannot afford them, as well as greater emphasis in the schools on auditory training.

Among those interviewees who have used a hearing aid at one time, the number who still do so is also related to age. 61% in the 15-24 age range still use their hearing aids; 44% in the 25-34 age range; and only 33% in the 35-44 age range. This may be due to improvements in hearing aids, but could also be due to either the fact that the younger deaf have not had as much time in which to give up their hearing aids, or the possibility that the younger deaf may have been better instructed in their use by the schools.

TABLE 14

A COMPARISON OF HEARING WITH AND WITHOUT AN AID

		Hearing With An Aid						
		Number of "Yes" Responses on Gallaudet Scale						Total
		0	1	2	3	4	5	
Hearing Without An Aid	0	6	6	5	5	1	0	23
	1		7	6	5	4	1	23
	2			3	7	2	4	16
	3				4	4	3	11
	4					4	2	6
	5						7	7
	TOTAL	6	13	14	21	15	17	86

Degree of Help Provided by Hearing Aid

Among those who have ever used a hearing aid, 22% still could not distinguish one kind of noise from another when wearing it. 38% could not distinguish the sound of speech from other sounds even when wearing a hearing aid. It is not surprising to find that 70% of the people in these two categories gave up wearing their aids. Of the 61% who can at least distinguish speech from other sounds when wearing a hearing aid, only 34% have discontinued its use.

Since the deaf were asked to rate their hearing both with and without a hearing aid, it is possible to study the degree of improvement a hearing aid affords. Table 14 shows a crosstabulation of Gallaudet scale responses both with and without a hearing aid for all those in our study who wore a hearing aid at some time.

The data in Table 15 demonstrate how unpredictable are the effects of a hearing aid. Those who gave up using a hearing aid are compared with those who are still wearing one on amount of improvement a hearing aid gives them. Of those who stopped wearing a hearing aid, 46% were not raised

TABLE 15

DEGREE OF IMPROVEMENT GIVEN BY AN AID TO PEOPLE WITH DIFFERENT HEARING AID HISTORIES

Number of Steps Improvement on Gallaudet Scale	Don't Use Aid Now (N=41)	Use Aid Now (N=45)	Total (N=86)
0	46%	27%	36%
1	29	29	29
2	12	22	17
3	12	18	15
4	0	4	2
5	0	0	0
TOTAL	100%	100%	100%

even one category, 29% were raised one category, and only 24% were raised two categories or more. Of those who still wear their hearing aid, only 27% were not raised even one category, 29% were raised one category, and 44% were raised two categories.

Of those who gave up wearing their hearing aids, 78% were not helped by their hearing aids to the point where they could understand any speech. Of the remaining 22%, about half already could hear speech, and their hearing level was not improved on the Gallaudet scale. Of those who still wear hearing aids, about half were not helped to the point where they could understand any speech.

Those who still use hearing aids were asked in what settings they were used: at work, at home, with hearing friends, with deaf friends, and with strangers. The results are shown in Table 16. From the table one can see that those who use their hearing aids use them almost everywhere. There is less use of hearing aids in three of these settings by residential men than by day school men.

TABLE 16

SETTINGS IN WHICH PEOPLE USE THEIR HEARING AIDS

Settings	Per Cent Using Aid (N=43)
At home	88
With hearing friends	86
With strangers	86
With deaf friends	74
At work	70

SCHOOL HISTORY

Average length of attendance at public and secondary school was 13.3 years. Among the residential students there was little difference by sex, men averaging 13.5 and women 13.0 years. Among the day students however, men attended an average of 14.7 years to the women' 12.4 years (t = 2.42).

With the exception of the 15-19 year age group, among whom of necessity there must be a greater proportion of drop-outs because of the normal school leaving age, there is a general decrease in the amount of schooling with age for both men and women. Those in the 35-44 year age group averaged 1 1/2 years less schooling than those in the 20-24 year age group. This change reflects a lengthening of the school programme over the years.

Only 16% of the sample attended some post-secondary programme. There was a large difference by sex, with the figures being 26% for men and only 7% for women. This is consistent with the trend for day school men to remain in school longer at the secondary level, and reflects society's greater pressure on men to obtain advanced training.

Of this group of 26 students who had some post-secondary training, 11 attended George Brown College of Applied Arts and Technology 6 went to Gallaudet, 6 to other colleges and universities and 3 to various other types of institutions. However 10 of the 26 left without completing their course of study.

This pattern for deaf students contrasts with that found in our hearing group, where 41% had some post-secondary education. This was true even though the group was largely women. Furthermore only 1 of the 10 left without graduating.

Thus it seems that the deaf have had less access to higher education and have been less successful in completing it even when they did obtain access.

We also have data on post-secondary school attendance from those omitted from the sample because they were still in school. These figures cannot be taken as representative of the deaf as a whole since they were not collected as rigorously from that portion of the population living outside of Metro. It is interesting to note, however, that 8 students are currently attending George Brown Community College, 4 are attending other colleges and universities, and 21 are attending Gallaudet. It is also interesting to note that all of the Gallaudet students are from the residential schools while those attending George Brown are evenly split between residential and day students.

32% of the deaf students took 1 or more courses which were not part of a full-time programme of study. 37% of the hearing group did so too, a figure which is very similar to that for the deaf. Here we also do not find a difference between men and women.

Most of the courses taken by the deaf were given by a Board of Education. 41% of the courses were related to jobs, 30% were related to hobbies, and 29% were academic subjects. This does not differ significantly from the courses taken by the hearing group.

The hearing group, however, tended to take more courses than the deaf. Of the hearing individuals who took one course, 78% went on to a second, 67% to a third, and 55% to a fourth. Among the deaf, the comparable figures are 47%, 27% and 16%.

EMPLOYMENT HISTORY

Employment Rate

Almost all of the former students in our sample were employed at one time or another - 96% of the men and 93% of the women. Seventy-seven per cent of the men and 58% of the women were employed at the time of the survey. For men, this is somewhat lower than the figure of 84% for Toronto as a whole, while for women, it is higher than the Toronto figure of 40% (Federal Department of Labour, 1973). Employment among our mail respondents was lower - only 65% for men and 35% for women.

From the total job history, we find that men were employed an average of 84% of the time since leaving school. Women who are currently married were employed an average of 80% of the time up to the time of their marriage. After marriage, these women were employed for 48% of the time. Unmarried women were employed 73% of the time since leaving school. The overall rate for women is 61%. Thus employment is an important part of the life of deaf women as well as deaf men.

Advancement

What is the progress of the deaf through the employment world? The first and last job that people had was coded as to general status using Blishen's (1967) scale. Table 17 gives the average value for deaf and hearing men and women by age.

TABLE 17

AVERAGE JOB STATUS (BLISHEN'S SCALE) OF DEAF AND HEARING MALES AND FEMALES

	Group	First Job	Last Job
Males	Deaf (N=74)	36	34
	Hearing (N=7)	33	45
Females	Deaf (N=77)	34	34
	Hearing (N=17)	49	52

All the figures for the deaf fall in the middle 30's, which is where the average figures for Ontario workers fall (Blishen,1967). It would seem then, that the deaf are doing relatively well.

Relative to the hearing group however, the deaf are doing more poorly. There is little difference between the two groups of men on the first job, but on the last (or current) job, the hearing men have advanced quite a bit while the deaf have remained stationary. Even though the hearing men are somewhat older than the deaf men in the sample, and thus have had more opportunity to advance, one would expect some movement among the deaf.

Among deaf women, there is also no movement from first to last job. Although the hearing women also made little advance, they started at a much higher level. Average job status of the mail respondents is very similar to those interviewed in Metro - --33 for men and 37 for women.

Seventy-four per cent of the deaf men and 78% of the women have had a raise in their present job, and 75% of the men and 59% of the women have been promoted. However, only 3% were in a supervisory position. This is another indication of the limited opportunity that the deaf enjoy for advancement.

Part of the employment picture concerns job stability, and for this phase of the study we have comparison figures from research done on the male graduates of 4 year technical schools in the United States (Eninger, 1965). This study, done in 1964, looked at graduates from 1953, 1958, and 1962. Graduates from 1958 would have been out of school for about 6 years at the time of the study. Since our male students average 8 years out of school, Eninger's 1958 graduates provide the closest point of comparison. Since our sample has been out of school an average of 2 years longer than the 1958 graduates at the time they were studied, and since employment stability generally increases with age, we would expect the deaf to be doing a little better. On the other hand, Eninger's study looked only at high school graduates while our sample includes students who left school before graduating as well as those who completed their course of study. On the whole graduates do better than drop-outs, and on these grounds we would expect Eninger's 1958 students to be doing better than our deaf students.

Due to the lack of complete comparability between our sample and Eninger's 1958 sample, data from all three of Eninger's groups are presented (Table 18). However, the 1958 graduates are the best point of comparison for the deaf men. The deaf women have been out of school an average of 10 years and should, perhaps, be compared with Eninger's 1953 graduates. But any comparison of male and female data in this area is questionable.

TABLE 18

EMPLOYMENT CHARACTERISTICS OF THE DEAF AND GRADUATES IN ENINGER'S STUDY

	Per Cent of Time Employed[a,b]	Duration of Present Job in Months	Average Duration of All Jobs in Months[b]	Average No. of Jobs[b]
Deaf Males (N=78)	84	61	38	2.5
Deaf Females (N=81)	61	44	32	2.2
Eninger's Graduates				
1953	93	--	47	3.1
1958 ◄	87	--	26	2.5
1962	84	--	13	2.0

a 20 males and 6 females were excluded because they went to another school full time after high school.

b 8 males and 3 females were excluded due to incomplete data.

The per cent of time employed since leaving school, which was discussed above, is again presented here. The figure of 84% for men is similar to the figure for Eninger's 1958 graduates.

Average duration of the job currently held was 61 months for men and 44 months for women. The average duration over all jobs was quite a bit less - 38 months for men and 32 months for women, both of which are higher than the figures for Eninger's 1958 graduates. Average number of jobs - 2.5 for men and 2.2 for women - is also similar to the figures in Eninger's study. It thus appears that the deaf are at least as stable in their employment history and perhaps more stable than the general population. In terms of present employment, however, deaf men are worse off than the general population. Their present higher rate of unemployment may be due to the increased rate across the nation at this particular point in time or may reflect seasonal patterns.

The general picture which emerges so far is that deaf people find and keep jobs as well as do hearing people. However, the deaf make little advance in their jobs, and are thus more vulnerable to general changes in economic opportunity. This increased vulnerability of deaf men, who are generally married to deaf women, may be partly responsible for the higher employment rate of deaf women over hearing women.

Earnings

This picture is reinforced by the data on earnings. Table 19 gives the average earnings by age of those in our sample who are currently employed. Respondents were asked to give their current weekly salary, and these were multiplied by 52 to obtain the yearly salary. This assumes that those who were employed would continue fully employed for the full year. This is not a completely accurate assumption, and the salaries of the deaf are therefore somewhat inflated. Weekly earnings included incomes from all jobs currently held, part-time as well as full-time, and represents total gross earnings before any deductions. However, only 2 men and 3 women had more than one job. Our interviewers emphasized the fact that gross income was desired, and felt that people did indeed understand this and respond appropriately.

Men in the youngest age group have a yearly average salary of $5,747 while those in the oldest age group earn $7,980, an increase of 39%. Women in the youngest age group average only $4,535 and in the highest, $4,843, an increase of only 7%. Table 19 also contains the average earnings for the nation as a whole obtained from the 1971 taxation returns (Department of National Revenue, 1972). For both men in the youngest group, and women in the two youngest age groups, the national average is lower than the average for the deaf. However, the national average increases dramatically with age - 101% for men and 31% for women - so that eventually it far surpasses the averages for the deaf.

However, these national figures actually underrepresent the wages of hearing workers for two reasons -- they represent the nation as a whole whereas workers in metropolitan areas generally have higher earnings, and they are derived from 1971 rather than 1972 data. An attempt was made to derive more accurate estimates in the following way. First a correction factor was applied to adjust for the disparity between the nation as a whole and metropolitan Toronto. The 1971 taxation statistics show an overall national average of $7,237 compared to Toronto's average of $7,868, an increase for Toronto of 9%. This was applied to the figures in the second and fifth line of Table 19.

There is as yet no data on the rise in wages from 1971 to 1972. However, in the years 1967 - 1971, wages increased

TABLE 19

AVERAGE YEARLY EARNINGS FOR THE DEAF AND THE GENERAL POPULATION BY AGE AND SEX

Group	Age 15-24	25-34	35-44
Males			
Deaf - 1972	$5747	$6931	$7982
Canada - 1971	4884	8216	9847
Toronto - 1972 (estimate)	5803	9761	11,699
Females			
Deaf - 1972	$4535	$5338	$4843
Canada - 1971	3913	5140	5121
Toronto - 1972	4649	6107	6084

7.8%, 7.9%, 8.2%, and 8.9% respectively (Federal Department of Labour, 1973). Since this represents a steady rise, the figure of 8.9%, the extent of increase from 1970 to 1971, should be a conservative estimate of the rise from 1971 to 1972, the year of our study. This correction factor was applied to the average salaries obtained after applying the first correction factor.

The results of applying correction factors are given for men in row 3 and for women in row 6 of Table 19. They show an even greater disparity between the earnings of the deaf and the general population, completely obliterating the apparent advantage of the young deaf adult.

The study of the deaf in Vancouver also reported lower earnings (Boese, 1966). Several studies in the United States report higher earnings for the deaf than for the hearing population. However, in one of these, (Kronenberg & Blake, 1966), the investigators question their data on the hearing population. A second, looked only at former students 26 years of age and under, comparing them with young hearing workers. A third (Lunde & Bigman, 1959) found lower salaries for deaf men and equal salaries for deaf women, but did not take age distribution into account. In a

fourth (Justman & Moskowitz, 1967), the investigators themselves suggest that the data might be biased because most of the deaf live in cities where wages are higher. They did not include enough data in their report to estimate if this fact would be enough to account for the discrepancy.

The data from the mail respondents presents a brighter picture. This may represent nothing more than the fact that more successful deaf may have returned the questionnaire in greater numbers than those who were less successful. Men in the 15 - 24 age group average a higher salary ($6,379) than the estimated average salary for the general Toronto population. Average salary in the 25 - 34 year age group ($6,905) is similar to the salary of the Toronto deaf. The average salary of the 35 - 39 year age group ($9,031) is quite a bit higher than the salary for Toronto deaf men. Women in the youngest age group have a salary similar to their Toronto deaf counterparts. There are too few women in the older age groups who are employed to make comparison worthwhile.

Job Satisfaction

The hearing group more often than the deaf said they liked their present jobs. On a 5 point scale running from "dislike very much" to "like very much," the deaf usually said they "like" their job while the hearing chose "like very much." There was no difference between men and women. When asked what aspects of their job they liked and disliked, the two groups tended to give similar answers. Table 20 presents the various factors and the percentage of deaf and hearing mentioning each one in a positive light. The factors are arranged in their order of importance to the deaf. Note that these percentages add up to more than 100%. This is because most people mentioned more than one aspect of their job in a positive light. However there was a large difference in the average number of reponses from deaf and hearing people. Deaf people on the average mentioned 2.3 things and hearing people mentioned only 1.6. Therefore there are two columns for the hearing group. The first gives the raw percentages. The second gives these same percentages corrected for the difference in responsiveness (done by multiplying the raw percentages by 2.3/1.6).

There are four significant differences between the two groups. The deaf mention the work itself most frequently as being a source of positive satisfaction. This is relatively low on the list of the hearing sample. The deaf, on the other hand, give relations with co-workers a relatively low rating, while the hearing see this as the most satisfying aspect of their job. The choice of co-workers is low for both deaf men and deaf women, and the difference between the hearing and the deaf cannot therefore be attributed to the preponderance of women in the former group.

TABLE 20

PER CENT OF DEAF AND HEARING MENTIONING VARIOUS SOURCES OF JOB SATISFACTION

Source	Deaf (N=148)	Hearing (N=24)	Hearing (Adjusted for Responsiveness)
Work itself	57%	17% *	24% *
Pay	41	38	54
Relations with employer	32	17	24
Relations with co-workers	27	42 *	60 *
Job security	25	4	6
Working conditions	21	33	47 *
Benefits	13	0 *	0 *
Opportunities for advancement	10	8	11
TOTAL	226%**	159%	226%

* Differences between deaf and hearing are statistically significant.

** Percentages add up to more than 100% because most people gave more than one response.

Pay is second on the list for both groups. Next, for the hearing group, is working conditions, which is significantly lower for the deaf. The final difference is in job benefits, which the deaf mention more often than the hearing, but which is mentioned relatively little by either group.

Finding a Job

Table 21 gives the percentages of deaf using various means to find jobs. On both the first and current job, deaf agencies head the list, followed by personal friends. All other sources are relatively unimportant.

There were some differences by type of school. On both first and current job, day students more often than

TABLE 21

JOB SOURCES

Source	First Job (N=146)	Current Job (N=95)
Deaf agency	57%	46%
Friend	29	29
School	9	0
Own efforts	1	9
Written Ads	1	7
Manpower	3	6
Other employment agency	1	1
TOTAL	100%	100%

residential students found jobs through friends (42% vs. 18% and 45% vs. 23%), and residential more often than day students make use of deaf agencies (70% vs. 39% and 55% vs. 28%). This is no doubt due to the fact that residential students would have fewer contacts in Toronto, and there is a concerted effort by the residential schools to involve CHS in the placement of students. There is a tendency for men to make more use of friends than women and for women to make more use of deaf agencies than men.

Source of jobs among the mail respondents is quite different. Friends are much more important for men - 48% of the respondents name friends as the source of their job. Agencies for the deaf are much less important - only 22% of the total sample mention this source.

Once a job is located, it is necessary to apply and undergo any selection procedures that are required. We asked each interviewee a set of questions about applying for a job. We asked the same set of questions three times -- about his first job, about his current or last job (unless he is still on his first job), and about a job application which was unsuccessful. Table 22 shows the results. Since

TABLE 22

BEHAVIOUR WHEN APPLYING FOR A JOB

	First Job		Unsuccessful Application		Last Job	
	%	(N)	%	(N)	%	(N)
PART A - THE INTERVIEW						
Went for an interview	68	148[a]	62	52	71	95
Was accompanied to interview	85	101	44	32	64	67
Method of communication used in interview						
Speech	40	100	53	32	50	66
Writing	21	100	41	32	30	66
Manual	5	100	0	32	3	66
None	34	100	6	32	17	66
PART B - FILLING OUT AN APPLICATION FORM						
Filled out a form	67	143	67	52	71	95
Received assistance						
No assistance	37	96	67	34	55	65
Some assistance	43	96	24	34	32	65
Form completely filled by someone else	20	96	9	34	12	65
PART C - QUALIFYING TESTS						
Took a test	18	148	15	52	23	95
Found test difficult	44	27	50	8	27	22
Didn't understand directions	18	27	12	8	23	22

a Whether or not a particular question was asked sometimes depended on the answer to a previous question. Therefore the N's vary from question to question.

one-third of the deaf never applied for a job they didn't get, response to this question is somewhat limited.

In actually applying for their first job, only 16% of the deaf applied themselves. The remainder had someone else apply for them. On both the first and current job, 70% had a personal interview. On the first job, 85% of these had someone accompany them to the interview. This declined on the current job to 64%. On unsuccessful applications, only 44% of the sample were accompanied to the interview. Thus it seems that the deaf benefit from help in the interview situation.

On the first job, 67% had to fill out a form and 71% had to meet this requirement on the current job. Only 38% could fill out the form without help on the first job, increasing to 55% on the current job ($p = .10$). Relatively few employees were required to take a test when applying for a job, and there was no change over time - 18% on the first job and 23% on the current job.

Thus the deaf appear to be very dependent for help in obtaining a job. Although this dependency is greatest for the first job, most remain dependent to some extent in later job seeking as well. Agencies for the deaf provide a real service in this regard.

Additional information on job applications is given in Table 22.

The Situation on the Job

A fair number of the deaf report getting special help to learn the job - 25%. This help came almost exclusively from hearing employees rather than other deaf employees or an outside agency. However a large number do work with other deaf - 31% of the employed men and 43% of the employed women. Almost none said that their job was changed in any way to compensate for their handicaps.

The deaf are aware that their handicap limits their job opportunities; 51% of the men and 61% of the women feel that this is so. 46% of the men and 34% of the women report that deafness is a problem to them in their current job. However, 27% of the men and 15% of the women report deafness to be an advantage, the most frequent comment being that it allows increased concentration or freedom from noise.

LEISURE TIME ACTIVITIES

As is true in the general population, TV is the favorite leisure time activity. Deaf people watch an average of 2.9 hours of TV every day (see Figure 1). Table 23 shows other leisure time activities.

Almost everyone reads newspapers more than once a week. The typical deaf person goes shopping, visits friends, spends time with his family, and reads books and magazines more than once a week. He plays cards or other indoor games, and goes to bars, restaurants or nightclubs several times a month. He goes to movies and parties several times a year. He never goes to concerts, ballets, or plays, participates in or watches sports events, attends church, nor does he listen to the radio or records.

Of course there are quite sizable minorities who deviate from this picture. 36% go to church several times a month or more often. Women go to church more often than men, as is true in the hearing population, but deaf men go to church more than hearing men. This is probably because in Toronto there are two churches which serve the deaf and are a focus for the social life of a sizable minority of the deaf population.

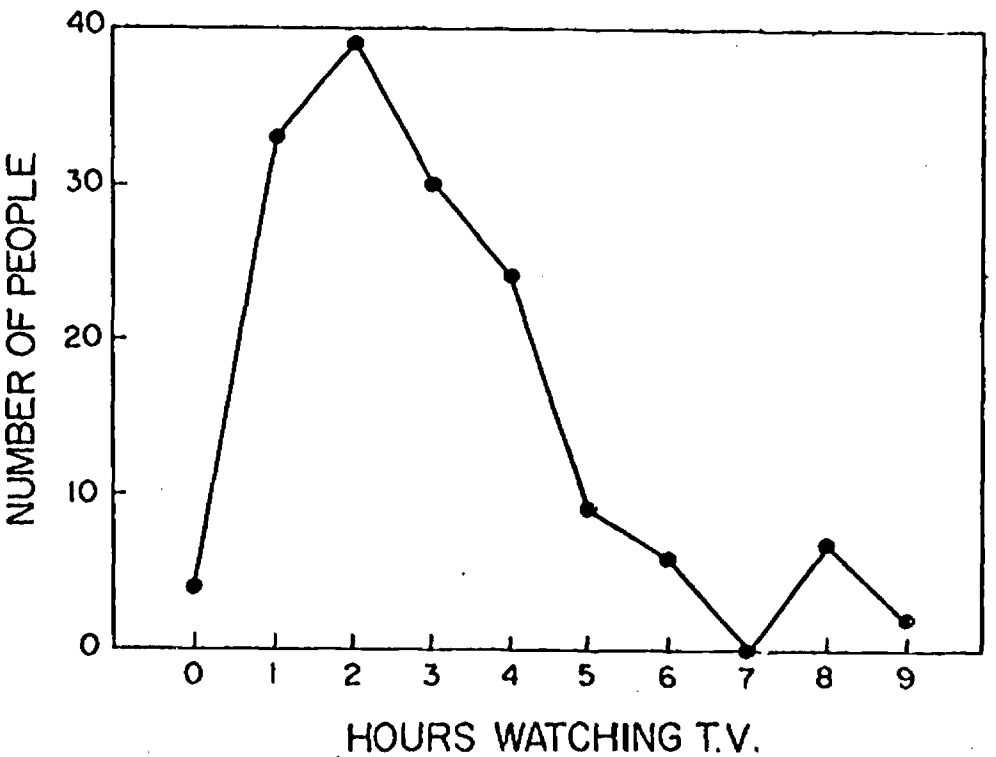

Figure 1: Amount of Time Spent Watching TV

TABLE 23

NUMBER OF RESPONDENTS ENGAGING IN VARIOUS LEISURE TIME ACTIVITIES, TV EXCLUDED (N=159)

Activity	No Answer	Frequency					
		More Than Once a Week	Once a Week	Several Times a Month	Several Times a Year	Once a Year or Less	Never
Read newspaper	4	130	10	3	2	0	10
Shopping	5	62	59	22	10	1	0
Visit friends	5	62	36	33	17	1	5
Spend time with family	5	71	12	23	28	8	12
Read magazines	8	51	23	36	15	5	21
Read books	4	52	12	25	19	14	33
Nightclubs, bars, restaurants	5	30	19	39	28	7	31
Playing cards, other games	5	19	25	42	34	12	22
Go to parties	5	13	12	43	54	18	14
Hobbies	4	32	19	24	17	9	54
Go to movies	5	13	11	20	55	28	27
Participate in sports	4	22	16	20	33	6	58
Watch sports	5	10	16	27	35	10	56
Attend church	5	12	19	25	20	9	69
Listen to radio	4	28	4	2	3	2	116
Listen to records	4	19	5	11	8	4	108
Go to concerts, ballets, plays	4	1	1	4	18	38	93

A sizeable minority of deaf do something that may seem surprising - they listen to the radio and to records. 30% listen to the radio and 27% listen to records at least several times a year. 18% listen to the radio and 12% listen to records more than once a week.

On the other hand, 36% seldom or never go to movies, 30% seldom or never read a book, 17% seldom or never read a magazine. Although the deaf in general seldom or never go to plays, they pack the plays which they can understand. A recent play in sign language at the Church for the Deaf and the musical Godspell, the day it was simultaneously translated into sign language, both packed the deaf in, with many people coming in from communities quite far away from Metro Toronto.

About the only differences noted in the hearing group is that the hearing women go to more plays or concerts and sports events, listen more often to records, and both sexes listen more often to the radio. On the other hand, deaf women more often go to restaurants, bars or nightclubs than their hearing relatives.

Recently PBS, the U.S. Public Broadcast System, has produced some episodes of the French Chef with subtitles. 56% of the deaf have seen these captioned TV programmes. All but three of these people expressed an interest in seeing more of these programmes. In a personal communication to the author, the producers of this program report that their mail response has been quite favorable from the deaf, but that some hearing people have complained that the subtitles are distracting. Recently, the U.S. Department of Health, Education, and Welfare has awarded PBS a large grant to develop, test, and evaluate a system for displaying "closed" captioning. Under such a system only people with a special device attached to their TV set would see the subtitles.

For some time channel 29 has carried a daily newscast and channel 79 has carried a weekly newscast which is simultaneously signed and spoken. 83% have seen these programmes, and almost all who have seen them would like to see more signing on TV. 70% of the deaf have gone to see a movie with subtitles. This compares with only 8% of the hearing group who have ever been to such a movie.

32% of those interviewed use the telephone. This reflects the fact that some people in the sample are probably better described as hard of hearing rather than deaf, but is also due to the fact that some deaf use the telephone as a signalling device with hearing members of their family and friends rather than as a vehicle for two-way communication.

TABLE 24

MEMBERSHIPS IN CLUBS AND ORGANIZATIONS

PART A - NUMBER OF MEMBERSHIPS

Memberships Per Person	Number of Persons	Total Membership
0	98	0
1	37	37
2	16	32
3	7	21
4	1	4
TOTAL	159	94

PART B - ORGANIZATION TYPE

Type of Organizations	Number of Memberships
Regional associations of the deaf	32
Athletic clubs or teams	16
Churches	14
Service clubs, fraternities, alumni associations	14
Social clubs	14
Cultural, hobby or travel groups	4
TOTAL	94

PART C - MEMBERSHIP COMPOSITION AND NUMBER OF OFFICES HELD

Membership Type	Number of Memberships	Number of Offices Held
Deaf only	69	15
Deaf and hearing	15	3
Hearing predominantly	10	1
TOTAL	94	19

Only 61% of the deaf have ever seen a teleprinter. Of this number only 41% have ever used one. Of those who have seen a teleprinter, 16% already have one, and another 63% would like to have one. Some of those who don't want teleprinters explained that it costs too much. When phoning long distance, they pointed out, it takes more time to type than it would to speak the same message. One way the schools could alleviate this problem would be to encourage their male students as well as their female students to take typing.

83% of the men and 48% of the women have or have had a driver's license. 68% of the men and 47% of the women have or have had a car.

38% of the deaf belong to clubs or organizations. Of the total of 91 memberships held by the deaf, 73% (69) had only deaf members and only 11% (10) were predominantly hearing.

Only one of the 19 organizational offices held by deaf people are in organizations with a predominantly hearing membership. Additional details of leisure activities are given in Table 24.

Living Patterns

Most of the deaf people who aren't married live with their parents. Of those single people living in Toronto who no longer live with their parents, about a fourth live alone and a fourth live with deaf friends. The remainder are split among hearing friends, non-deaf relatives and deaf relatives. Table 25 gives the breakdown. The living patterns of deaf living in small towns are not significantly different from those living in Toronto.

Marriage

The most intimate interaction with a hearing person is to marry one. No deaf men in our interviewed sample have married hearing women. On the other hand, 15 (31% of those married) deaf women have married hearing men. There is no significant difference between residential and day students on this measure. Women who marry hearing men have the same degree of hearing loss as those who marry deaf men.

Among the mail respondents the pattern is different. We found 7 (44%) men and 10 (35%) women who have hearing

TABLE 25

PER CENT REPORTING VARIOUS RESIDENTIAL PATTERNS

Residence Shared With	Interviewed Respondents			Mail Respondents		
	Males (N=77)	Females (N=81)	Combined (N=158)	Males (N=51)	Females (N=52)	Combined (N=103)
Spouse	32%	57%	45%	31%	54%	43%
Parents	43	27	35	55	33	44
Alone	4	7	6	6	10	8
Deaf friend	5	5	5	6	0	3
Hearing friend	5	2	4	2	2	2
Hearing relative	5	1	3	0	2	1
Deaf relative	5	0	3	0	0	0
TOTAL	100%	100%	100%	100%	100%	100%

spouses. While the percentage rate for women is not different from the Toronto group, there is a difference for men. The reason may be due to more limited opportunity for deaf men to meet deaf women in small towns. Assuming, as seems to be the case in Metropolitan Toronto, that deaf men normally marry deaf women, a deaf man who knows few deaf women has two alternatives: either not to marry, or to marry a hearing woman. Both alternatives seem to happen. More small town deaf men marry hearing girls and more don't marry at all, or at least marry after 40.

Dating

Less intimate is dating behaviour. Table 26 gives data on the dating patterns by sex and school. 20% of the men and 34% of the women have dated mostly or entirely hearing people. On the other hand, 55% of the men and 52% of the women have dated mostly or entirely deaf people. 10% of the men and 5% of the women haven't dated at all.

Day school men date significantly more hearing women than residential men, although they all end up taking deaf brides. There appears to be a tendency in the same direction in the case of women, but it is not statistically significant. The mailed form did not have a question about dating.

TABLE 26

PER CENT REPORTING VARIOUS NUMBERS OF DEAF AND HEARING DATES

	Males		Females		Total (N=150)
	Residential (N=43)	Day (N=30)	Residential (N=42)	Day (N=35)	
All deaf	47%	20%	38%	29%	35%
Most deaf	16	10	14	17	15
Half deaf	21	27	19	6	18
Most hearing	2	30	19	23	17
All hearing	5	3	5	20	8
No dates	9	10	5	6	7
TOTAL	100%	100%	100%	100%	100%

Friends

One of the most straightforward ways to explore integration of the deaf is to ask them whether their friends are deaf. Table 27 gives the results by sex and school.

One might argue that a deaf person is successfully integrated into hearing society if all or most of his friends are hearing. By this criterion only 18% of the interviewed deaf are integrated into hearing society. If you say that a deaf person is integrated into hearing society if half or more of his friends are hearing, then 43% of the interviewed deaf are integrated into hearing society. There is a significant difference between residential men and the other three categories of deaf interviewed. Residential men are significantly less integrated into hearing society than women or day school men. Only 2% or 32% are integrated, depending upon which of the two definitions above is chosen. There are no signficant age differences.

The mail respondents are in a different situation. Very likely there are few if any deaf in the same town. Thus it is not surprising that the mail respondents report higher percentages of hearing friends. By the two criteria above the mail respondents are 23% or 48% integrated respectively. Given their limited opportunity to socialize with other deaf, a more telling result is that 52% are still reporting that all or most of their friends are deaf.

There is a significant age difference in the number of hearing friends that deaf men in small towns have, with older deaf having a greater percentage of hearing friends. The most frequent response in the 19-24 year age group is that half or more of their friends are deaf; among those 25-34 years old, it is half deaf and half hearing; and among those 35-44, it is half or more than half hearing.

TABLE 27

PER CENT REPORTING VARIOUS NUMBERS OF DEAF AND HEARING FRIENDS

Number of Deaf And Hearing Friends	INTERVIEWED RESPONDENTS					MAIL RESPONDENTS (N=97)
	Males		Females			
	Residential (N=45)	Day (N=32)	Residential (N=42)	Day (N=40)	Combined (N=159)	
All deaf	36%	13%	14%	5%	18%	12%
Most deaf	31	38	45	30	37	39
Half deaf	29	19	26	23	25	19
Most hearing	0	25	7	20	12	18
All hearing	2	6	7	8	6	12
No friends	0	0	0	5	1	0
No answer	2	0	0	10	0	0
TOTAL	100%	100%	100%	100%	100%	100%

Methods of Communication

The interviewers asked a battery of questions about how the deaf communicate with various categories of people: hearing people a) in their family, b) at work, and c) off the job; and deaf people a) at work, and b) off the job. For each of these categories we asked how the deaf send communications to and how they receive communications from these various groups. We also asked which method was used most often. As there were virtually no differences in the percentages for sending and receiving in a particular mode in any of the categories, only the figures for sending will be presented and discussed.

Table 28 shows the percentage of the deaf who use each mode most often (predominant use) with each category of persons, and Table 29 shows the percentage who use each mode to some extent (at least occasional use). It is evident from these two tables that speech is the most heavily used method of communicating with hearing people. With each of two categories -- hearing people on the job, and hearing people off the job -- slightly more than half of the deaf use speech predominantly, and over three-fourths use speech occasionally. Next in importance is writing, which is the

TABLE 28

PER CENT OF THE DEAF REPORTING PREDOMINANT USE OF EACH METHOD OF COMMUNICATION

Group (N=151)	Method of Communication						
	Speech	Writing	Gesture	Finger Spelling	Sign	Total Comm.	None
With Hearing People							
Family	64	16	7	3	9	1	0
On the job	54	35	7	2	1	1	1
Others	51	36	4	3	0	0	5
With Other Deaf People							
On the job[a]	14	2	2	3	70	10	0
Others	14	1	5	2	64	13	1

a For this group, N = 59.

TABLE 29

PER CENT OF THE DEAF REPORTING OCCASIONAL USE OF EACH METHOD OF COMMUNICATION

Group (N=151)	Method of Communication						
	Speech	Writing	Gesture	Finger Spelling	Sign	Total Comm.	None
With Hearing People							
Family	91	53	42	33	27	15	0
On the job	85	80	48	20	15	13	2
Others	77	71	31	12	9	13	6
With Other Deaf People							
On the job[a]	36	25	78	92	97	54	2
Others	55	23	72	85	86	50	1

a For this group, N = 59.

predominant mode of communication for about a third of the deaf, and an occasional mode for roughly three-fourths.

Manual forms of communication are much less important. There is virtually no predominant use of fingerspelling, signing, or total communication, but at least 13% to 20% of the deaf report occasional use of at least one of these forms of manual communication.

The pattern is somewhat different when looking at how the deaf communicate to hearing members of their own family. Use of writing is much less important; only 16% use it predominantly, and 53% use it occasionally. Some of this slack is taken up by speech, which is used predominantly by 64% and occasionally by 96%. However most of the compensating increase is in manual forms of communication, with 13% reporting predominant use of these forms, and occasional use of each of the forms queried running from 14% for total communication to 27% for sign to 33% for fingerspelling.

Use of gesture is also of some importance in communicating with hearing people both inside and outside of the family: roughly 5% use it predominantly, and 40% use it occasionally. There are also a few (under 6%) reporting

that no communication occurs between them and hearing people.

It appears that many hearing people in regular contact with the deaf take the trouble to learn some form of manual communication. This is suggested when one compares use of manual communication in different categories. Use of manual communication off the job is lower than use on the job, which in turn is lower than use to hearing people in one's family. The fact that one out of five deaf use fingerspelling to communicate to hearing people on the job is particularly interesting.

The hearing person's willingness to extend himself on behalf of his deaf co-worker is also suggested by the increase in the use of sign language on the job with the age of the deaf worker -- 15-24 year olds, 6%; 25-34 year olds, 15%; 35-44 year olds, 29%. The older deaf have generally been at their jobs longer, and their co-workers have had more time and motivation to learn some sign. With the increased visibility of sign in the media -- TV newscasts, on Sesame Street, on religious programmes, on Vision On and other special programs for the deaf -- it would not be surprising to find the percentage rising still higher in the future.

The picture is quite different when the deaf communicate with other deaf. Here manual forms far surpass speech and writing in frequency of use. Off the job 79% report a predominant use of manual communication. Of this 79%, 16% use total communication, 3% use fingerspelling, and the remaining 81% use sign language. Thus of the different forms of manual communication, sign language predominates. If we look at occasional use, sign language use runs as high as 97%, while fingerspelling is not far behind at 92%. Only about half use total communication even occasionally. Only 14% report a predominant use of speech with other deaf, 36% use speech occasionally on the job, and 55% use speech occasionally off the job to other deaf. Over 23% use writing to some extent, although there is virtually no predominant use of writing. The same pattern holds true of gesture -- virtually no predominant use but about 75% occasional use.

Age, Sex, and School Differences

The extent to which speech is used with hearing persons differs by both sex and school, presenting a consistent pattern for both predominant and occasional use with all three categories of hearing persons (see Tables 30 and 31). Men consistently use speech less than women, and residential students consistently use speech less than day students. In general, the largest gap is between residential men and all other groups. Residential women also use less speech than day school women, but the difference is not as great.

TABLE 30

SEX DIFFERENCES IN THE PER CENT OF THE DEAF USING SPEECH

Group	Predominant Use		Occasional Use	
	Males (N=74)	Females (N=75)	Males (N=74)	Females (N=75)
With Hearing People				
Family	56%	72%	84%	97%
On the job	49	59	83	88
Others	41	62	69	86
With Other Deaf People				
On the job[a]	4	18	26	42
Others	14	13	55	55

a The following are the N's for this group. Predominant use: Males = 23, Females = 33; Occasional use: Males = 25, Females = 34.

TABLE 31

SCHOOL DIFFERENCES IN THE PER CENT OF THE DEAF USING SPEECH

Group	Predominant Use		Occasional Use	
	Residential (N=74)	Day (N=75)	Residential (N=74)	Day (N=75)
With Hearing People				
Family	52%	79%	86%	97%
On the job	51	57	79	94
Others	42	63	67	90
With Other Deaf People				
On the job[a]	8	24	24	57
Others	1	31	35	82

a The following are the N's for this group. Predominant use: Residential = 37, Day = 19; Occasional use: Residential = 38, Day = 21.

TABLE 32

AGE DIFFERENCES IN THE PER CENT OF THE DEAF USING SPEECH

Group	Predominant Use			Occasional Use		
	19–24 yrs. (N=46)	25–34 yrs. (N=75)	35–44 yrs. (N=28)	19–24 yrs. (N=46)	25–34 yrs. (N=75)	35–44 yrs. (N=28)
With Hearing People						
Family	72%	65%	46%	94%	89%	90%
On the job	52	64	30	77	89	89
Others	60	54	26	79	80	66
With Other Deaf People						
On the job [a]	15	14	10	35	41	20
Others	21	13	4	65	57	33

a The following are the N's for this group for both Predominant and Occasional use: 19–24 yrs. = 20, 25–34 yrs. = 29, 35–44 yrs. = 10.

Use of speech with hearing persons also differs somewhat by age, with older students showing less use than younger students. The age differences, however only appear in predominant use; there are not even consistent trends in occasional use (see Table 32).

A similar pattern occurs in the use of speech with other deaf. There are again differences by school, with more day than residential students using speech. Some age differences also appear, although they are not very pronounced. Where they do occur, they favour the use of speech more by younger than by older students. These differences appear to be due to the fact that fewer of the older day school students use speech than do the younger day school students. There is little change with age among the residential students, who use less speech to begin with. There are no sex differences in the use of speech with other deaf.

In general, while the number of people who use speech is less in the older group, the number of people who use other methods is greater. In communicating with all three categories of hearing people, the number of deaf who use writing is greater in the older group for both predominant and occasional use.

More older deaf report occasional use of fingerspelling. This is true with all categories of hearing and deaf people. More older deaf use sign occasionally with all three categories of hearing people, while with both categories of deaf people the number of older deaf who use sign is greater for both predominant and occasional use. Among the older deaf, there is also greater occasional use of gesture and total communication with both hearing and deaf people.

The most dramatic increase with age in the use of manual methods occurs with hearing members of one's family. One's first thought is that, after so many years, parents finally consent to learn sign and fingerspelling. However, further analysis suggests a different explanation. The apparent increase is probably due to a change in the definition of "family" from "parents and siblings" in the younger group, to "wife and children" in the older group. A comparison of respondents with and without children shows that the per cent who report using manual forms of communication doubles and triples with the advent of children -- from 26% to 50% in the case of fingerspelling; from 18% to 48% in the case of signing; and from 9% to 27% in the case of total communication.

The less frequent use of speech by residential students is largely compensated for, in the case of communication with hearing people, by greater use of writing. Roughly the same number of residential students report predominant use of writing as predominant use of speech, while fewer day

students report much writing and more report speech. In communication with other deaf, residential deaf almost universally (93%) use some form of manual communication to other deaf. This is also true for 60% of day students, but a sizeable minority (31%) report speech as the predominant form of communication with other deaf.

Differences by Degree of Effective Hearing

Effective hearing is defined as the number of "yes" responses on the Gallaudet hearing scale for aided hearing in the case of those who currently use a hearing aid and for unaided hearing in the case of those who do not.

With all three categories of hearing people, there is an increase in both predominant and occasional use of speech with increase in effective hearing. This is clear from an examination of Table 33. In Table 33 scores on the Gallaudet hearing scale have been collapsed into two categories 0-2 (low scorers) and 3-5 (high scorers) to make the differences more apparent.

This general pattern holds true for both residential and day students, but is much more pronounced among residential students.

Mail Respondents

The mailed questionnaire asked only one set of communication questions: "How do you usually communicate to (a particular group)?" and "How do they usually communicate to you?" Most respondents gave more than one answer to these questions, indicating that the questions functioned as somewhat intermediate to the predominant and occasional questions of the interview. And, in fact, the percentages of mail respondents reporting each method of communication generally fell between the incidence of predominant and occasional use in the interview sample, but preserving the same pattern.

There were a few minor differences, however. Fewer individuals reported no communication with hearing people or sole use of gestures. This is to be expected, as such people are not likely to respond to a written questionnaire. Unlike the interviewed deaf, there were no differences between men and women. This may be due to bias in those responding. As will be discussed later, there was some tendency for residential men to have less well developed oral skills, and for men in general to show less ability in writing. Differences between men and women could show up in the interview sample since we succeeded in finding almost everyone. However when responding through a written questionnaire, those with less communication ability are less likely to respond. There were also no age differences

TABLE 33

PER CENT OF THE DEAF USING SPEECH BY DEGREE OF EFFECTIVE HEARING AND SCHOOL

Hearing Group	School	Predominant Use		Occasional Use	
		Gallaudet Scale Responses		Gallaudet Scale Responses	
		0 - 2	3 - 5	0 - 2	3 - 5
		(N=58)[a] (N=41)[b]	(N=27)[a] (N=24)[b]	(N=58)[a] (N=41)[b]	(N=27)[a] (N=24)[b]
Family	Residential	36%	81%	79%	100%
	Day	66	96	96	100
	Combined	48	88	86	100
On the Job	Residential	30	93	70	96
	Day	50	70	90	100
	Combined	39	82	80	98
Others	Residential	22	81	54	96
	Day	54	76	85	96
	Combined	36	79	67	96

a N for residential schools

b N for day schools

in the answers, which could be due to the same type of sample bias.

Communication in Specific Situations

In order to explore how deaf people deal with the community at large we asked how they would deal with three specific situations. The first situation concerned what happens when they are sick and have to go to a doctor. Of those who make an appointment, 15% arrange it themselves and 85% have someone else arrange it for them. About 50% have someone else go along with them as opposed to only 8% of the hearing sample.

We asked how they communicate with the doctor: 9% said they had no communication with the doctor -- presumably the person they brought along did all the communicating; 2 people used gestures or pantomime; one person used fingerspelling; the remainder used either speech or writing. In this situation, day school students were significantly more oral than residential school students. About half the day school students used speech as opposed to writing, while only 23% of the residential students did so (see Table 34).

Another situation concerned what they would do if they were lost. In this situation 43% said they would speak and 35% would use writing. The remaining responses were quite varied: some said they would solve the problem without

TABLE 34

PER CENT REPORTING VARIOUS METHODS OF COMMUNICATION WITH THE DOCTOR

Method of Communication	School		Total (N=144)
	Residential (N=79)	Day (N=65)	
Speech	25%	45%	34%
Writing	65	43	55
Gestures	1	2	1
Fingerspelling	0	2	1
No Communication	9	9	9
TOTAL	100%	100%	100%

communicating--for example, "catch a taxi", "go home", or "look at a map"; and some (9%) didn't answer the question.

Day school men are significantly more oral than their residential counterparts in this situation. 53% of the day school men chose speech compared with 31% of the residential men. The majority (51%) of the residential men chose writing, compared with only 19% of the day school men. Unlike their male counterparts, there was little difference between residential and day school women: overall 45% chose speech and 30% chose writing.

The third situation concerned shopping. The question was:

> Suppose you are in a new store and you want to find out how much something costs, and there is no price tag. Or maybe you can't find what you are looking for. What would you do?

In this situation the percentage of deaf using speech rose to 57%. There were no significant school or sex differences.

The results of these three situation probes are shown in Table 35. It appears that as it becomes more critical to convey accurate information--i.e., moving from shopping to travelling to consulting with a doctor-- more and more deaf turn from speech to writing. Speech, although it is the major vehicle for communicating with hearing people, does not seem an adequate mode for the deaf.

TABLE 35

PER CENT USING VARIOUS METHODS OF COMMUNICATION IN DIFFERENT SITUATIONS

Method of Communication	Doctor (N=144)	When Lost (N=150)	Shopping (N=149)
Speech	34%	43%	57%
Writing	55	35	22
Other	11	22	21
TOTAL	100%	100%	100%

Additional information on the use of speech appears in the questions on the job interview. As Table 22 shows, more people use speech in their recent interviews than in their first interview. However the number using speech is only about 50%.

Communication Skills

Reading. Everyone we interviewed was given the Metropolitan Achievement Test in reading. This test was chosen because it has been used previously with deaf children. Since we expected a wide range of scores, and since scores at either extreme of any standardized test are less valid than scores in the middle ranges, there was a problem of which level of the test to use.

One story and the five questions about that story from the Elementary level test (form G) was reproduced, with permission of the publisher, and used as a screening device. If a subject did very well on this device (i.e. completed the test in not much more than 3 minutes and scored 4 or 5 questions correct), we felt he would likely score above the range for which the Elementary test was designed, and he was therefore given the Intermediate level test (form F). If he did very poorly, (i.e. took considerably longer than 3 minutes and/or scored no more than 1 correct), he was given the Primary II level test (form F). Subjects who performed intermediate to these two extremes were given form F of the Elementary level test.

On the basis of the scoring tables for the various tests, we felt that the Primary II test would give fairly valid scores from grades 1.0 to 3.5 (i.e. grade 3, five months), the Elementary test from 2.0 to 6.1, and the Intermediate test from 4.3 to 7.5. An analysis was done of 100 of the reading tests to see how well our students' performance matched these ranges. We found that our screening procedures somewhat underestimated their performance, and some students should have been given a harder test than they had been given.

Of 51 students given the Primary II test, 3 fell above its prime range. Of 34 taking the Elementary test, 3 fell above its prime range. For such students, the score underestimates their true level of performance. However relatively few individuals were involved.

A more serious problem was encountered with the Intermediate test where 7 out of sixteen given the test scored at its upper limit. On all 3 tests, however, only 13% of the students scored outside the range. However in the interest of fairness, it is desireable to concentrate on the number of people scoring above and below grade 7, since this is the point above which most of the distortion occurs.

TABLE 36

READING SCORES OF THE DEAF

Grade Level	Per Cent (N=156)
Above 7	5%
5 - 6	12
3 - 4	36
Below 3	47
TOTAL	100%

Everyone in the hearing group was given the Advanced level test (form F), which gives valid scores from grades 5 to 8.5. All of the hearing except two scored well above this range at the level of 9.6 or higher. One hearing person scored 7.1, and another scored below the range at 3.9. Therefore reporting the percentage above and below grade 7 makes sense for the hearing group as well.

Using grade 7, then, as a cutoff, we see that all of the hearing respondents but one scored at or above this level. The percentage of the deaf scoring at various grade levels is given in Table 36. As can be seen, only 5% of the deaf scored at a comparable level.

There was virtually no difference between residential and day students or between men and women on average reading scores.

In interpreting these results the actual level of the scores is of questionable significance. All of our respondents had been out of school for some time, and were no longer accustomed to taking tests. Also the testing situation itself was not ideal, occurring at home where there were often distractions of one type or another. What is of significance is the comparison between the deaf and hearing groups, and in this regard we may note the great disparity in their performance. Nevertheless we felt it was worthwhile to present the raw data for the deaf sample (Table 36), since it is the best guess of the true scores of the deaf, and since it is valuable to examine the

distribution of the scores, which cluster rather drammatically toward the lower end.

Writing. Each person in our sample was given 30 minutes to write a story about a set of cartoons. These pictures are used in a similar manner as part of the Weschler Adult Intelligence Scale. Two experienced secondary school teachers marked each composition on the scale appearing in Figure 2, which we adapted from the Oral Rating Form for Rating Language Proficiency in Speaking and Understanding English, 1962.

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6. Writing is intelligible with good adult prose.

5. Writing is intelligible with few (if any) noticeable errors of grammar, word-order, or spelling.

4. Writing is intelligible, but has occasional grammatical, word-order, or spelling errors which do not, however, obscure meaning.

3. Meaning occasionally obscured by grammatical, word-order, or spelling errors, OR, although fluent and intelligible, non-English constructions predominate.

2. Meaning frequently obscured by grammatical, word-order, and spelling errors or non-English constructions, OR writing is restricted to basic structural patterns OR content is restricted.

1. Errors of grammar, word-order, and spelling make comprehension quite difficult.

0. Writing so full of grammatical, word-order, and spelling errors as to be virtually unintelligible.

Figure 2: Writing Intelligibility Scale

The two ratings given each composition were averaged for a final score. Inter-rater reliability was .85 (Pearson product moment correlation). The hearing sample averaged a score of 4.3 on this scale, which indicates that they produced intelligible, fairly error-free prose. The deaf averaged a score of 2.1, indicating that their prose was frequently obscured by syntactic errors.

Examples of compositions scored at the various levels appear below together with the percentage of the deaf producing compositions scored at that level.

LEVEL 6 - .6%

The first square shows two boys racing for a comic book lying on the ground. They aren't racing together, but rather each one wants to get there first so he can have the book for himself.

The second square shows them fighting over it and an older man comes upon them.

The man is breaking up the fight in the third square much to the boys' disconcernation.

Number four square shows the two boys shaking hands reluctantly while the man looks on.

The fifth square has the boys walking away - hands in pockets and the man looking at them as they go.

We see the man has his own motives for breaking up the fight in the last square as he picks up the ccmic book and starts reading it himself.

LEVEL 5 - 3%

Two young boys were fighting over a ccmic book which they found on (?) street. An older gentleman saw them and gave them a lecture on fighting and made (?) shake hands. Then the gentleman picked up the comic bock and went away.

Morale of the story. They should have took the book home themselves and (?) it.

LEVEL 4 - 9%

One morning a little boy went for a walk along the street and another young boy strumbled along the path. Both of them saw a amotic comic on the road and they tried to reach the comic book. But they started to fight each other. A man was walking along and saw two boys were fighting each other. A man tried to stop the two boys and talked to them. He told them to stop fighting and be friends, like brothers. So, the boys shaken their hands and they left. So, the man was picking the comic up ans was walking away and he was reading the comic. I don't think it is not fair as the boys should read the comic first as they saw it.

LEVEL 3 - 12%

Two boys saw a book comic on the sidewalk. The boy wanted to catch the book but they fought about it. A man saw them to fight as one boy wanted go get it. The man told them to stop fighting. He told them to be friend and they shook with their hands. Then they went away when they

didn't pick up the atom comics on the sidewalk. Then the man read it when he walked on the street.

LEVEL 2 - 37%

Boys found a book But Boys are fight about a book. The man saw them and tell stop to fight, also he explain to Boys Boy forgive him and Boys don't pick Book up The man pick up book. He read comic book.

LEVEL 1 - 28%

The boys try to catch a comic book. They are fright. The man san(?) stop. They are friend now. They are going home. The man read a comic book.

LEVEL 0 - 10%

Boys look fight. see man stops help fiend.

There was virtually no difference between residential and day school students on writing ability. Women however scored considerably higher than men (2.4 vs. 1.9).

Reading and Writing Interrelationships. There was a strong relationship between reading and writing proficiency among the deaf (r = .68). This relationship is much stronger than the relationship for the hearing group (r = .34), and the relationship found in a similar, city-wide study of eighth graders (r = .46; Wright & Reich, 1972).

Not unexpectedly, reading and writing performances increase with effective hearing (r = .21 and .18), and also with length of attendance at secondary school (r = .23 and .13), although not as much as for the hearing group (r = .43 and .41).

Speech. The deaf were asked to estimate how well hearing people could understand their speech and how well they could understand the speech of hearing people. They ranked each on a five point scale running from "very little" to "everything." The responses in terms of percentages are shown in Tables 37 and 38. On the average the deaf feel that about half (between "some" and "most") of what they say can be understood by a hearing person, and that they can understand about half of what a hearing person says. However, the variance is large and the distribution is almost flat, with about a fourth of the people reporting very little understanding and about a fourth reporting complete or almost complete understanding. The differences in the means for sex, school and age are not statistically significant, but the differences between residential men and the other populations is close to significance. There

TABLE 37

PERCEIVED UNDERSTANDABILITY OF SPEECH WITH HEARING PEOPLE BY SEX AND SCHOOL

Understandability	INTERVIEWED RESPONDENTS										MAIL RESPONDENTS	
	Males				Females				Combined			
	Residential		Day		Residential		Day					
	To[a] (N=43)	From[b] (N=44)	To (N=31)	From (N=32)	To (N=40)	From (N=40)	To (N=34)	From (N=34)	To (N=148)	From (N=150)	To (N=101)	From (N=102)
1. Very little	37%	30%	19%	28%	23%	22%	21%	12%	26%	23%	28%	23%
2. Some	19	41	19	22	25	25	18	29	20	30	28	33
3. More	19	23	26	25	30	18	38	35	28	25	25	27
4. Almost everything	16	5	19	16	15	28	18	18	17	16	16	16
5. Everything	9	2	16	9	8	7	6	6	9	6	4	1
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
MEAN	2.4	2.1	2.9	2.6	2.6	2.7	2.8	2.8	2.64	2.51	2.41	2.37

a When speaking to hearing people.

b When receiving messages from hearing people.

TABLE 38

PERCEIVED UNDERSTANDABILITY OF SPEECH WITH HEARING PEOPLE BY AGE

Understandability	Age 19-24 yrs. To[a] (N=47)	19-24 yrs. From[b] (N=48)	25-34 yrs. To (N=73)	25-34 yrs. From (N=74)	35-44 yrs. To (N=28)	35-44 yrs. From (N=28)	Combined To (N=148)	Combined From (N=150)
1. Very little	21%	25%	26%	19%	32%	32%	26%	23%
2. Some	19	17	21	34	21	43	20	30
3. Most	30	27	26	28	29	11	28	25
4. Almost everything	17	21	19	16	11	7	17	16
5. Everything	13	10	8	3	7	7	9	6
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%
MEAN	2.8	2.8	2.6	2.5	2.4	2.1	2.6	2.6

a When speaking to hearing people.

b When receiving messages from hearing people.

appear to be more residential men with little or no usable speech than people from the other populations.

There are significant differences in perceived understandability of speech by effective hearing, with those having more hearing reporting that they are understood better. There are no significant differences by school in the degree to which students can be understood, even if high scorers and low scorers are compared separately.

Manual Communication. Ability to communicate in sign language to other deaf people was also explored. 99% of the residential school graduates can communicate in sign language, while only 69% of the day students can sign. Of those who can sign, the age at which they learned to sign is shown in Table 39. The mean age for day students is 13.61 years; the mean age for residential students is 7.95 years. Table 40 shows where signing was learned. Most residential

school deaf learned sign in the residences from friends; most day school students learned sign from other deaf outside of school, although 21% managed to learn from others in the hallways and on the playground at school, and 17% learn at church. Deaf children of deaf parents, of course, learned at home.

The deaf who could sign were asked how well they could communicate with other deaf. The results are shown in Table 41. Most said that "almost everything" or "everything" they signed could be understood by other deaf. This is considerably higher than the perceived understandability of their speech by hearing people, although about a third report some difficulty in communicating in sign ("very little," "some," "most"). The difference between the mean understandability of sign production of the youngest group and the corresponding mean of the oldest group is significant. Differences in the mean reception of sign language with age approach significance. Tables 38 and 41 taken together suggest that older deaf have greater ability than younger deaf to communicate in sign and less ability to communicate through speech. This may be due to either change in these abilities with age, or to differences in the training received by the different age groups, or both.

TABLE 39

AGE AT WHICH INTERVIEWED RESPONDENTS LEARNED TO SIGN

Age	Residential		Day	
	Males (N=42)	Females (N=42)	Males (N=21)	Females (N=25)
0 - 4	5%	5%	5%	12%
5 - 9	67	69	10	20
10 - 14	17	14	33	32
15 - 19	12	12	38	20
20 - 24	0	0	14	8
25 - 29	0	0	0	8
TOTAL	100%	100%	100%	100%
MEAN	8.2	7.7	15.0	12.4

TABLE 40

WHERE SIGNING WAS LEARNED

Place	Residential (N=83)	Day (N=46)
At home	4%	11%
At school from:		
Teachers	4	2
Counsellors	1	0
Friends	86	22
Outside of school:		
From other deaf	6	48
At church	0	17
TOTAL	100%	100%

TABLE 41

PERCEIVED UNDERSTANDABILITY OF SIGNING WITH OTHER DEAF BY AGE

Understandability	INTERVIEWED RESPONDENTS								MAIL RESPONDENTS	
	19-24 yrs.		25-34 yrs.		35-44 yrs.		Combined			
	To[a] (N=34)	From[b] (N=35)	To (N=67)	From (N=67)	To (N=28)	From (N=28)	To (N=129)	From (N=130)	To (N=101)	From (N=101)
1. Very little	9%	11%	8%	5%	0%	4%	6%	6%	1%	2%
2. Some	12	20	6	9	0	4	6	11	3	5
3. Most	21	23	22	22	25	29	23	24	21	20
4. Almost everything	35	20	31	28	36	36	33	28	19	20
5. Everything	23	26	33	36	39	29	32	32	56	53
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
MEAN	3.5	3.3	3.8	3.8	4.1	3.8	3.8	3.7	4.3	4.2

a When speaking to hearing people.

b When receiving messages from hearing people.

Interviewed Respondents

Former students were asked a series of questions about their school experience. One set asked them to indicate what was the most useful and least useful subject they had studied in school and what was the best and worse thing about school. 45% of the sample mentioned some subject or aspect of schooling related to language. Most of these referred to English classes in particular. But also included in this category were scattered references to "language," "writing," "reading," "speech," etc. 24% of the sample mentioned language training as the least useful subject or the worst thing about school. 11% made both positive and negative comments about the language programme, and 10% made only positive comments. There were no school or sex differences in response to these questions.

Vocational training was also viewed as an important aspect of their education. 28% mentioned one of the vocational courses as the most useful subject or the best thing about school. There were almost no references to it as being least useful or the worse thing about school. There were also no sex or school differences on this measure.

The only other subjects mentioned with any frequency were math - 22% of the men and 9% of the women nominating it as most useful - and history - nominated as least useful by 5% of the men and 22% of the women.

Clearly, then, language training stands out in the minds of the former students as the most significant aspect of their education.

Students were also asked whether or not they would like to change the schools in any way. 70% said "yes." There were no differences by sex, but residential students (77%) exceeded day students (62%) in their desire for change. Among those desiring change, however, there were no school or sex differences in what they felt should be changed. 70% of those answering "yes" wanted a revision of the communication policy of the school to include some form of manual expression. This represents 49% of the total sample--54% of the residential and 43% of the day students.

From the type of data we collected it was impossible to determine exactly what form of communication students wanted. Our respondents did not give technically precise answers; some people mentioned signing, others fingerspelling, and some used the term "total communication." But in general, what people seemed to have in mind was a flexible system in which a variety of modes would be available to meet the needs of the particular

situation or the individual student. Our impression was that a rigid manual policy with no use of speech and no flexibility to meet the needs of the individual student would be just as unacceptable to these former students as is a rigid oral policy. Some typical comments follow:

"should have sign clases so that teachers will teach children proper signs and fingerspelling"

"if students don't understand lipreading, then should try fingerspelling"

"children should be allowed to decide what is best for themselves, sign or speech, instead of being forced to lipread"

Another desired change mentioned with great frequency was that standards of training should be raised. 33% of those desiring change (21% of the total sample) made comments similar to the following:

"English in school for deaf should be equal to hearing (schools)"

"in deaf school, when finished reading, teacher asked 'what did the boy do?' - in hearing school asked 'what was the climax?'"

"more English"

"need harder English courses"

"should improve standard to grade 13"

"history was the same every year, boring"

21% of those desiring change (14% of the entire sample) objected to the lack of freedom in the schools. Typical were such comments as:

"to be allowed to do as they please on weekends"

"teachers shouldn't take all responsibility of students"

"permit boys to socialize with girls"

However with the exception of one student, all of the students making this type of comment came from residential schools. These students comprise 32% of the residential group in our sample.

Mail Respondents

The mailed questionnaire also contained general questions about the schools. Respondents were asked what

they liked about the schools for the deaf, whether they would like to change the schools, and, if so, what changes they would make.

Within this series of questions, 43% expressed a negative opinion of the communication practice of the schools. This is similar to the figure of 49% for the interviewed respondents.

31% said they felt that the educational level of the schools should be raised. This contrasts with 21% of the interviewed respondents. Like the interviewed respondents, many of the mail respondents complained about the strictness of the school - 14% of the men and 25% of the women, an overall rate of 18%. This is lower than the rate of 32% for residential students in the interview sample, but is still substantial.

Switching to positive comments, 16% of the men and 29% of the women expressed appreciation for the social life they had enjoyed in school. This was not a frequent comment among the interviewed sample.

SUMMARY AND CONCLUSIONS

This study of former students of the schools for the deaf in Toronto, Milton, and Belleville is based on interviews and testing of most former students currently living in Metropolitan Toronto as well as less comprehensive coverage of former students living elsewhere in the province through a mailed questionnaire.

Most of the former students from these schools are the children of English-speaking parents with normal hearing, and were pre-lingually deafened. The great majority (88%) can be described as profoundly deaf, in that they report being unable, without a hearing aid, to even distinguish the sound of speech from other sounds.

Only slightly more than half of the deaf report having ever used a hearing aid, and only about one-fourth continue to use one. This seems to be due to the fact that hearing aids are of insufficient benefit to many of the deaf, and are most useful to those who have more residual hearing.

The deaf people in this sample are a relatively young group with an average age of 28 years. The average length of attendance at public and secondary school was 13.3 years, and there was little systematic training at the post-secondary level. However about one-third had taken one or more individual courses, mostly evening courses given by boards of education, as opposed to those given by colleges, universities, or private schools.

In terms of employment, deaf adults are disadvantaged relative to the hearing population. Although the overall employment history of deaf men is similar to the employment history of hearing men, their present rate of employment is lower. There also seems to have been less advancement and salaries are lower. The employment rate for deaf women is higher than for hearing women, and may be due to the lower economic standing of their hearing impaired husbands.

Deaf adults seem quite dependent on help in getting a job, although this decreases somewhat with experience. Agencies serving the deaf are the most important resource in locating jobs. Many deaf people have someone else actually apply for them, whether an agency or a friend, and most who have an interview, find someone to accompany them. Many deaf need help in filling out the employment forms that are required. However only 25% reported getting any special help to learn the job and virtually no one said that their job was changed in any way to compensate for their handicap.

Almost half of the total sample and virtually everyone over 35 is or was married, and 61% of those married have children.

The question of whether or not deaf adults are "integrated" into the hearing world cannot be answered in a straightforward way. There is a different answer for different areas of potential integration. Looking at employment, 31% of the men and 43% of the women have deaf co-workers, however it is unlikely that all of their co-workers are deaf, and there is thus at least some integration in the employment situation for most deaf. The presence of more than one deaf worker at any one job site probably has more to say about the feelings of employers than the desire or ability of the deaf to be integrated.

Turning to social situations, only 18% of deaf people report that most or all of their friends are hearing, and only 27% report that most or all of their dates were hearing. No deaf men among the interviewed respondents have hearing spouses, although 31% of the married women have hearing spouses.

In general there is more social integration among those living elsewhere in the province, no doubt because of their relative isolation from other deaf people.

Speech is the major vehicle of communication to and from hearing people; writing is also very important. Perhaps surprisingly there is some use of manual communication with hearing people, especially among those with whom the deaf are in regular contact.

However the speech skills of deaf people, even in combination with writing, appear to be inadequate, especially in situations of great urgency or importance. Only about 35% would use speech in communicating with a doctor, and only about 50% use speech in a job interview situation. And in both of these situations, most deaf people have a hearing person accompany them.

On the average the deaf feel that about half of what they say can be understood by a hearing person and that they in turn can understand about half of what hearing people say. Nevertheless, in view of the handicap they have had to overcome, it is perhaps surprising and certainly encouraging the extent to which speech is used.

Reading and writing skills are quite low. Only 5% of the sample had a reading score of grade 7 or above, and in general the written prose of the deaf was frequently obscured by syntactic errors.

It is not surprising therefore that most deaf usually communicate with other deaf manually. Writing is used to some extent, although signing, fingerspelling, and total communication are the major vehicle of communication for 80%.

In general, it appears that residential students are less "oral" than day school students, and this difference is mostly due to less oralism among residential men, although there is also some discrepancy between residential and day school women. This appears in the degree to which speech is used with both hearing and deaf people. However there is not a corresponding rise in speaking and lipreading ability between residential and day students or between men and women. There are no differences in reading skill between these groups, however women scored higher than men in writing.

There is likewise more use of speech among those with more hearing, however this is accompanied by greater speaking ability. The effect of degree of hearing loss is greater among residential than among day students. However although day students who are more profoundly deaf use speech more than residential students with equally great hearing loss, day students do not seem to have greater speaking ability. Thus, in general, the greater oral orientation of the day school students is likely due to their greater contact with hearing people in the school setting and with their families who are hearing, than to more effective training in speech skills.

It is congruent with the pattern of actual communication use that many of the deaf favored a revision of the communication policy of the schools to include some form of manual communication. This appeared in spontaneous comments when asked whether or not there was anything about the schools they would like to see changed and if so, what they would recommend. Forty-nine per cent of the sample suggested this change. Another frequently mentioned change (21%) was for academic standards at the schools to be raised.

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