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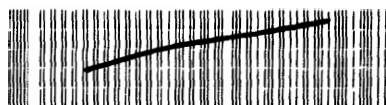
ISBN 0 85965 557 4

SN
2 no 7

Research Finding M-R-60

Price: R0,85

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1 INTRODUCTION

1.1 THE PROBLEM

A worldwide characteristic of the deaf with regard to employment is the limited range of occupations in which they are found. Placements done by the Department of Labour between January 1975 and August 1978 show that the majority of the employed White deaf in South Africa are in the skilled, semi-skilled and unskilled occupations (64,7%), with some representation in the clerical (8,8%) and professional (8,8%) occupations. Although those figures represent only those deaf people who register with the Department, they reflect the contrast between the range of occupations practised by the deaf and that practised by the White population of South Africa as a whole (see Table 1.1).

TABLE 1.1
WHITE DEAF AND TOTAL POPULATIONS ACCORDING TO OCCUPATIONAL GROUP

Occupational group	Deaf placed Jan. 1975- Aug. 1978		White employed population* (29 April 1977)	
	N	%	N	%
Professional, semi-professional and technical	3	8,8	270289	17,8
Managerial, executive and administrative			138388	9,1
Clerical	3	8,8	412506	27,2
Sales and related			145059	9,6
Mining and quarrying			34043	2,2
Transportation, delivery and communication			62911	4,2
Skilled, semi-skilled and unskilled	22	64,7	345603	22,9
Service			105501	7,0
Sheltered employment	6	17,6		
TOTAL	34	100	1514309	100

*Dept. of Labour: Manpower Survey No. 12

Most of the occupations practised by the deaf require no more than a Std 8 level of education and consequently provide no challenge to the deaf person of intelligence and ability.

The chief reason for the deaf being in low level jobs is the difficulty in communication between the deaf and the hearing. The deaf seldom possess normal speech and are therefore understood only with difficulty by the hearing. Because they have to lip-read speech, the deaf take longer to understand instructions and are usually placed in jobs where the work is repetitive and few instructions are needed. For the same reasons, the deaf are rarely trained as supervisors and are not used for work where they come into contact with the public.

Another reason is the generally low level of educational achievement among the deaf. Most deaf pupils achieve only Std 8 and many get no further than Std 6 (Engelbrecht 1961). On the average, a deaf pupil takes 3 to 4 years longer than the hearing child (Engelbrecht 1962) to achieve the same academic level, and as a consequence, enters the labour market at an older age. Attendance at in-service training courses, or at technical colleges or universities, which have no special facilities for the deaf, presents obvious difficulties.

There is no evidence that the deaf as a group are less intelligent than the hearing. In fact, research findings (Vernon 1970) have demonstrated that intelligence is distributed in the same way among the deaf as among the hearing, and there is no difference between the deaf and the hearing as regards capacity for abstract thought.

It is not surprising, therefore, that a large number of the deaf find themselves in jobs that are beneath their capabilities and outside their interests, and consequently unrewarding both financially and in terms of job satisfaction. Despite this, employers of deaf persons report them to be satisfactory as workers and rate them highly as regards stability of job tenure and dedication to their work (Vernon 1970, Engelbrecht 1973). Deafness does not result in any restriction of movement of the limbs, impairment of strength or manual dexterity, and, in fact, the deaf equal the hearing in motor skills related to work, as is evidenced by the type of work in which they are usually employed. The deaf are known for their conscientiousness, reliability, application and concentration on the job.

Underemployment of the deaf presents a serious problem for other reasons as well. With advances in technology and increasing automation of the more repetitive jobs, many of the jobs for which, traditionally, the deaf have been trained and in which many are at present employed, are not in occupations that are expanding. The deaf must be provided with the skills necessary for them to compete on an equal basis with the hearing for jobs more suited to their ability and in which there are prospects of promotion and reward.

1.2 THE AIM

The investigation by the Institute for Manpower Research forms part of a wider research project into work opportunities for the deaf in South Africa being undertaken by the Institute for Educational Research of the HSRC. The ultimate aim of this research project is the provision of effective vocational guidance to the deaf, as well as the planning and implementation of vocationally-orientated training courses at both the secondary and tertiary level, in order to facilitate the successful placement in employment of the deaf. This will entail more effective co-operation between the schools and institutions for tertiary education on the one hand, and employers on the other.

The aim of this investigation is to analyse the jobs being done at present by the deaf and to determine whether a typical profile of job attributes will emerge. Should such a profile emerge, the job analysis will then be used to select jobs particularly suited to the deaf. The attitude of employers towards employment of the deaf is also investigated.

2 THE INVESTIGATION

The investigation was planned to take place in two phases.

2.1 PHASE 1

During this phase, jobs in which the totally deaf are at present employed were investigated. A total of 81 jobs were analysed, ranging from work done by operators to professional and clerical work (see Table 2.1). Most of the employees had been deaf from birth.

2.1.1 Fieldwork

The names of employers of the deaf were obtained from the SA National Council for the Deaf, the Trans-Oranje School for the Deaf in Pretoria and St Vincent School for the Deaf in Johannesburg. Only those who employed totally deaf persons were interviewed. Employers in Johannesburg and Pretoria were visited in September, October and November 1977. During the same period, employers of the deaf in the Cape Town area, in Durban and in Port Elizabeth were contacted by letter, and those who replied were interviewed by two researchers of the HSRC during February and March 1978. Where time was limited preference was given to employers in the private sector, of whom a total of 55 were visited. Fourteen employers in the public sector (which included local authorities, state departments, provincial administrations and universities) took part in the investigation.

A questionnaire (see 2.3.1) was used to analyse the jobs done by deaf people. Since the completion of this questionnaire required a very detailed knowledge of the job being analysed, the personnel manager of each employer organization was asked to suggest the person in his organization, other than the incumbent, who knew the job best. In many cases the person suggested was the immediate supervisor of the deaf person. The questionnaire was usually completed by the researcher with the help of the supervisor; in the other cases, the supervisor completed it himself. In every case it was emphasised that it was the job, not the incumbent, who was to be analysed, and where seeming contradictions arose (e.g. when verbal sources of information were rated as being used considerably), details of any special arrangements made by the employer to accommodate the deaf employee were requested and noted.

After the questionnaire had been completed, an assessment scale (see 2.3.2) was used to investigate employer attitude towards the employment of deaf persons. Employers were asked to compare the deaf as a group with their hearing workers.

The answers of employers to the following questions were also noted:

(a) Have you found that deaf people experience difficulties in fitting in with other workers in the work situation or socially? If so,

what kinds of difficulties?

(b) How was the deaf person trained to do this job?

(c) What are the prospects of promotion for the deaf person in this job? Are any difficulties or blocks to promotion the result of the person's deafness, or sex, or a result of the structure of your organization?

2.2 PHASE 2

During this phase it was planned to analyse jobs which require post-school education and an above-average intelligence, and in which the deaf are not at present employed. The same questionnaire (see 2.3.1) as was used in Phase 1 was to be used for this purpose, and it was hoped that in this way a number of jobs particularly suited to the deaf would be found.

For reasons which will be given later (see Section 4), Phase 2 of the investigation was not carried out.

2.3 QUESTIONNAIRES

2.3.1 Position Analysis Questionnaire (PAQ)

A modified form of the Position Analysis Questionnaire of the Purdue Research Foundation was used to analyse the jobs done by deaf people. This questionnaire was chosen because it provides a very detailed analysis of a job in terms of human attributes necessary to do the job. The PAQ was modified to emphasise factors such as intelligence and verbal and communication skills, which would be required for satisfactory performance of the job, and to highlight all forms of sensory acuity.

TABLE 2.1

NUMBER OF DEAF IN SURVEY GROUP BY OCCUPATION AND EMPLOYER SECTOR

Occupations	No. of deaf	
	Public sector	Private sector
<u>Semi-professional and technical</u>		
Computer data analyst		1
Computer operator	1	1
Display artist		1
Draughting assistant	1	
Draughtsman, learner draughtsman	2	2
Electronic technician/mechanic		1
Fingerprint expert	1	
Programmer (computer)		1
Pupil engineer		1
Quantity surveyor's assistant	1	
Technician tracer		3
<u>Clerical</u>		
Bank sub-accountant		1
Clerk	1	6
Comptometer operator		1
Data typist/punch operator/DDE operator	2	3
Identity document printer	1	
Typist		2
Typist/clerk	1	2
<u>Skilled, semi-skilled and unskilled</u>		
Boilermaker		2
Bookbinder	1	1
Cabinet maker		2
Carpenter/joiner	2	3
Checker/packer		3
Gauger		1
Hairdresser		1
High speed press operator		1
Journeyman		2
Maintenance fitter, fitter and turner		9
Moulder/operator		1
Operator		2
Printing/duplicating machine operator	1	1
Section leader (body shop)		1
Sewing machine mechanic		1
Sewing machinist		1
Sheetmetal worker		3
Water tank driver	1	
Welder		2
Woodworking machinist		2
TOTAL	16	65

Each item on the PAQ was rated on a scale, usually a six-point scale. A job's attribute rating was calculated by weighting the job's ratings on the PAQ scales according to the values given in the table of Median Attribute Ratings for Job Elements of the PAQ, in Mecham and McCormick (1969). For example, the job's scale rating on the item "written materials" was multiplied by 5 to give that item's total for the attribute "Verbal comprehension", by 3 for the attribute "Word fluency" etc. The item totals were then added to give a score for each attribute. A short definition of each attribute is given in Appendix A.

2.3.2 Employer Attitude Assessment Scale

The deaf as workers were compared with the hearing on thirteen dimensions. Each dimension was judged on a five-point semantic differential scale. The thirteen dimensions, in the order they appeared on the questionnaire (see Appendix B) were as follows:

hardworking	-	lazy
intelligent	-	stupid
loyal	-	disloyal
reliable	-	unreliable
dexterous	-	clumsy
fast	-	slow
efficient	-	inefficient
trustworthy	-	untrustworthy
responsible	-	irresponsible
trainable	-	untrainable
productive	-	unproductive
non-aggressive	-	aggressive
trustful	-	suspicious

Each point on the scale was allocated a number, ranging from 1 point for the most negative position to 5 points for the most positive position. Three points on the scale indicated a neutral position on that particular dimension.

3 RESULTS

3.1 PAQ

Table 2.1 shows the number of jobs in each occupation and employer sector, that were analysed in the investigation. The results of the analysis are given in Table 3.1 (Column 1) and illustrated graphically in Figure 3.1.

TABLE 3.1
MEAN ATTRIBUTE RATINGS ON REVISED PAQ

Attribute*	Column 1		Column 2	
	Jobs done by the deaf		Skilled jobs	
	\bar{x}	s	\bar{x}	s
Verbal comprehension	214,8	81,3	246,0	22,1
Word fluency	178,6	71,8	208,0	19,3
Oral communication	187,4	72,1	214,3	19,9
Numerical computation	120,5	53,4	123,0	15,7
Arithmetic reasoning	171,8	68,8	184,8	16,6
Convergent thinking	243,4	91,4	285,5	15,6
Divergent thinking	191,0	74,4	216,0	18,5
Intelligence	280,9	104,5	326,3	18,8
Long-term memory	282,6	102,1	334,4	19,4
Short-term memory	274,4	100,7	309,4	23,2
Visual form perception	181,3	69,7	204,6	11,2
Perceptual speed	248,8	86,6	283,2	14,1
Closure	219,1	84,2	257,5	11,9
Movement detection	93,6	49,4	111,3	18,9
Spatial visualisation	159,1	63,4	180,2	14,1
Near visual acuity	253,0	86,7	280,3	19,4
Far visual acuity	156,7	65,9	181,5	9,6
Depth perception	115,1	55,2	123,2	11,3
Colour discrimination	90,2	39,3	108,9	5,3
Auditory acuity	142,5	63,0	167,9	8,6
Tactual acuity	87,3	33,4	95,6	14,1
Body orientation	95,6	33,2	112,5	5,7
Kinesthesia	76,6	31,1	89,8	11,9
Finger dexterity	75,5	25,3	78,6	13,2
Manual dexterity	122,0	41,0	124,8	18,2
Arm/hand positioning	102,4	35,3	112,0	14,3
Arm/hand steadiness	80,6	31,6	84,8	17,7
Continuous muscular control	107,5	36,5	124,6	8,3
Eye-hand co-ordination	99,0	35,9	103,9	15,8
Eye-hand-foot co-ordination	24,9	14,3	30,5	4,6
Simple reaction time	89,7	39,7	104,9	17,7
Response integration	139,0	44,6	151,6	14,7

(Continued)

TABLE 3.1 (CONTINUED)

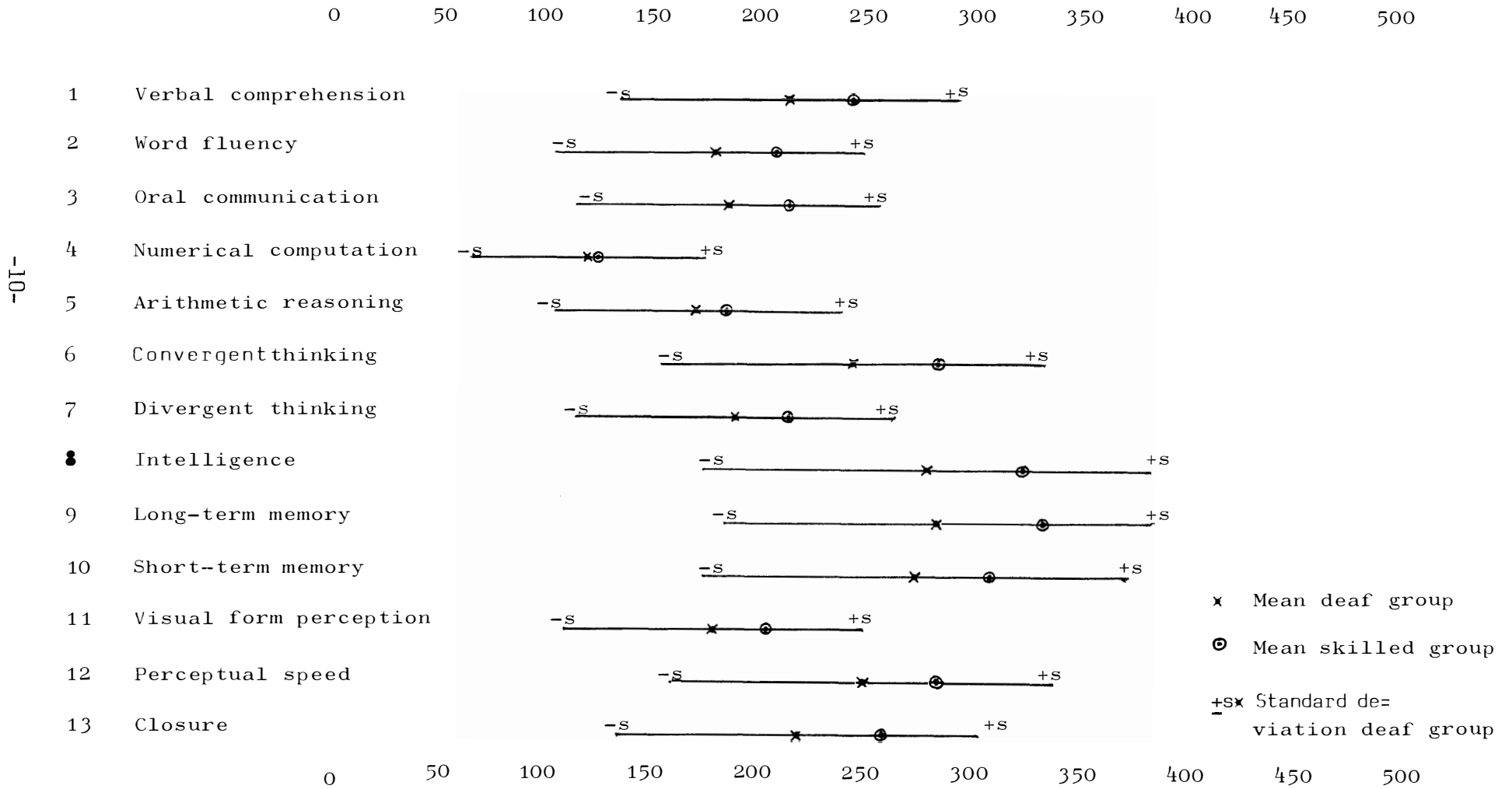
Attribute*	Column 1		Column 2	
	Jobs done by the deaf		Skilled jobs	
	\bar{x}	s	\bar{x}	s
Mechanical ability	203,2	75,1	229,5	15,2
Repetitive/short-cycle operations	182,4	61,4	196,3	19,1
Dealing with things/objects	200,7	78,3	230,8	14,9
Processes/machines/techniques	196,7	73,8	215,4	25,2
Scientific/technical activities	197,3	79,0	235,7	14,7
Dealing with people	136,9	53,9	166,7	11,6
Social welfare	122,1	47,5	139,5	9,3
Influencing people	88,7	37,8	112,2	10,8
Directing/controlling/planning	188,1	71,8	218,6	14,6
Personal risk	48,1	20,5	59,2	4,6
Conflicting/ambiguous information	281,0	106,5	336,4	15,5
Working under specific instructions	191,1	65,6	202,8	17,9
Sensory alertness	310,2	110,0	358,8	20,9
Attainment of set standards	300,6	103,6	355,1	19,6
Sensory/judgemental criteria	338,0	125,9	404,1	21,3
Prestige/esteem from others	189,1	72,4	228,6	14,2
Tangible/physical end-products	153,5	50,6	164,4	14,8
Interpretation from personal viewpoint	177,5	64,3	215,9	7,6
Susceptibility to fatigue	195,8	66,6	225,0	17,0
Dealing with concepts/information	229,3	90,6	266,0	17,9

*See Appendix A

The aim of the analysis was to determine whether an attribute profile could be constructed for jobs that are suitable for the deaf. Had such a profile emerged from the analysis of jobs in which the deaf are at present employed, jobs in which they are not at present employed would have been analysed and the attribute profiles compared. The selection of jobs suitable for the deaf would then have been facilitated. Since different jobs require different attributes, the ratings on each attributes for all jobs would not necessarily have been the same. However, such a profile should have been characterized by more or less the same rating for an attribute or number of attributes.

To illustrate this point, 5 skilled jobs (work done by a fitter and turner, a laboratory technician, a radio repairman, a plumber, and an electrician) that have common elements were analysed in the same way, and mean attribute ratings and standard deviations calculated. The results are given in Table 3.1 (Column 2). Column 2 shows that the standard deviations are usually less than 10 per cent of the mean, and therefore relatively small.

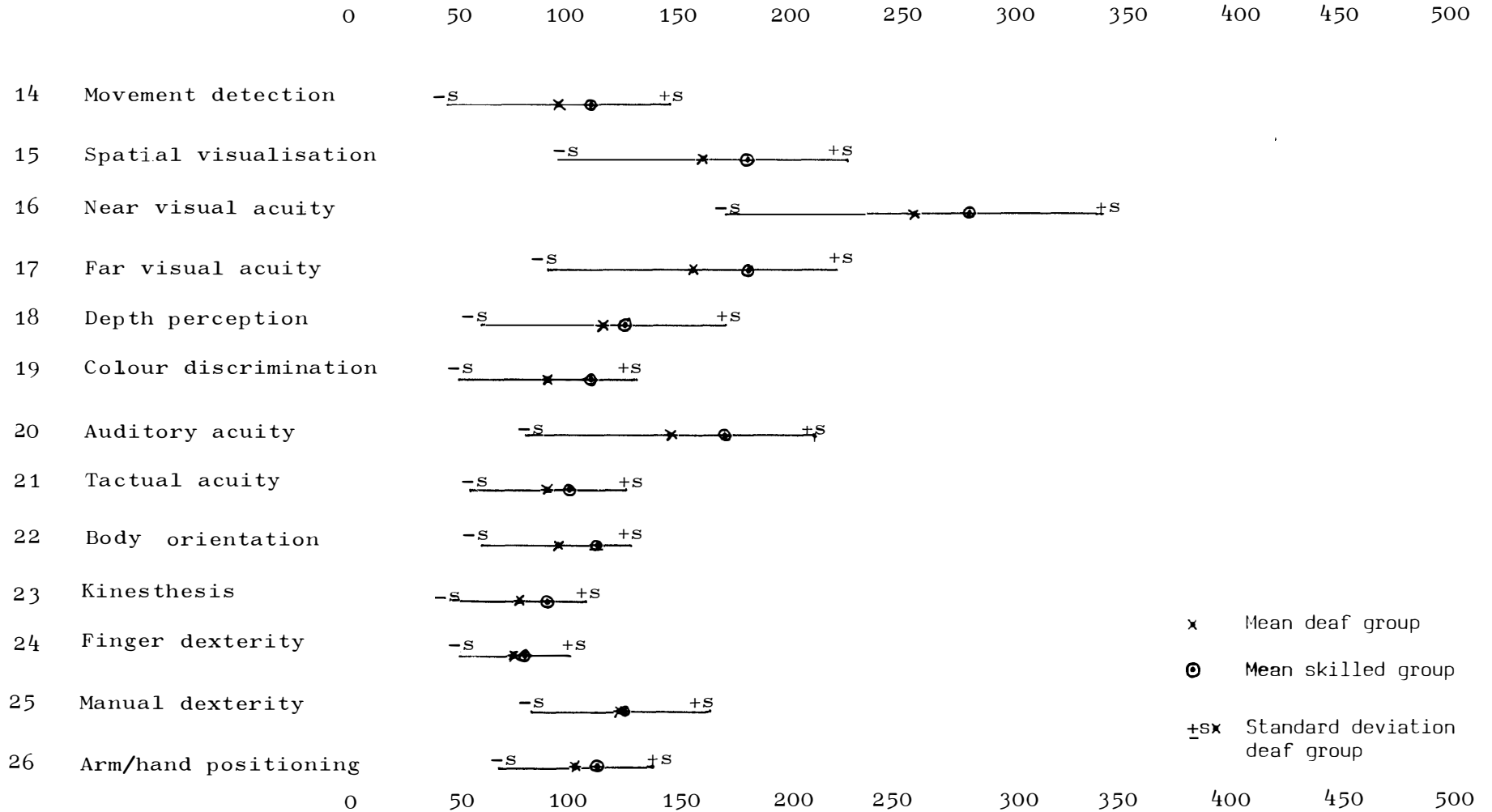
FIGURE 3.1
MEAN ATTRIBUTE RATINGS ON REVISED PAQ



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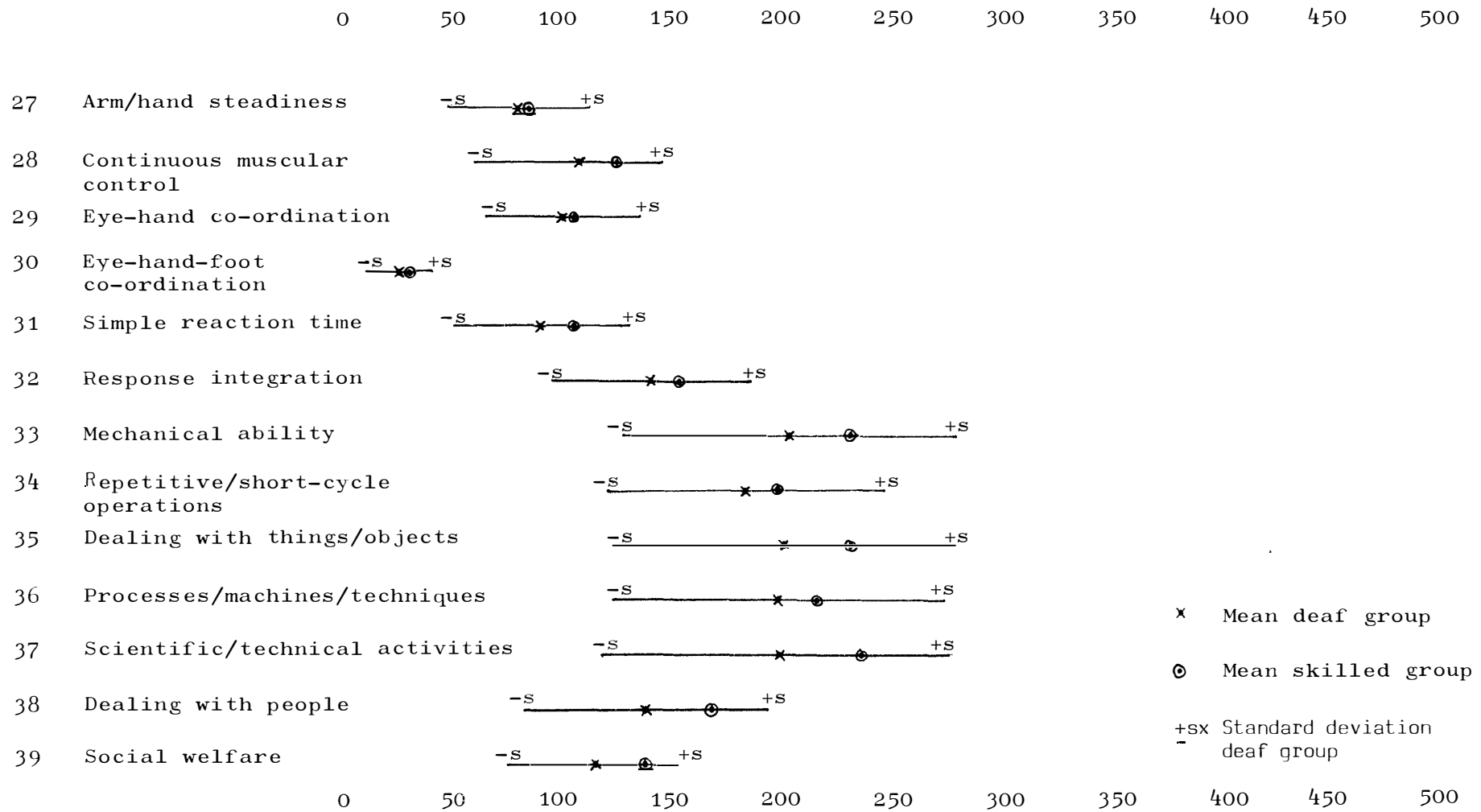
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FIGURE 3.1 (Cont.)
 MEAN ATTRIBUTE RATINGS ON REVISED PAQ



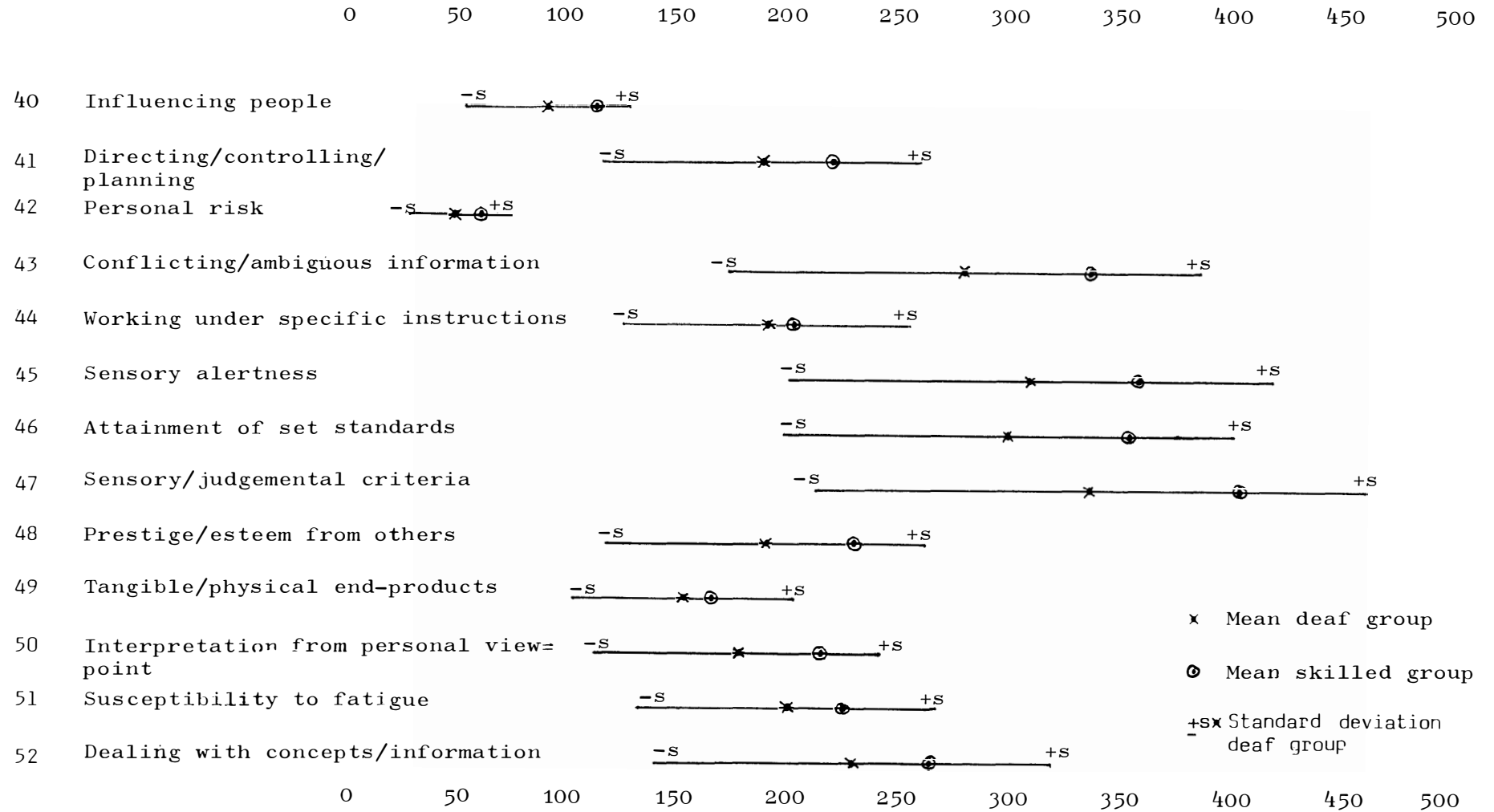
x Mean deaf group
 ● Mean skilled group
 ±s Standard deviation deaf group

FIGURE 3.1 (Cont.)
 MEAN ATTRIBUTE RATINGS ON REVISED PAQ



x Mean deaf group
 o Mean skilled group
 +sx Standard deviation deaf group

FIGURE 3.1 (Cont.)
 MEAN ATTRIBUTE RATINGS ON REVISED PAQ



Attributes for which the standard deviations are even smaller, that is less than 5 per cent of the mean, are, for example, colour discrimination, body orientation, and interpretation from a personal viewpoint. These small standard deviations indicate that the 5 jobs are very similar with regard to the required level of a number of attributes. Accordingly an attribute profile can be constructed.

The results obtained from the analysis of jobs done by the deaf (Column 1) show relatively large standard deviations, usually more than 30 per cent of the mean. Obviously, therefore, jobs done by the deaf have a large range in the levels of each attribute required for the job. Even those attributes in which the deaf are handicapped, namely verbal comprehension, word fluency and oral communication, show standard deviations of 37,8, 40,2 and 38,5 per cent of the means respectively. Thus no clear attribute profile of jobs suitable for the deaf could be determined. The ability of a deaf person to perform a job satisfactorily would seem to depend less on the nature of the job than on the aptitudes and ability of the deaf person himself.

The ways in which the deaf and their employers overcome their problems are discussed in Paragraph 3.3.

3.2 EMPLOYER ATTITUDE

Table 3.2 and Figure 3.2 reflect the comparison made by 72 employers between deaf and hearing people.

On 9 of the 13 dimensions, employers rated the deaf more positively as workers than the hearing: in particular, with differences significant at the 0,01 level, the deaf were rated more hardworking, loyal, reliable, efficient, trustworthy and productive and with a difference significant at the 0,05 level, more responsible. Compared with the hearing, the deaf were regarded as more suspicious and more aggressive. The deaf were regarded as about as trainable as the hearing.

TABLE 3.2
AVERAGE RATINGS BY EMPLOYERS OF DEAF AND HEARING WORKERS

Dimension	Deaf		Hearing	
	\bar{X}	s	\bar{X}	s
Hardworking - lazy*	3,9	0,7	3,1	0,4
Intelligent - stupid	3,5	0,7	3,3	0,6
Loyal - disloyal*	3,7	0,9	3,1	0,7
Reliable - unreliable*	3,6	1,0	3,1	0,7
Dexterous - clumsy	3,3	0,7	3,3	0,6
Fast - slow	3,3	0,9	3,2	0,5
Efficient - inefficient*	3,5	0,8	3,2	0,5
Trustworthy - untrustworthy*	3,8	0,9	3,3	0,6
Responsible - irresponsible**	3,6	0,8	3,3	0,7
Trainable - untrainable	3,2	0,9	3,4	0,7
Productive - unproductive*	3,5	0,8	3,2	0,5
Non-aggressive - aggressive**	2,8	1,1	3,1	0,4
Trustful - suspicious*	2,8	0,9	3,2	0,5

*Difference between means significant at 1 per cent level

**Difference between means significant at 5 per cent level

3.3 PROBLEMS IN THE EMPLOYMENT OF THE DEAF

3.3.1 Co-workers

The majority of employers in the investigation reported that their deaf workers fitted in well with co-workers both socially and in the work situation. Some employers reported that some of their deaf workers had difficulty in understanding instructions, and this led to the deaf person taking longer to complete a piece of work or having to do it again. Comments by co-workers which were not understood, sometimes resulted in aggressiveness or suspiciousness in the deaf worker. Where there was more than one deaf employee, the deaf workers tended to stick together rather than mix with the hearing workers.

FIGURE 3.2
 RATING BY EMPLOYERS OF DEAF AND HEARING WORKERS



x Deaf o Hearing

3.3.2 Training

Several employers reported that their deaf workers had already been trained when they started their present job, so training had provided no problem. In most other cases, the type of work being done made it possible for the deaf person to be given on-the-job training by an experienced worker using gestures and some speech, as most deaf employees were able to lip-read quite well. Training which would normally have been done at technical college or university was usually done by means of correspondence courses or studying from books, although sometimes additional help by the supervisor was required for the deaf person to understand the technical language. One of the deaf employees in the investigation was attending university lectures part-time.

Training by any of these means usually took somewhat longer than the training of a hearing person for the same job.

3.3.3 Promotability

Most employers felt that deaf persons could not be promoted beyond certain limits, although a minority of employers stated that there was no block to the promotion of a deaf person, provided he had the other qualities necessary. The most frequently expressed reason for the lack of promotion opportunities for deaf persons, especially to managerial and other higher level jobs, was the communication difficulty; it was generally felt that a person in such positions would have to be able to supervise others and give instructions clearly and quickly, to use the telephone and to come into contact with people who were not accustomed to communicating with a deaf person (e.g. the public).

The other reasons given for non-promotability were the structure of the organization, i.e. there were no openings in that organization for persons in that particular job - and the low educational level of the deaf person.

From the results obtained in Phase 1 of the investigation, it is evident that there are no outstanding features of the jobs performed satisfactorily by the deaf which enable a profile of jobs suitable for the deaf to be constructed. The ability of a deaf person to do a job satisfactorily depends less on the nature of the job than on the aptitudes and ability of the individual deaf person. Phase 2 of the investigation was therefore not carried out.

Since the PAQ provides a very detailed analysis of a job, one of the reasons for there being so little difference between the jobs of deaf and hearing workers must be that problems of communication were overcome satisfactorily in the work situation.

This explanation is supported by the comments of employers who rated the use of verbal sources of information "moderate", "considerable" or even "very substantial" (average rating on a scale from 0 to 5 was 2,6). Most deaf employees were able to lip-read and learned to understand the person who usually gave them their work instructions. Instructions were usually given in simplified form (e.g. shorter sentences), supplemented with gestures, diagrams (where appropriate) and written instructions. It was suggested by one employer that the best solution from an employer's point of view would be to staff an entire section with deaf workers, who could then communicate with one another more easily and train newcomers to the job, rather than to try to accommodate individual deaf persons scattered throughout his organization. This would also make it possible for deaf people to be promoted within the department.

Difficulty in communicating with people outside the organization was seen as more of a problem. A deaf sub-accountant in a bank, who dealt constantly with outside clients, used the telex instead of the telephone; a deaf head carpenter who had to receive job instructions by telephone had a subordinate who took messages. Counter work with the public will always be impossible for the deaf person, but with careful planning, adaptations can often be made so that the deaf person will be able to obtain relevant experience in an alternative area of equal value to himself and his employer.

It is evident that those who employ deaf persons find them significantly superior to the average hearing worker on a number of important worker characteristics. Deaf workers are more hardworking, loyal, reliable, efficient, trustworthy, productive and responsible than their hearing colleagues. That the deaf are more suspicious and aggressive than the hearing is understandable, and does not effect their ability to perform their work satisfactorily from the employer's point of view.

The outstanding feature of all the employers interviewed was their willingness to make adaptations so that their deaf workers could fit into the work situation, to take time to give instructions in such a way that they would be understood, and to take a personal interest in their deaf workers so that they were able to communicate with them. Several employers stated that they would willingly employ any deaf workers who had the qualifications for the job.

The importance of an understanding employer to the adjustment of a deaf person to his work cannot be overemphasised, but there is no reason why the deaf should be limited to low-level jobs.

APPENDIX A
LIST OF ATTRIBUTES

Attributes of an "aptitude" nature

- 1 Verbal comprehension: ability to understand the meaning of words and the ideas associated with them.
- 2 Word fluency: ability rapidly to produce words associated with a given word.
- 3 Oral communication: ability to communicate ideas with gestures or with spoken or written words.
- 4 Numerical computation: ability to manipulate quantitative symbols rapidly and accurately, as in various arithmetic operations.
- 5 Arithmetic reasoning: ability to reason abstractly using quantitative concepts and symbols.
- 6 Convergent thinking: ability to select from possible alternative methods, the method of processing information that leads to potentially the best answer or solution to a problem.
- 7 Divergent thinking: ability to generate or conceive of new or innovative ideas or solutions to a problem.
- 8 Intelligence: the level of abstraction or symbolic complexity with which one can ultimately deal.
- 9 Long-term memory: ability to learn and store pertinent information and selectively to retrieve or recall, much later in time, that which is relevant to a specific context.
- 10 Short-term memory: ability to learn and store pertinent information and selectively to retrieve or recall, within a brief period of time, that which is relevant to a specific context.
- 11 Visual form perception: ability to perceive pertinent detail or configuration in a complex visual stimulus.
- 12 Perceptual speed: ability to make rapid discriminations of visual detail.
- 13 Closure: ability to organize perceptually a chaotic or disorganized field into a single perception.
- 14 Movement detection: ability to detect physical movement of objects and to judge their direction.
- 15 Spatial visualisation: ability mentally to manipulate visual images in two or three dimensions.

- 16 Near visual acuity: ability to perceive detail at normal reading distance.
- 17 Far visual acuity: ability to perceive detail at distances beyond normal reading distance.
- 18 Depth perception: ability to estimate depth of distances or objects (or to judge their physical relationships in space).
- 19 Colour discrimination: ability to perceive similarities or differences in colours or in shades of the same colour, or to identify certain colours.
- 20 Auditory acuity: ability to perceive relevant cues by sound.
- 21 Tactual acuity: ability to perceive relevant cues by touch.
- 22 Body orientation: ability to maintain body orientation with respect to balance and motion.
- 23 Kinesthesia: ability to sense position and movement of body members.
- 24 Finger dexterity: ability to manipulate small objects (with the fingers) rapidly and accurately.
- 25 Manual dexterity: ability to manipulate things with the hands.
- 26 Arm/hand positioning: ability to make precise, accurate movements of the hands and arms.
- 27 Arm/hand steadiness: ability to keep the hands and arms immobilized in a set position with minimal tremor.
- 28 Continuous muscular control: ability to exert continuous control over external devices through continual use of body limbs.
- 29 Eye-hand co-ordination: ability to co-ordinate hand movements with visual stimuli.
- 30 Eye-hand-foot co-ordination: ability to move the hand and foot co-ordinately with one another in accordance with visual stimuli.
- 31 Simple reaction time: the period of time elapsing between the appearance of any stimulus and the initiation of an appropriate response.
- 32 Response integration: ability to perform rapidly various appropriate psychomotor responses in proper sequence.

- 33 Mechanical ability: ability to determine the functional interrelationships of parts within a mechanical system.
- Attributes of an interest or temperament nature as characterised by different types of job situations to which people must adjust
- 34 Repetitive/short-cycle operations: operations carried out according to set procedures or sequences.
- 35 Dealing with things/objects: preference for situations involving activities concerned with things and objects rather than activities concerned with people or the communication of ideas.
- 36 Processes/machines/techniques: situations which are non-social in nature being primarily concerned with methods and procedures often of a mechanical or chemical nature.
- 37 Scientific/technical activities: using technical methods or investigating natural phenomena using scientific procedures.
- 38 Dealing with people: i.e. personal contacts beyond giving and receiving instructions.
- 39 Social welfare: working with people for their presumed good.
- 40 Influencing people: influencing opinions, attitudes or judgements about ideas or things.
- 41 Directing/controlling/planning: operations involving the activities of others, or processes with which others are involved.
- 42 Personal risk: risk of physical or mental illness or injury.
- 43 Conflicting/ambiguous information: ability to tolerate and critically to evaluate information of an uncertain or opposing nature.
- 44 Working under specific instructions: i.e. those that allow little or no room for independent action or judgement in working out job problems.
- 45 Sensory alertness: alertness over extended periods of time.
- 46 Attainment of set standards: attainment of set limits, tolerances, or standards.

- 47 Sensory/judgmental criteria: arriving at generalisations, judgments, or decisions which require sensory discrimination or cognitive appraisal.
- 48 Prestige/esteem from others: working in situations resulting in high regard from others.
- 49 Tangible/physical end-products: working with material elements or parts which ultimately result in a physical product.
- 50 Interpretation from personal viewpoint: interpretation of feelings, ideas, or facts in terms of personal viewpoint or values.
- 51 Susceptibility to fatigue: diminished ability to do work, either physical or mental, as a consequence of previous and recent work done.
- 52 Dealing with concepts/information: preference for situations that involve conceptual or informative ideas and the possible communication of these ideas to others.

APPENDIX B

HUMAN SCIENCES RESEARCH COUNCIL
INSTITUTE FOR MANPOWER RESEARCH

PROJECT MM-92

CAREERS FOR DEAF PERSONS WITH POST-SCHOOL QUALIFICATIONS

RECORD NUMBER

RATER

FIRM

The Institute for Manpower Research of the HSRC is at present undertaking research into the ability of totally deaf persons to perform certain types of work. As background to these studies, the Institute wishes to determine how the employer rates his employees in these jobs.

Please rate the deaf (D) and hearing (H) workers according to the aspects overleaf. You are requested to make a in one of the 0's

Example:

Beautiful	D	0	0	✓	0	0	D	Ugly
	H	0	0	0	✓	0	H	

The position of the mark indicates the rating. In the above example, the deaf workers have been rated more beautiful than the hearing workers. Please rate the group in general.

QUESTIONNAIRE

Lazy	D	0	0	0	0	0	0	D	Hardworking
	H	0	0	0	0	0	0	H	
Stupid	D	0	0	0	0	0	0	D	Intelligent
	H	0	0	0	0	0	0	H	
Loyal	D	0	0	0	0	0	0	D	Disloyal
	H	0	0	0	0	0	0	H	
Reliable	D	0	0	0	0	0	0	D	Unreliable
	H	0	0	0	0	0	0	H	
Clumsy	D	0	0	0	0	0	0	D	Dexterous
	H	0	0	0	0	0	0	H	
Fast	D	0	0	0	0	0	0	D	Slow
	H	0	0	0	0	0	0	H	
Efficient	D	0	0	0	0	0	0	D	Inefficient
	H	0	0	0	0	0	0	H	
Trustworthy	D	0	0	0	0	0	0	D	Untrustworthy
	H	0	0	0	0	0	0	H	
Responsible	D	0	0	0	0	0	0	D	Irresponsible
	H	0	0	0	0	0	0	H	
Untrainable	D	0	0	0	0	0	0	D	Trainable
	H	0	0	0	0	0	0	H	
Productive	D	0	0	0	0	0	0	D	Unproductive
	H	0	0	0	0	0	0	H	
Aggressive	D	0	0	0	0	0	0	D	Non-aggressive
	H	0	0	0	0	0	0	H	
Trustful	D	0	0	0	0	0	0	D	Suspicious
	H	0	0	0	0	0	0	H	

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