ATTITUDES TOWARD THE DEAF: A GUTTMAN FACET THEORY ANALYSIS OF THEIR CONTENT, STRUCTURE, AND DETERMINANTS

Thesis for the Degree of Ph. D.

MICHIGAN STATE UNIVERSITY

THOMAS H. POULOS

1970

This is to certify that the

thesis entitled

ATTITUDES TOWARD THE DEAF: A GUTTMAN FACET THEORY ANALYSIS OF THEIR CONTENT, STRUCTURE AND DETERMINANTS

presented by

THOMAS H. POULOS

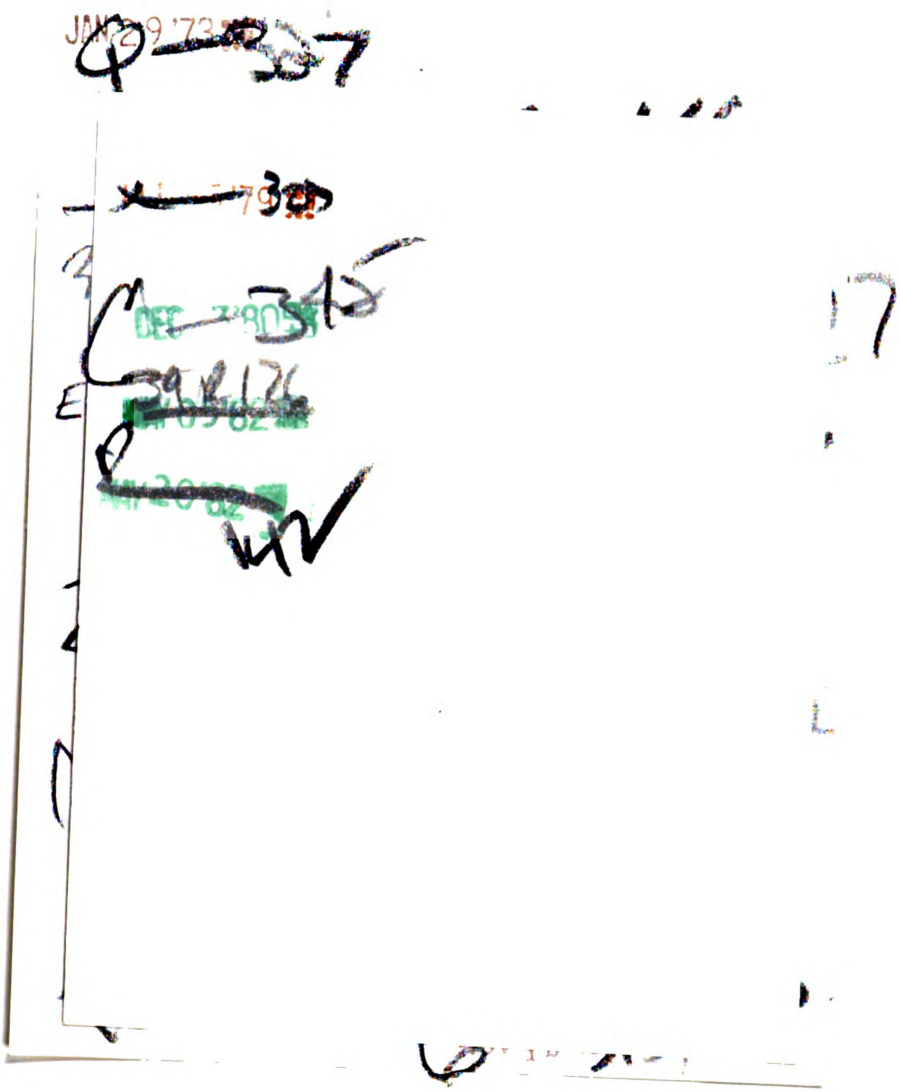
has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Education

John E Gordon
Major professor

Date July 9, 1970

O-169



ABSTRACT

ATTITUDES TOWARD THE DEAF: A GUTTMAN FACET THEORY ANALYSIS OF THEIR CONTENT, STRUCTURE, AND DETERMINANTS

By

Thomas H. Poulos

Problem

Attitudes toward the deaf determine in part whether the deaf obtain the encouragement, guidance, and education to prepare them for socially useful, productive, and independent lives. The aim of this study was to examine the relationships of certain variables to deafness and to assess the attitudes of five designated groups toward deafness: Teachers of the Deaf, Regular School Teachers, Mothers of Deaf Children, Prospective Employers (Managers-Executives), and Mothers of Non-Deaf Children.

Instrumentation and Theory

The Attitude Behavior Scale-Deafness (ABS-DF) as used in this study is a revised version of the ABS-MR instrument as developed by Jordan[1] and is related to a

[1]The cross-national attitude study is under the direction of John E. Jordan, College of Education, Michigan State University, East Lansing, Michigan 48823.

multi-national study of attitudes toward physical, mental-emotional, and racial-ethnic differences. The major changes made for Jordan's scale on mental retardation, with the exception of the section on Knowledge, were the substitution in the scale of the terms deaf or deafness for any reference to mentally retarded or mental retardation. As is true with the original ABS-MR instrument, the ABS-DF consists of six levels, each corresponding to a certain level of the hypothesized attitude universe.

The six levels are called (a) Societal Stereotype, (b) Societal Norm, (c) Personal Moral Interaction, (d) Personal Hypothetical Behavior, (e) Personal Feelings, and (f) Actual Personal Action. Included in the scale were those items that tapped the predictor variables of the study which Jordan (1968) has labeled determinants of attitudes: (a) contact, (b) knowledge, (c) values, and (d) demographic factors. The variables in the study were intercorrelated to enable examination of relationships for both content and intensity scores of the criterion (ABS-DF) across each level with 21 independent variables. This facilitated testing 14 hypotheses using simple correlations, multiple correlations, analysis of variance statistical techniques, and the Q^2 statistic.

Results

The results of this study indicated values, knowledge, contact, and certain demographic variables were limited

predictors of attitudes toward the deaf. The facet analysis approach to scale construction was given support when the simplex matrices formed a Guttman simplex as predicted.

In view of the surprising results in responses made by mothers of deaf children and the assessment of responses made by teachers of the deaf for the variable on amount of education, recommendations were made for further research. The importance of knowledge about deafness was noted; especially in the expansion of the principle of day school placement of the deaf, and attitudes were posited to be especially important in considering job placement.

In-service programs for teachers as well as teacher training programs, parent education programs, and public informational services can benefit from the results obtained in this study especially if it concerns attempts at behavioral changes toward acceptance of the deaf and the development of positive attitudes toward the deaf.

ATTITUDES TOWARD THE DEAF: A GUTTMAN FACET THEORY ANALYSIS OF THEIR CONTENT, STRUCTURE, AND DETERMINANTS

By

Thomas H. Poulos

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

College of Education

Department of Elementary and Special Education

1970

PREFACE

This study is one of a series originated by Jordan (1968) and further refined by several investigators (Erb, 1969; Gottlieb, 1970; Hamersma, 1969; Maierle, 1969; Morin, 1969; Whitman, 1970; and Harrelson, 1970). Though the major project has to date predominantly investigated attitudes toward the mentally retarded, the total scope of the coordinated series will include a study of attitudes toward other minority and handicapped groups as well as racial/ethnic groups.

Though the researchers collaborated in many aspects, the data design, procedural, and analysis methods differed somewhat in each study. The interpretations of data in each study are those of each individual author.

The present study benefitted from the results and recommendations of the several studies and the final version of the Attitude Behavior Scale for the Deaf was made possible through their respective contributions.

ACKNOWLEDGEMENTS

I am indebted primarily to Dr. John E. Jordan and Dr. Clarence Winder for their invaluable assistance. Dr. Jordan served as chairman of my doctoral committee and guided the entire research effort from inception to completion, while Dr. Winder, Dean of the College of Social Sciences was most encouraging in the selection and development of a study in this area for the deaf.

I would also like to express my appreciation to the remaining members of my committee, Dr. William Durr and Mrs. Vivian Stevenson for their invaluable support, encouragement and suggestions in the fulfillment of this project.

Finally, I would like to thank my wife, Grace, for guidance and inspiration and for her invaluable assistance in proofreading of the manuscript.

TABLE OF CONTENTS

	Page
PREFACE	ii
ACKNOWLEDGEMENTS	iii
LIST OF TABLES	vii
Chapter	
I. INTRODUCTION	1
II. REVIEW OF RESEARCH ON ATTITUDES	8
Attitude Measurement	8
Attitudes Toward the Exceptional	13
Guttman-Jordan Attitude Research	28
Attitude Intensity	31
Summary	35
III. INSTRUMENTATION AND VARIABLES	37
Facet Theory and the ABS-MR Scale	37
Guttman's Four Level Theory	38
Jordan's Expanded Six Level Adaptation	41
ABS-DF Intensity	48
Standardization Study	49
Validity	52
Reliability	55
Combining Content and Intensity	58
Instrument Limitations	59
ABS-DF Adapted Form of ABS-MR Attitude Scale	63
Independent Variables	64
Demographic Variables	65
Change Orientation	65
Educational Aid and Planning	65
Contact with Attitude Object Persons	66
Efficacy	66
Attitude Object	67

Chapter Page

IV. DESIGN AND ANALYSIS PROCEDURES 69

Major Research Aim 69
Sample 69
Hypotheses of the Study 71

Relating Attitudes and Values . . . 71
Relating Attitudes and Knowledge . . 71
Relating Attitudes and Contact . . . 71
Relating Attitudes and Religiosity. . 72
Relating Attitudes and Demographic Variables 72
Relating Attitudes and Change Orientation 72
Relating Attitudes and Opinions on Educational Aid and Planning. . . 72
Relating Attitudes and Group Membership. 73
Relating Attitudes and Multi-dimensionality 73

Analysis Procedures. 73

Descriptive Statistics. 73
Correlational Statistics 75
Analysis of Variance Statistics. . . 76
The $\underline{Q}^2$ Statistic. 78

V. ANALYSIS OF THE DATA 80

ABS-DF Reliability 80
Major Research Hypotheses. 82

Relating Attitudes and Efficacy. . . 83
Relating Attitudes and Knowledge . . 85
Relating Attitudes and Contact . . . 87
Relating Attitudes and Religiosity. . 105
Relating Attitudes and Demographic Variables 107
Relating Attitudes and Change Orientation 112
Relating Attitudes and Opinions on Educational Aid and Planning. . . 125
Relating Attitudes and Group Membership. 129
Relating Attitudes and Multi-dimensionality 133

Chapter Page

VI. SUMMARY, DISCUSSION, AND RECOMMENDATIONS. . 138

Summary of Review of Research 138
Instrumentation 139
Results. 143
Discussion. 143

Relating Attitudes and Efficacy. . . 143
Relating Attitudes and Knowledge . . 145
Relating Attitudes and Contact . . . 146
Relating Attitudes and Religiosity. . 148
Relating Attitudes and Demographic Variables 149
Relating Attitudes and Change Orientation 151
Relating Attitudes and Opinions on Educational Aid and Planning. . . 153
Relating Attitudes and Group Membership. 154
Relating Attitudes and Multi-dimensionality 154

Recommendations 155
Implications 156

REFERENCES 158

APPENDICES 166

Appendix A.1 Attitude Behavior Scale: ABS-MR 167
Appendix A.2 Attitude Behavior Scale: ABS-DF 200
Appendix B Statistical Material. . . 232
Appendix C Glossary. 235

LIST OF TABLES

Table		Page
1.	Final items of the Cowen Attitude to Deafness Scale with direction of keying and two independent sets of item-test correlations	21
2.	Basic facets used to determine component structure of an attitude universe . . .	38
3.	Guttman facet profiles and descriptive labels of attitude levels	39
4.	Jordan facets used to determine joint struction of an attitude universe . . .	42
5.	Joint level, profile composition, and labels for six types of attitude struction. . .	43
6.	Comparison of Guttman and Jordan facet designations	44
7.	Five-facet six-level system of attitude verbalizations: Levels, facet profiles, and definitional statements for twelve permutations	45
8.	A mapping sentence for the facet analysis of conjoint and disjoint struction of attitudes toward specified persons . . .	47
9.	Correlation matrices of joint struction for standardization groups on the six level ABS-MR	51
10.	Sample sizes, means, F tests, and multiple means results for the ABS-MR for the SER, ED200, and Belize samples	54
11.	Hoyt reliability coefficients for ABS-MR standardization groups	57
12.	Hoyt reliability coefficients for ABS-DF groups	57

Table		Page
13.	Combined content-intensity scoring procedure for ABS-MR levels 1-6	60
14.	ABS-DF: Basic variable list by IBM card and column, Poulos study	74
15.	ABS-DF Hoyt reliabilities for content and combined content-intensity scores for samples	81
16.	ABS-DF efficacy variable correlations for samples	84
17.	ABS-DF knowledge variable correlations and significance levels for samples	86
18.	ABS-DF intensity, content, and combined content and intensity correlations and significance levels with amount of contact with deaf persons for samples . .	89
19a.	Multiple and partial correlations between ABS-DF and contact variables for teachers of the deaf.	92
19b.	Multiple and partial correlations between ABS-DF and contact variables for regular school teachers	93
19c.	Multiple and partial correlations between ABS-DF and contact variables for mothers of the deaf.	94
19d.	Multiple and partial correlations between ABS-DF and contact variables for managers-executives	95
19e.	Multiple and partial correlations between ABS-DF and contact variables for mothers of the non-deaf	96
19f.	Multiple and partial correlations between ABS-DF and contact variables for females .	97
19g.	Multiple and partial correlations between ABS-DF and contact variables for males. .	98
19h.	Multiple and partial correlations between ABS-DF and contact variables for total sample	99

Table		Page
20.	ABS-DF stated importance of religion correlation for samples.	106
21.	ABS-DF stated adherence to religion correlations for samples	108
22.	ABS-DF amount of education correlations for samples	109
23.	ABS-DF age correlations for samples. . . .	111
24a.	Multiple and partial correlations between ABS-DF and change orientation variables for teachers of the deaf	114
24b.	Multiple and partial correlations between ABS-DF and change orientation variables for regular school teachers	115
24c.	Multiple and partial correlations between ABS-DF and change orientation variables for mothers of the deaf.	116
24d.	Multiple and partial correlations between ABS-DF and change orientation variables for managers-executives.	117
24e.	Multiple and partial correlations between ABS-DF and change orientation variables for mothers of non-deaf.	118
24f.	Multiple and partial correlations between ABS-DF and change orientation variables for females.	119
24g.	Multiple and partial correlations between ABS-DF and change orientation variables for males	120
24h.	Multiple and partial correlations between ABS-DF and change orientation variables for total sample	121
25.	ABS-DF agreement with local and federal aid to education correlations for samples . .	126
26.	ABS-DF agreement with centralized planning of education correlations for samples . .	128

Table Page

27. Adjusted means, F tests, and significant levels for the variables of the study by group and sex--by ABS-DF content scores only. 130

28. Adjusted means, F tests, and significant levels for the variables of the study by group and sex--by ABS-DF content-intensity scores combined 132

29. Simplex results for research groups on six levels of the ABS-DF. 134

30. N's, means, and standard deviations for ABS-DF samples. 233

CHAPTER I

INTRODUCTION

In the United States there were 44,020 children receiving instruction in schools for the deaf in 1968; of this total 19,828 were in residential schools, both public and private, while 24,192 children were in public or private day schools or day classes.[1] In 1958 there were 25,525 receiving instruction with 16,523 in residential schools and 8,792 in day schools.[2]

It is noted from the above that though there has been an increase in enrollment in residential schools that a greater number of children are enrolled in day centers. The number of day schools and classes has increased considerably during the past ten years. More deaf children are in schools serving the normal hearing than ever before. In some instances day schools for the deaf are complete units within a larger complex of normal hearing classes

---

[1]Powrie V. Doctor, et al., "Tabular Summary--Schools and Classes for the Deaf in the United States," American Annals of the Deaf, 1969, 622, 624, 114.

[2]Powrie V. Doctor, et al., "Tabular Statement of American Schools for the Deaf, October 31, 1958," American Annals of the Deaf, 1958, 104, 154.

while in others, one or several classes are housed in schools for the normal hearing with an integrated type program serving the deaf and hard of hearing.

With this trend to greater placement of deaf children in day school facilities, there is greater contact with deaf children by normal hearing pupils and teachers of normal hearing pupils as well. The acceptance or rejection of hearing handicapped children in the regular public school is one type of problem; the attitudes of both teachers and normal hearing pupils can be regarded as an influential factor related to this problem. Likewise the mobility of hearing handicapped children from home to school, about the school, and from school to their respective homes each day has placed the hearing handicapped in greater contact with hearing individuals than when they were limited to a residential school environment.

In our modern society we strive to have improved educational programs for our physically handicapped individuals. Pursuant to that goal we hope that programs for the training and education of the deaf will result in the deaf becoming self supporting and contributing individuals in our society. Present day technological developments in industry have placed new challenges on our vocational programs--especially for the handicapped. Automation has seen the elimination of a number of job opportunities for these handicapped. As a result, vocational programs must continually keep abreast of developments and prepare our

youth for new and improved tasks in our employment structure. The jobs for which many deaf individuals have been trained are becoming extinct. New competitive fields for the deaf in line with automation need to be planned for in our educational and job training programs for the deaf. If the deaf are to contribute in a constructive manner to the productive aspect of our economy, the attitudes of prospective employers are important influences in job placement and job training.

Surveys of recent tabular statements of American Schools for the Deaf, as reported in the American Annals of the Deaf, indicate a great increase in pre-school programs for the deaf. Recent federal and state government grants have given great impetus to this pre-school movement. Whereas in the 1950's we saw great growth in pre-school programs for the handicapped, we now see in the 70's more and more inclusion of these programs in the public schools for hearing children. This increasing trend of having more and more pre-school programs for the hearing handicapped in day school programs makes for greater contact of handicapped pre-schoolers with hearing pre-schoolers; paralleling this is the increased "contact" with teachers of the non-handicapped. In 1958, there were 2,892 children in pre-school classes for the deaf; in 1968, there were 8,220 children in these classes. This is an increase of 280 per cent. Increased governmental support for these

programs may spur further growth of programs for these children. With this growth we will find a proportionate increase in participation of parents of pre-school children in these same school programs.

The number of supportive personnel necessary for all special programs during the past decade have increased greatly. As one views the result of federally-sponsored programs to increase the use of educational technology, the number of supportive specialists has expanded beyond those initially included in regular basic school staffs. The expanded programs available to the handicapped involve coordinating the services of many of these supportive personnel. The benefits derived may depend on the attitudes of these individuals to the handicapped, particularly if those same individuals are also available to serve the normal hearing children as well.

The new demands on teacher-training institutions to provide staff for these special programs increases with the expansion mentioned above. The attitudes of teachers to the deaf child may be likened somewhat to the effect of attitudes of teachers of the disadvantaged or the culturally deprived as reported by Goldberg (1967). In discussing the expectancy of educational capabilities of these children, he called attention to the relationship of actual achievement to preset attitudes toward expectancy of these children.

The preceding discussion implies that through early and adequate special programs and related services, the deaf can develop their potential for the benefit of themselves and society.

It follows from the foregoing that in order to meet the future needs of deaf children we need to know about the attitudes of groups of people who may have direct or indirect contact with the deaf. What are the attitudes of our society toward deaf persons? Not only will the reactions of our society directly influence the deaf in their own adjustment to living in our society but the attitudes of a society toward the deaf will influence the types of programs available for their education and training.

Underlying the basic philosophy of education of the deaf is the principle of training the deaf individual to become a useful citizen in our society. Inasmuch as our society is a hearing one, the deaf have the problem of fitting into this hearing pattern. The attitudes of persons making up his circle of influence is of great importance. Knowing or understanding these attitudes may help further to define and understand the environmental conditions precribing the circle about the hearing handicapped.

The aim of this study is to examine the relationships of certain variables to deafness and to assess the attitudes of designated groups toward deafness. The substantive aim of this study is:

1. To determine predominant value orientations and attitudes toward education, rehabilitation and social acceptance of the deaf among the following groups who have been selected as the principal respondents in this study:
    a. Teachers of the deaf . . . . . TDF
    b. Regular school teachers. . . . . RST
    c. Mothers of deaf children . . . . . MDF
    d. Mothers of non-deaf children . . . MND
    e. Prospective employers
        Businessmen and managers. . . . MAN
2. To assess the predictive validity of the following hypothesized determinants of attitudes toward the deaf:
    a. Demographic
    b. Socio-psychological
    c. Contactual
    d. Knowledge
3. To test the hypothesis that the Guttman simplex (Guttman, 1959, 1960) will be maintained across groups.

The instrument used to measure attitudes toward deaf persons was the Attitude Behavior Scale-Deafness (ABS-DF) as originally designed by Jordan (1968) and revised by Poulos (1970), which measures six levels of a person's interaction with the attitude object (deaf persons). The

scale will be discussed under the section dealing with instrumentation in Chapter III.

CHAPTER II

REVIEW OF RESEARCH ON ATTITUDES

Historically, attitude scales as reported by Stern (1963), have been used, as suggested by Watson in 1925, in the surveying of public opinion in general, and later in such opinion surveys as the Gallop poll. In opinion surveys there is less emphasis placed on "reliable" measurement of individuals. In contrast to opinion polls, attitude scales attempt to reliably test the attitude of each individual. Opinion surveys are usually done on an interview basis, asking one question on each of a number of topics. Attitude scales usually concentrate on one topic and use a number of questions measuring the same factor to obtain greater reliability and are usually paper-pencil tests. In contrast to the opinion surveys which have been used for political trends or commercial and consumer preferences, attitude scales have been used for more intensive research.

Attitude Measurement

Prior to 1928 attitude testing had been generally confined to simple questionnaires. According to Cronbach (1949), these reflected obvious weaknesses in the lack of

evidence that the separate questions measured the same attitude, and the arbitrary nature of the units of measurements. Thurstone (1928) developed a scale which consisted of 20 or more statements representative of several degrees of opinion. The method represented attitudes toward an object as being arranged on a continuous scale, ranging from highly acceptable or favorable toward the object, to the opposite extreme of highly unfavorable. Thurstone's 20-item scale had the subject indicate those statements to which he agreed. The statements had pre-set scale values ranging from 0, most unfavorable, through 5.5 for neutral statements and to 11.0 for most favorable. The score for the respondent is the median score of all the values of statements he chose.

Murphy, Murphy and Newcomb (1937) stated in evaluating the Thurstone Method that "no scale can really be called a scale unless one can tell from a given attitude that an individual will maintain every attitude falling to the right or to the left of that point . . ." Measurements are not as easy as black and white.

Thurstone's technique of scaling involved three steps: involving the preparation of items; sorting of statements by judges and scaling; and testing for relevance.

Likert's technique (1932) for constructing attitude scales centered around the collection of possible statements which had been presented on a trial test to many subjects.

The items were scored and each item correlated with the total test. Those items that did not correlate with the total score were discarded. Ambiguous items and those that were not of the same type as the rest of the scale were eliminated through this internal-consistency procedure. In the final scale, each respondent indicated his reaction to a statement; usually on a five point scale:

		Rating for Favorable Statements	Rating for Unfavorable Statements
Strongly Agree	SA	5	1
Agree	A	4	2
Undecided	U	3	3
Disagree	D	2	4
Strongly Disagree	SD	1	5

A favorable attitude was indicated by a high score and scores were interpreted on a relative basis which differed from Thurstone's absolute system of units.

Edwards and Kenney (1946), in a comparison of these two tests, indicated that the factors which make invalid "self reports" were present in both. Response sets influence the score in the Likert tests which tended to lower the validity, whereas in the Thurstone, because the directions required one to check the several statements with which he most agreed, there was no influencing effect due to response set. The Thurstone test was not as diagnostic as the Likert which required a response to every item thus enabling an item analysis to obtain a picture of reaction to specific questions.

The most frequently used attitude scales are the Thurstone, Likert, and Guttman methods of scale construction. Guttman's method (1944, 1947) is based upon the idea that items can be arranged in such an order that a person who responds in a positive way to any particular item would respond similarly to all other items having a lower rank. Consequently, if items can be arranged in this manner they are "scalable." In the development of a scale following this theme, a number of items about the attitude object are composed, and the array of items are administered to a group. The responses are analyzed to determine whether they are scalable. Shaw and Wright (1967) point out that since a given set of items may be scalable for one population but not for another, it is essential to check the scalability before Guttman scales are used with a population other than the one used for development.

McNemar (1946) was critical of attitude tests being used without their validity having been first established. This lack of validation in tests used was due to the inability of the test originators to find adequate criteria for comparison.

To check on verbal expressions of attitude as to whether they are honest and real, one needs to check them against outside criteria; one way is to check the results against the results of a group with known attitudes. Cronbach (1949) points out that attitude tests are more

likely to be valid when the respondents have no motive to conceal their true attitude.

The question of intensity of attitude is a factor of great importance in the interpretation of scores in the range of favorable to unfavorable rating. Neutral scores have been difficult to interpret, as a score between the two extremes may be due to indifference, or the respondent may be acquainted with the attitude object, or he may have conflicting feelings about the point in question. These questions dealing with intensity which were raised early in the use of attitude scales, need to be considered if scales are to be used extensively. It is difficult to reason from a general attitude that an individual holds the same opinion to all phases of an attitude object.

Shaw and Wright (1967), in speaking of the dimensions of attitudes, list the following characteristics:

1. The concepts that underlie attitude are evaluative in nature and specify some degree of "preferability" which is dependent upon the goal orientation of the conceiver.

2. Attitudes are construed as varying in quality and intensity on a continuum--positive through neutral to negative.

3. Attitudes are learned. . . .

4. Attitudes have specific social referents. . . .

5. Attitudes possess varying degrees of interrelatedness to one another.

6. Attitudes are relatively stable.

Since 1950 a number of more elaborate procedures for scale contruction and refinement were proposed by Guttman, Lazarsfeld, Coombs, Green and others. Shaw and Wright (1967) report that though the contributions of attitude research have been great, much effort had been wasted because of a lack of suitable instruments of measurement. Though some research needs were met, results were not always directly comparable because of this lack of a common base of instrumentation.

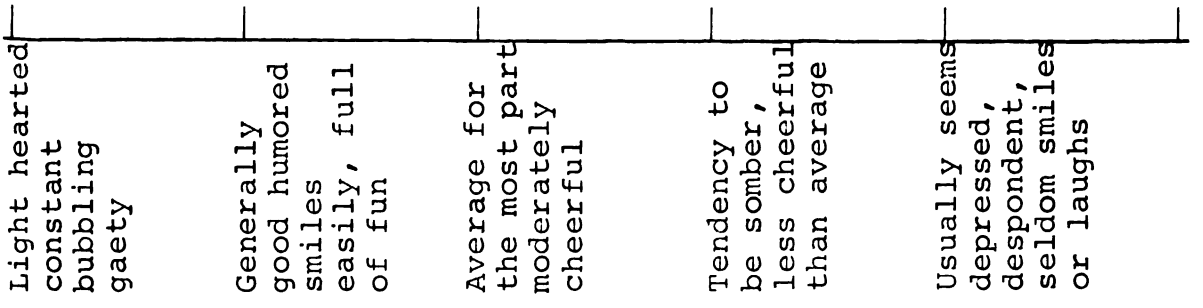
Attitudes Toward the Exceptional

A considerable amount of research is available in the literature dealing with attitude measurement and the modification of attitudes. A great portion of the research on attitudes include such areas as socio-economic status, race, and religion. As one surveys the field of special education and research on attitudes toward the physically handicapped, a number of studies have been reported. These included a study of attitudes of parents toward their own orthopedically handicapped children as reported by Coughlin (1941). In this study the attitudes of 51 parents were studied on the basis of case history material, and interviews were grouped into four broad categories namely:

1. Parents who had sufficient intellectual insight, and were adequately adjusted personally to accept their child's handicap, and were able to turn their efforts toward finding means to compensate for it;
2. Parents who accepted their handicapped child on an emotional level, with little or no intellectual insight;
3. Parents who understood the problems intellectually but could not accept their child on an emotional level;
4. Parents who could not accept their child emotionally or intellectually.

A study of attitudes of other individuals toward cripples was reported by Mussen and Barker (1944). In this study a rating scale was used; the subjects were 117 college students who were asked to assess the behavior characteristics of crippled individuals. The ratings included 24 personality and character traits. The subjects were asked to check descriptive categories varying from both extremes through average at midpoint. For example:

<u>Disposition</u>



The results indicated that the publicly expressed verbalized attitudes of these university students tended to be favorable toward cripples.

Barker, et al. (1953) reviewed a great number of studies of the attitudes toward physically handicapped as well as attitudes of the handicapped toward themselves.

In the field of education of the mentally retarded, dealing with the question of special classes for the mentally retarded as against placement in the regular classes and the resultant acceptance or non-acceptance from the other children in the school or classroom, a study by Johnson (1950) produced interesting results. His study was concerned with the social position of the mentally retarded child in the regular grades. Children from 25 regular classrooms, each having one or more mentally handicapped children, were selected. A sociometric rating technique was used to determine "stars," "isolates," and "rejected" pupils. His study demonstrated that retarded pupils can be psychologically as segregated from their age peers in regular classes as in special classes.

Review of the literature indicates that studies dealing with attitudes towards the handicapped have been primarily in areas of the handicapped other than the deaf. In those cases where a number of handicaps are considered, the deaf and hearing impaired are included as one of the groups as is illustrated by studies by Shears and Jensema

(1969), Murphy, et al. (1960), Jones, et al. (1966), and Siller and Chipman (1967).

→x Shears and Jenseman in their study attempted to compare the acceptability of different anomalies or disabled persons in certain social situations. Ninety-four subjects made up of undergraduate students, graduate students, and psychiatric technicians ranked 10 anomalies with respect to desirability in a friend or as a self affliction. In addition they filled out a social distance questionnaire based on the work of Bogardus (1925). The list of anomalies included persons who were: (a) blind, (b) deaf, (c) mentally retarded, (d) physically handicapped (wheelchair), (e) cerebral palsy (spastic), (f) homosexual, (g) mentally ill, (h) amputee (leg or arm), (i) severe stutter, (j) person with a harelip. In every case the respondent was expected to use as his reference point his stereotype of the condition. The questionnaire portion dealing with social distance involved the following levels:

Would marry
Would have as a friend
Would work with
Would live in same neighborhood
Would speak to
Would live in same country

Results indicated that as the level of intimacy was increased, the percentage of subjects who would accept persons with this handicap gradually decreased until the level of "willingness to marry" was reached at which level there was an extreme drop. Three distinct levels of acceptability were abstracted from the data:

Most acceptable - amputee, wheel chair patient, and blind person

Next acceptable - persons who are deaf, stutter severely, and have a harelip

Least acceptable- the mentally ill, the mentally retarded, and the homosexual

The cerebral palsied fell somewhere between the middle and last group.

It was interesting to note that in the highest acceptable set the physical handicap was clearly visible, and in the least acceptable set, the stigma associated with the common stereotype seemed to be the predominant variable. This latter group involved two mental disabilities while the homosexual is not visibly disabled and is identified by socially prescribed behavior. The effect of stigma can be thought of as being similarly negative for this stereotype group. The intermediate group had one factor in common--that of communication.

The results suggested six dimensions which probably combine and interact in the formation of stereotypes of anomalous persons: visibility of the disability, communication, social stigma associated with the disability, reversibility prognosis, degree of disability, and difficulty disability imposes on daily living. The need for further research was pointed out if the indices of these factors in understanding stereotypes by individuals and demographic groups are to be ascertained.

The study by Force (1956) was designed to compare physically handicapped and normal children in integrated classes at the elementary school level, in an effort to determine the effect of physical disability upon social position among peers. The types of defects included orthopedic, vision defect, and hearing defects. Findings indicated that physically handicapped children are not as well accepted as normal children in integrated classes. Degree of disability as perceived by a normal subject was an important factor. Few physically handicapped children have enough positive assets to offset completely the negative effect of being labelled as handicapped by normal peers.

The major objectives of a study by Badt (1957) were to ascertain attitudes regarding the administration of special education services, and to determine attitudes toward exceptional children as a group and toward several categories of exceptional children. Questionnaires using objective type items were used. The respondents were 210 University of Illinois students; 144 were in education and 66 were in curricula other than education. The exceptional children included: (a) speech handicapped, (b) visually handicapped, (c) hearing handicapped, (d) crippled, (e) mentally handicapped, (f) mentally gifted, and (g) emotionally maladjusted.

The findings indicated that the need for providing special educational services was appreciated by these students, but there was some unwillingness to participate

directly in providing the services. The education students were just as unwilling to teach special classes as the "non-education" students.

Cowen, Rockway, Bobgrove, and Stevenson (1967) reported on a network of three studies each contributing to the development of an attitudes to deafness scale. In the first study the 30 items originally used in an attitudes to blindness scale were recast and adapted to a scale for deafness by substituting the terms "deafness" for "blindness" and a "deaf person" for a "blind person." In addition 20 items were written, each reflecting an attitude toward deafness or deaf persons. These were based on statements the investigators found in the literature. It was stated that these included propositions which had no empirical base and which reflected mostly the prejudgments and stereotypes of a particular observer. The items included agreement with the given proposition indicating either a positive or negative attitude to deafness. The items were then given to a group of judges (two advanced clinical psychology students, two Ph. D. clinical psychologists, and one psychiatrist) who were asked to indicate whether agreement with each reflected a positive or negative attitude to deafness or did not relate to the question of attitudes to deafness. There was 100% agreement on 18 out of 20 and 80% on the remainder.

The total of 50 items were then given to 100 psychology students. They were presented in a 4-point Likert type framework of strongly or mildly agree or strongly or mildly disagree. No neutral point was included. Results were item analyzed according to Flanagan's suggested method. Twenty-five items were then selected to make up the final test form. These items were selected primarily on the basis of discriminating power, with item test correlations ranging from .43 to .83. In the final array the 25 items included 21 items in which "agreement with" indicated a negative attitude to deafness and 4 in which "agreement with" indicated a positive attitude to deafness.

This 25 item scale was then given to a second sample of 160 psychology students for the purpose of cross validation. Results indicated a reasonable stability to the discriminating power of the 25 item test. The items of this scale are presented in Table 1.

Cowen's (1967) second study dealt with determining relationship between anti-deafness scale scores and a series of other attitude and personality measures. In this portion of the research the investigators used abbreviated versons of authoritarianism, anti-minority, and anti-negro scales from The Authoritarian Personality studies of the California group (Adorno, Frenkel-Brernswik, Levinson, and Sanford, 1950). Cowen et al. (1967) had found these measures in their study of attitudes to blindness, to relate significantly to an anti-blindness measure. They theorized that

TABLE 1.--Final items of the Cowen Attitude to Deafness Scale with direction of keying and two independent sets of item-test correlations.

	r1[b]	r2[b]
The deaf generally have a less mature personality than the hearing. (N)[a]	.64	.46
In general, deaf people are more neurotic than those who hear. (N)	.74	.36
It is impossible to really get "close" to a deaf person. (N)	.57	.59
Deaf people somehow seem sadder and more wrapped up in themselves than hearing people. (P)	.59	.80
The deaf do not seem to be bothered by ordinary life events any more than hearing people. (P)	.51	.33
Because of his need to be pitied, it is particularly important that the deaf person have someone very tolerant to whom he can talk. (N)	.49	.31
Deaf people also seem to have more than the usual number of other physical complaints. (N)	.46	.59
Deaf people show personality characteristics which frequently make them seem odd. (N)	.64	.66
A person who is deaf is as apt to be born a leader as anyone else. (P)	.46	.17
Most deaf people feel that they are worthless. (N)	.59	.59
Most deaf people are dissatisfied with themselves. (N)	.53	.45
The deaf have as many interests as the hearing have. (P)	.53	.44
The deaf adult is not quite as mature or "grown-up" as the hearing adult. (N)	.56	.55
It's difficult to understand the deaf because they keep so much to themselves. (N)	.73	.62
It must be bitterly degrading for a deaf person to depend so much on others. (N)	.62	.39
On the whole, deaf children seem to be less intelligent than hearing children. (N)	.49	.51
I feel that deafness is as hard to bear as complete paralysis. (N)	.57	.32
A deaf person can't afford to talk back to people. (N)	.56	.07
You should not expect too much from a deaf person. (N)	.48	.62
A deaf person is constantly worried about what might happen to him. (N)	.60	.60
A deaf person is not afraid to express his feelings. (P)	.51	.15
Deaf people are more easily upset than people who can hear. (N)	.46	.12
The deaf are prone to have many more fears about the world than the hearing. (N)	.72	.60
The deaf are usually on their guard with people. (N)	.83	.58
Deaf people seem to be overly polite and to lack spontaneity. (N)	.48	.79

[a] N indicates that agreement with the item reflects a negative attitude; P indicates that agreement with the item reflects a positive attitude.

[b] r1 is based on 100 male and female introductory psychology students from evening extension school classes; r2 is based on 160 male introductory psychology students from the regular day-session classes.

the disabled in a society have an underprivileged status similar to that of racial and religious minorities. Thus, as such, a somewhat common set of negative attitudes on the part of the non-handicapped majority could be anticipated. This view was reported to have been spelled out in detail by Chevigny and Braverman (1950). Cowen et al. used the 33-item Marlowe-Crowne Social Desirability scale as a control measure in order to assess the possible effects of common social desirability response tendencies across tests.

Cowen et al. also included another section in order to study the factor dealing with the assumption that a generalized predisposition to hostility might also relate to negative attitudes to deafness. They drew items from the Buss Durkee Hostility Scale (1957) and added these to the test battery. Thirty-one items were added; these included ten from the Irritability subscale, the intact 13-item Verbal-Hostility subscale, and eight items taken from the Suspicion, Assault, Resentment, and Negativism subscales. For scoring purposes this yielded an Irritability, Verbal Hostility, and Total Hostility Score.

The Lotus of Evaluation Scale (Cowen, 1967) was added to complete the Cowen Battery. It was thought that the individual who "externalizes responsibility" might be more likely to have negative attitudes to deafness than the person who accepts responsibility when things go wrong.

Cowen et al. found as a result of the preliminary steps in the development of an attitudes for deafness scale that the first study demonstrated reasonable face validity and internal consistency. In the second study, inter-relationships were demonstrated between anti-deafness and authoritarian, anti-negro, and anti-minority attitudes. The final question of whether responses to this attitudes to deafness scale "were predictive of some outside behavior apart from responses to other attitude scales" were postulated to need further study.

In the external criterion portion of the research they set up a task situation somewhat similar to the attempt made by Gowman in his attitudes to blindness study. In order to operationalize the external criterion a "forming impressions of personality" paradigm was used. The procedure included using a "hearing" confederate, a "hearing impaired" confederate who wore a hearing aid, and the real subject. The latter during the course of the group discussion period, set up for the purpose of finding out as much as possible about the other two, had the task of rating the personal characteristics of the two "stooges." These had been previously briefed and prepared to contribute to the triad as either a hearing or hearing impaired individual and to counter balance each other in responses and in questions. A total of 48 male subjects participated in the behavioral prediction study. Results demonstrated that subjects with

high anti-deafness scores, in comparison to their low anti-deafness peers, gave more negative ratings to a confederate wearing a hearing aid than they did to a non-disabled but behaviorally comparable confederate.

Other questions still remain as to what results would be obtained if attempts were made to investigate the discriminating power of the scale in other settings, particularly where attitudes to deafness might be expected to be different among different groups or as a result of experimental manipulation.

Murphy, Dickstein and Dripps (1960) studied the attitudes of several groups of youth specialists toward hearing handicapped children and compared these attitudes with those held toward other types of exceptional children. They used a scale using eight categories to include: the hearing handicapped, the visually handicapped, the mentally retarded or slow learners, the emotionally disturbed, the physically handicapped, the gifted, the speech disordered, and the delinquent. The question items were:

1. Which type of exceptional child would you most prefer to teach?
2. Which type of exceptional child would you least prefer to teach?
3. Which type of exceptional child do you know most about?
4. Which type of exceptional child do you know least about?

Each respondent was asked to rank order his selection of each category as he answered each question. The rating scale used was based on a suggested procedure by Kvaraceus (1956).

Their findings indicated that the deaf ranked quite low in preference to teach by respondents included in the study with the exception of one group of speech therapists. The respondents were college freshmen studying to become teachers, elementary classroom teachers, elementary school principals, special school personnel, and speech therapists.

In response to items 3 and 4 above dealing with knowledge-ability, the hearing impaired again was the group about which all except speech therapists felt least knowledgeable.

The with-in group rank difference correlation between attitude categories by all groups responding revealed a trend indicating that, to a small degree, the more an individual feels he knows about a handicap the more inclined he is to desire to work with that type of child.

Haring (1958) reported on a study designed to effect changes in attitudes of regular classroom teachers and administrators toward acceptance of exceptional children. Increased knowledge did not of itself modify attitudes of individuals toward exceptional children. Significant modifications of attitudes in a positive direction occurred only in the group of subjects belonging to the two schools

in whcih there were a great number of exceptional children in the classroom.

In another study by R. L. Jones (1962), an attempt was made to verify the study by Badt on attitudes of students toward exceptional children. The respondents (330 education students from Miami University) were asked to indicate their preferences for teaching 12 types of exceptional children. The group which the respondents would most prefer to teach was ranked 1 and the least preferred, 12. It was interesting to note that the results were quite similar in both studies for the "Most Like to Teach" categories, but somewhat less so for the "Least Like to Teach" categories. The results were also compared to those obtained from a group of 51 teachers of the mentally retarded. The latter teachers expressed a high preference for teaching the educable mentally retarded and a somewhat low preference for the emotionally disturbed. The rankings for preference of teaching the deaf were consistently below average for all groups.

Jones et al. (1966) reported on a study dealing with the social distance of the exceptional child. One hundred eighty-six high school students completed a paired comparisons questionnaire involving 12 exceptionalities and 7 interpersonal dimensions. The results revealed that acceptance of certain exceptionalities was sometimes related to interpersonal situations. The severely mentally retarded were

anchored at the unfavorable end of the acceptance continuum, and the gifted at the favorable end. The exceptionalities of a mild nature (hard of hearing, partially sighted) were most often near the favorable end. The more severe exceptionalities tended to fall toward the unfavorable end of the continuum.

Elser (1959) in his study attempted to determine to what extent hearing handicapped children were accepted, isolated, or rejected by their normally hearing classmates. In the attempt to analyze the meaning of "acceptance" in a classroom situation, the following areas were identified: (a) the friendship patterns of children, their intimate associates; (b) the reputation or social status a child enjoys among his peers, in which favorable and unfavorable traits are attributed to them; and (c) the area of self perception, the individuals awareness of his own status in the group of which he is a member.

The results showed the hearing handicapped were not accepted as "average" by their classmates. As to friendship, the hearing handicapped were not as well accepted as the average of their groups. The results as to reputation indicated that as a group they did not enjoy as good a reputation as the average of the class.

Horowitz and Rees (1962) worked with 266 hearing people divided into three groups. Age levels ranged from children in the first grade to college students and PTA

members. The findings show some areas of clear knowledge and other areas of great confusion. The research subjects perceived as deaf all people who had varying degrees of hearing loss. There was a general impression that hearing aids guaranteed normal hearing. Children showed better understanding than college students and adults of how deafness is related to speech difficulty. Children pointed out that not only are deaf children unable to hear others but they cannot hear themselves. It was interesting to note that younger children also were more consistent in realizing that a hearing aid did not guarantee normal hearing.

Guttman-Jordan Attitude Research

Guttman's (1950) contribution to attitude scale construction furnished a basis upon which a number of investigators have pursued recent research studies in special areas of the handicapped and other areas. Jordan (1967) constructed a scale with the mentally retarded as attitude objects using an adaptation of Guttman's proposals. Guttman had proposed that attitudes exist on various levels, from stereotypes to concrete behavioral. Jordan's finding in his preliminary administration of his scale yielded results that were consistent with Guttman's theory. In his review of literature he concluded that numerous variables seem to be related to mental retardation such as sex, education, social class, religion, occupation, amount of knowledge

about retardation, general value orientation, and contact. In the studies reviewed herein and by Jordan, few of them attempted to control systematically more than one or two of these variables or to relate verbal attitudes to actual behavior, according to Jordan (1969).

Guttman's early work on attitude theory was primarily concerned with the measurement of attitudes during World War II. He defined attitude as "a delimited totality of behavior with respect to something" (p. 51). Consonant with this definition, both verbal responses and overt behaviors are construed as attitudes which can be measured on at least four levels (Table 3).

Jordan's attitude behavior scale, with the mentally retarded as attitude object, followed Guttman's facet theory. Briefly, Guttman distinguished three "facets" as being involved in a particular attitude response: (a) the subject's behavior (belief or overt action), (b) the referent (the subject's group or the subject himself), and (c) the referent's intergroup behavior (comparative or interactive). He labelled the first of the two options of each facet as the "weaker" element (Table 2). According to Guttman each attitude item in the scale was as strong as the number of strong elements which appeared. If all attitude items were thought of in terms of three facets, then each individual item could have 0 to 3 strong facets or a total of 4 combinations. He described these types as

levels. He hypothesized that responses at any given level were most closely related to the most similar or adjacent levels--the levels having the greater number of common facets.

An example given by Maierle (1969, p. 19) in explanation of the level designation of an attitude item is illustrated below:

> "All members of the ---- race are mentally defective" would be a level I response or stereotype, whether accepted or rejected by the subject who responds. The behavior of the subject is a belief about how the attitude compares with other persons such as the subject's group. The statement "I have invited members of the ---- race to a dinner or party at my house" would be level IV response or personal interaction. The response indicates an interaction of the subject himself, a specific overt action.

Maierle listed the levels as:

Level I	Stereotype
Level II	Norm
Level III	Hypothetical Interaction
Level IV	Personal Interaction

According to Guttman (1950) if attitude items are correctly written to correspond to each hypothesized level, then level-by-level correlations would reveal a simplex[1] ordering.

Jordan's scale used an expanded approach in that he proposed a five-facet six-level adaptation of the system in line with Guttman's theory. He used 20 items for each of the six levels for a total of 120 items. A measure of intensity was also included for each item thus expanding

---

[1]See glossary for definition.

the scale to 240 items. He added 60 items of demographic, contact and related data, value orientation, and knowledge about mental retardation for a total of 300 items.

His scale was administered to three groups in the test development study:

1. Graduate students enrolled in a course on medical information for rehabilitation counselors and special education teachers. N=88
2. Regular education students. N=426
3. Elementary school teachers in British Honduras (Belize). N=523

Attitude Intensity

On the question of intensity mentioned earlier, Guttman and Foa (1951) emphasized the importance of intensity measures in attitude scales. Suchman (1950) states that intensity of attitudes may be ascertained by asking a question about intensity immediately following a content question. For example:

"How strongly do you feel about this?"

"Very strongly"_____

"Fairly strongly"_____

"Not so strongly"_____

Sample excerpts as taken from the Jordan Scale are indicated on the following pages.

DETAILS OF ADMINISTRATION

Following a general set of directions and an example to induce "test taking behavior" the 300 items were presented to the subjects in a booklet[1] which contained the six subscales in numerical order; followed by the demographic, contact and related data, value orientation data, and knowledge about mental retardation data.

The directions for each of the six subscales (with an example in each area) were:

Directions: Section I

In the statements that follow you are to mark the number that indicates how other people compare mentally retarded persons to those who are not mentally retarded, and then to state how sure you felt about your answer. Usually people are sure of their answers to some questions, and not sure of their answers to other questions. It is important to answer all questions, even though you may have to guess at the answers to some of them.

Other people generally believe the following things about the mentally retarded as compared to those who are not retarded.

1. Energy and vitality

    1. less energetic
    2. about the same
    3. more energetic

2. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

Directions: Section II

This section contains statements of ways in which other people sometimes act towards people. You are asked to indicate for each of these statements what other people generally believe about interacting with the mentally retarded in such ways. You should then indicate how sure you feel about your answer.

Other people generally believe that mentally retarded persons ought:

41. To play on the school playground with other children who are not mentally retarded.

1. usually not approved
2. undecided
3. usually approves

42. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

Directions: Section III

This section contains statements of the "right" or "moral" way of acting toward people. You are asked to indicate whether you yourself agree or disagree with each statement according to how you personally believe you ought to behave toward mentally retarded persons. You should then indicate how sure you feel about your answer.

In respect to people who are mentally retarded, do you believe that it is usually right or usually wrong:

81. To take a mentally retarded child on camping trips with normal children

1. usually wrong
2. undecided
3. usually right

82. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

Directions: Section IV

This section contains statements of ways in which people sometimes act toward other people. You are asked to indicate for each of these statements whether you personally would act toward mentally retarded people according to the statement. You should then indicate how sure you feel about this answer.

In respect to a mentally retarded person would you,

121. Share a seat on a train for a long trip.

1. no
2. don't know
3. yes

122. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

Directions: Section V

This section contains statements of actual feelings that people may hold toward the mentally retarded. You are asked to indicate how you feel toward people who are mentally retarded compared to people who are not mentally retarded. You should then indicate how sure you feel of your answer.

How do you actually feel toward persons who are mentally retarded compared to others who are not mentally retarded:

1. Disliking

   1. more
   2. about the same
   3. less

2. How sure are you of this answer?

   1. not sure
   2. fairly sure
   3. sure

Directions: Section VI

This section contains statements of different kinds of actual experiences you have had with mentally retarded persons. If the statement applies to you, mark yes. If not you should mark no.

41. Shared a seat on a bus, train or plane?

   1. no
   2. uncertain
   3. yes

42. If yes, has this experience been mostly pleasant or unpleasant?

   1. no such experience
   2. unpleasant
   3. in between
   4. pleasant

Summary

It appears from the review of Guttman's scale and adaptations of his approach by Maierle and Jordan that an instrument of this scope may render interesting results if adapted for use with the deaf as attitude object.

Shaw and Wright (1967) have indicated that studies dealing with attitude research have made great contributions; yet, it is unfortunate in their estimation that much effort had been wasted because of the lack of suitable instruments of measurement. They point out that two circumstances reduce the use of a great number of research by investigators: (a) most research that has been done is not directly comparable, (b) the quality of the measuring instrument is poorer than if existing scales had been improved upon and used instead of constructing new ones. They further pointed out the great consumption of time lost in the development of a scale and the valuable time that could have been used in the research itself.

With these observations in mind it was decided to study closely the scale developed by Maierle (1969) and the scale developed by Jordan (1968; 1970). Related studies by Hamersma (1969), who used an attitude-behavior scale of Negroes and Whites, Harrelson (1970) and Morin (1969) who used a similar design in studies on mental retardation, served to furnish related information toward the refinement of a scale for use in the study of attitude-behaviors towards the deaf.

In addition a recently completed study by Proctor (1967) on the relationships between knowledge of exceptional children and attitudes toward their classroom integration furnished items for inclusion in the section dealing with a respondent's knowledge about deafness.

In summary, the Guttman facet theory approach to the study of attitudes was selected and the basic scale as used in this study was an adaptation of the Jordan attitude scale, ABS-IIR (1969), as will be discussed in detail in Chapter III.

CHAPTER III

INSTRUMENTATION AND VARIABLES

The present study employed a revised version of the ABS-MR instrument as developed by Jordan and revised by Poulos for special application as one suitable for use with deaf persons as attitude object. Guttman facet theory rationale furnished the basis for the construction of items by a systematic a priori design instead of by a method of intuition or by the use of judges.

Guttman's facet theory (Guttman, 1959, 1961) specifies that the attitude universe represented by the item content can be sub-structured into components which are systematically related according to the number of identical conceptual elements they hold in common. The sub-structuring of an attitude universe into components or elements facilitates a sampling of items within each of the derived components, and also enables the prediction of relationships between various components of the attitude universe.

Facet Theory and the ABS-MR Scale

What is sought by facet design and analysis is to be able to construct item content and subject-object

relationships in an attitude scale by a semantic, logical, a priori technique, and to be able to predict the "order structure" which would result from the empirical data. What would happen then would be the reverse of what factor analysis actually accomplishes. Factor analysis tries to make sense out of what already has been done by a mathematical process of forming correlational clusters and then naming them, i.e., calling them factors. As opposed to this approach, facet design, in essence, names the facets before one begins.

Guttman's Four Level Theory

Following an analysis of research on racial attitudes by Bastide and van den Berghe (1957), Guttman proposed that in respect to intergroup attitudes and behavior there are three necessary facets which may be combined according to definite procedures to determine the semantic component structure of four important sub-universes or levels of the attitude universe. Table 2 presents these facets.

TABLE 2.--Basic facets used to determine component structure of an attitude universe.

Facets		
(A) Subject's Behavior	(B) Referent	(C) Referent's Intergroup Behavior
a_1 belief	b_1 subject's group	c_1 comparative
a_2 overt action	b_2 subject himself	c_2 interactive

One element from each and every facet must be represented in any given statement, and these statements can be grouped into profiles of the attitude universe by multiplication of the facets A x B x C, yielding a 2 x 2 x 2 combination of elements or eight semantic profiles in all, i.e., (1) $a_1b_1c_1$, (2) $a_1b_1c_2$, . . . (8) $a_2b_2c_2$. It can be seen that permutations 1 and 2 have two elements in common (a_1b_1) and one different (c_1 and c_2), whereas profiles 1 and 8 have no elements in common.

Using the Bastide and van den Berghe (1957) research as a model, Guttman (1959) was able to facetize the semantic structure of their attitude items into the four attitudinal sub-universes or levels as shown in Table 3.

TABLE 3.--Guttman facet profiles and descriptive labels of attitude levels.

Level	Profile	Descriptive Label
1	$a_1b_1c_1$	Stereotype
2	$a_1b_1c_2$	Norm
3	$a_1b_2c_2$	Hypothetical Interaction
4	$a_2b_2c_2$	Personal Interaction

Guttman reasoned that if an attitude item can be distinguished semantically by the three facets ABC outlined in Table 2, then an individual item could have one, two, or three subscript "2" elements for a total of four

attitude levels. Logically, if the elements are correctly ordered within facets, and if the facets are correctly ordered with respect to each other, a semantic analysis of attitude items will reveal n + 1 types or levels of attitude items. While a total of eight permutations are possible on the four levels (one each on levels 1 and 4 and three each on levels 2 and 3) only the four permutations shown in Table 3 were studied by Bastide and van den Berghe (1957).

The model in Table 3 depicts the attitudinal levels and the descriptive labels for each level defined by Guttman (1959). An attitude item in level 1 would deal with the belief of the subject (a_1) that his group (b_1) compared itself (c_1) favorably or unfavorably with the attitude object in question, in this case members of a different racial group. Similarly, an item in level 4 would deal with the subject's own (b_2) reported behavior (a_2) in interacting (c_2) with the attitude object.

A common meaning for the orderings was suggested by Guttman, showing in each case a progression from a <u>weak</u> to a <u>strong</u> form of behavior of the subject toward the attitude object. That is, the more subscript "2" elements a set contains, the greater the strength of the attitude.

Facet analysis of the semantic structure provides a social-psychological-theoretical basis for predicting the structure of the empirical intercorrelation matrix of the above four levels.

> One cannot propose to predict the exact size of each correlation coefficient from knowledge only of the semantics of universe ABC, but we do propose to predict a pattern or structure for the relative sizes of the statistical coefficients from purely semantic considerations (Guttman, 1959, p. 324).

This prediction was stated by Guttman as the Contiguity Hypothesis which states that subuniverses closer to each other in the semantic scale of their definitions will also be closer statistically. In other words, the intercorrelations should reveal a simplex ordering so that the maximum predictability of each level is attainable from its immediate neighbor or neighbors alone. This predicted relationship has been obtained for the ABS-MR scale (Jordan, 1969; Harrelson, 1970; Morin, 1970; Vurdelja, 1970; as well as by Foa, 1958, 1963; and Guttman, 1961).

Jordan's Expanded Six Level Adaptation

As was noted earlier, Guttman's (1959) facet design and analysis of attitude items allows for three facets and consequently four levels of attitudes. Jordan (1968), theorizing that there might be other pertinent facets, but accepting those identified by Guttman as appropriate, expended facet analysis for attitude items dealing with specified groups to include five facets and hence six levels (Table 4).

The multiplication of facets ABCDE yields a possible 32 combinations of elements. Since not all combinations are logical because of semantic considerations, the selection of a "best" set of components from the 32 possible was

TABLE 4.--Jordan's facets used to determine joint[1] struction of an attitude universe.

(A) Referent	(B) Referent Behavior	(C) Actor	(D) Actor's Intergroup Behavior	(E) Domain of Actor's Behavior
a_1 others	b_1 belief	c_1 others	d_1 comparison	e_1 symbolic
a_2 self	b_2 action	c_2 self	d_2 interaction	e_2 operational

[1]Joint struction is operationally defined as the ordered sets of the five facets from low to high (subscript 1's are low) across all five facets simultaneously. Jordan previously used the term conjoint but in order to avoid confusion with conjoint measurement has adapted the term "joint." (Zinnes, 1969, p. 461).

still partly a matter of judgment at the time of the construction of the ABS-MR scale. Maierle (1969) extended research in this area and found that 12 of the possible 32 permutations were semantically consistent. In constructing the ABS-MR and the ABS-DF, however, six of these element combinations or permutations seemed particularly fruitful and these six combinations (Table 5) represent the six levels of attitude strength used in the present study.

Table 5 shows levels of attitude strength, the element composition of the profiles, and a descriptive term for each profile or level used in the ABS-DF. It can be noted that each successive level changes on only one facet so that the profiles have a semantic simplex ordering from least complex, with complete absence of subscript "2"

TABLE 5.--Joint level, profile composition, and labels for six types of attitude struction.

Subscale Type-Level	Struction Profile[1]	Descriptive Joint[2] Term
1	$a_1b_1c_1d_1e_1$	Societal stereotype
2	$a_1b_1c_1d_2e_1$	Societal norm
3	$a_2b_1c_1d_2e_1$	Personal moral evaluation
4	$a_2b_1c_2d_2e_1$	Personal hypothetical action
5	$a_2b_2c_2d_2e_1$	Personal feeling
6	$a_2b_2c_2d_2e_2$	Personal action

[1]Based on facets of Table 4.

[2]Joint struction is operationally defined as the ordered sets of the five facets from low to high (subscript 1's are low) across all five facets simultaneously. Not to be confused with conjoint measurement.

elements, to most complex where all elements are subscript "2" elements.

Table 6 indicated the relationship between the Guttman and Jordan facet systems.

Table 7 incorporates the data presented in Table 4 and 5 and shows how the semantic structure of the six attitudinal levels of the ABS-DF is specified by the element composition or facet profile of each level.

All items on the first level of the ABS-DF (exclusive of those items measuring attitude intensity) correspond to the definitional statement for level 1 in Table 7; all item stems on the second level of the ABS-DF correspond

to the definitional statement for level 2 in Table 7, and so on down through level 6.

TABLE 6.--Comparison of Guttman and Jordan facet designations.

Facets in Jordan Adaptation				
A	B	C	D	E
Jordan				
Referent	Referent Behavior	Actor	Actor's Intergroup Behavior	Domain of Actor's Behavior
a_1 others	b_1 belief	c_1 others	d_1 comparison	e_1 symbolic
a_2 self	b_2 overt action	c_2 self	d_2 interaction	e_2 operational
Guttman				
---	Subject's Behavior	Referent	Referent's Intergroup Behavior	---
---	b_1 belief	c_1 subject's group	d_1 comparative	---
---	b_2 overt action	c_2 subject himself	d_2 interactive	---

The discussion above centered on what has been defined by Guttman and Jordan (1968) as "joint struction," which refers to the differences between scale levels of the ABS-DF on facets A through E. The counterpart to joint struction,

TABLE 7.--Five-facet six-level system of attitude verbalizations; levels, facet profiles, and definitional statements for twelve permutations.

Level	Facet Profile	No.[3]	Definitional Statements[1]	Descriptive Name[2]
1	$\underline{o\ b\ o\ c\ s}$ $a_1 b_1 c_1 d_1 e_1$	0	Others believe others compare symbolically**	**Societal sterectype (group assigned group status)
2	i b o c s		I believe others compare symbolically	Personally-assigned group status
	$\underline{o\ b\ o\ i\ s}$ $a_1 b_1 c_1 d_2 e_1$	1	Others believe others interact symbolically**	**Societal norm
	o b i c s		Others believe I compare symbolically	Group-assigned personal status
3	$\underline{i\ b\ o\ i\ s}$ $a_2 b_1 c_1 d_2 e_1$		I believe others interact symbolically**	**Personal moral evaluation (perceived values)
	i b i c s		I believe I compare symbolically	Self-concept (personally-assigned personal status)
	o b i i s	2	Others believe I interact symbolically	Proclaimed laws (group expectations)
	o a o i s		(Others act) others act symbolically	Group identity (actual group feelings)
4	$\underline{i\ b\ i\ i\ s}$ $a_2 b_1 c_2 d_2 e_1$		I believe I interact symbolically**	**Personal hypothetical action
	o a o i p	3	(Others act) others interact operationally	Actual group behavior
5	$\underline{i\ a\ i\ i\ s}$ $a_2 b_2 c_2 d_2 e_1$	4	(I act) I interact symbolically**	**Personal feeling
6	$\underline{i\ a\ i\ i\ p}$ $a_2 b_2 c_2 d_2 e_2$	5	(I act) I interact operationally**	**Personal action

[1]Words in parentheses are part of redundant but consistent statements.

[2]Alternate names in parentheses indicate relationships of various level members.

[3]No. = number of strong elements.

**Permutation used in the ABS-MR scale.

which specifies attitude level, is "lateral[1] struction," which specifies and differentiates the content of the items of the ABS-DF through five additional facets F through J. Table 8 shows the five additional facets specifying item content, or lateral struction, and the relationship between joint and lateral struction on the ABS-DF in the form of a mapping sentence. It can be seen that every response of every subject corresponds to a combination of elements in facets K and L for every attitude item, and in turn corresponds to a combination of elements for each and every facet A through J--with the exception of those items on level 5. It should be noted that at the time of the construction of the ABS-DF the ordering system had not been as fully developed for joint struction as it had for lateral struction, and as a result, it was not possible to structure items on level 5 for Personal Feelings beyond the joint facets A through E. Consequently, items on this level simply ask for general feelings about the attitude object without relating these feelings to the specific situations represented by the lateral facets F through J.

From the complete facet design shown in Table 8, twenty content items, each with a corresponding measure of intensity were selected for each of the six levels of the ABS-DF so that the final attitude scale consisted of 240 items.

---

[1]The term "disjoint" was previously used, see Glossary.

TABLE 8.--A mapping sentence[1] for the facet analysis of conjoint[2] and disjoint[3] struction of attitudes toward specified[4] persons.

(A) Referent		(B) Referent Behavior		(C) Actor		(E) Domain of Actor's Behavior
Subject (x) attributes to referent	a_1 others pop. as a whole non-disabled parents of disabled Negro, Jew, etc. a_2 self	the referent behavior of	b_1 belief b_2 overt action	and that the actor	c_1 others pop. as a whole non-disabled parents of disabled Negro, Jew, etc. c_2 self	e_1 symbolically would ought e_2 operationally does

(D) Actor's Intergroup Behavior		(F) Life Situations		(G) Importance	
d_1 compares compare (with) d_2 interacts with specially help hire respond to (feel)	"specified" persons in	f_1 personal traits f_2 primary group relations f_3 recreation f_4 education f_5 employment f_6 health, welfare, & legislation f_7 sex and family f_8 secondary group relations	involving	g_1 high g_2 medium g_3 low	level of importance under condition (y)

(H) Evaluation Process		(I) Trait Type	(J) Trait Level		(K) Valence	
h_1 with respect to h_2 because of h_3 despite	their	i_1 cognitive i_2 affective i_3 instrumental (physical) (behavioral) (coping)	j_1 attributed trait (e.g. handicap) j_2 actual trait (e.g. disability)	→	k_1 positive k_2 negative	valence toward "specified" persons.

[1]Based on mapping sentence of March 7, 1968.

[2]Facets "A" through "E" denote Conjoint Struction or level.

[3]Facets "F" through "J" denote attitude content or Disjoint Struction. The ordering system has not yet been developed for Disjoint Struction as for Conjoint Struction.

[4]Any person or social group such as aged, blind, alcoholic, Negro, national or ethnic group may be substituted for the disabled.

John E. Jordan
Michigan State University
Louis Guttman
Israel Institute for
Applied Social Research
August 10, 1966

ABS-DF Intensity

Guttman and Foa (1951) have emphasized the importance of intensity measures in attitude scales, particularly with regard to the contact variable.

> A single question ordinarily cannot distinguish between changes due to intensity and those due to direction. A change in response to a single question may be due to either factor, or to both. Since any single question is usually biased, as is easily seen from the theory of scale and intensity analysis, the use of a single question for the study of effect, or change, or even for comparing groups, is quite inadvisable (p. 53).

Suchman (1950) has suggested that intensity of attitudes may be ascertained by asking a question about intensity immediately following a content question.

> One form used for an intensity question is simply: "How strongly do you feel about this?" with answer categories of "Very strongly," "Fairly strongly," and "Not so strongly." Repeating such a question after each content question yields a series of intensity answers. Using the same procedure as for content answers, these are scored and each respondent is given an intensity score (p. 219).

This latter procedure was adopted to measure intensity of attitudes on the ABS-DF. On levels 1-5, the three alternatives "not sure," "fairly sure," and "sure" are presented to the question "How sure are you of this answer?" for each item in these scales. A variation of this procedure was used on level 6 to ascertain whether a reported experience with deaf persons was "unpleasant," "in between," or "pleasant."

Standardization Study

In the standardization study the ABS-MR was administered to three groups: (a) 88 MSU graduate students (46 female, 42 male) in a course in medical information for rehabilitation counselors and special education teachers--students studying to be professionals in the area of disabling or handicapping conditions, (b) 633 regular education students (426 female, 207 male) at the sophomore level and constituting of all MSU education students at that level during the 1968 Winter Term, and (c) 523 elementary school teachers (381 female, 142 male) in Belize (British Honduras). The groups were chosen on the basis of a presumed difference in age, education, and cultural orientation, as well as knowledge and experience regarding mental retardation (see Table 10).

The attitude items in the ABS-MR and the ABS-DF scales, as in all attitude scales, are verbalizations of behavior. The advantage of an attitude scale based on facet theory, however, is that the verbalizations refer to different levels of behavior and go beyond the usual stereotypic, comparative, abstract and hypothetical levels of most attitude scales to verbalizations about affective experiences and concrete, overt behavior. The inclusion of level 6--actual reported behavior--in the ABS-DF scale, provided the opportunity to predict and analyze which of the other five levels correlate highest with this "actual behavior" level.

Table 9 shows the "joint" intercorrelation matrices for the three sample groups employed in the standardization study of the ABS-MR. It will be noted that for the two MSU samples, level 5, "personal feelings," showed the highest correlation with level 6, as predicted by facet theory and Guttman's (1959) Contiguity Hypothesis. For the Belize sample, the highest correlation obtained for level 6 was with level 4--"personal hypothetical behavior." In general support of the facet theory approach, it appears from these results that what an individual says he "would" do and what he "feels" toward the retarded are better predictors of his behavior than what he thinks "should" be done.

The obtained correlation matrices (Table 9) for the three groups formed approximate simplexes as predicted by joint struction facet theory and the contiguity hypothesis. According to facet theory the correlations between levels decrease in relation to the number of steps the two levels are removed from each other. There were three reversals from the hypothesized ordering for the MSU graduate students, four for the MSU sophomores, and five for the Belize teachers. Kaiser (1962) has suggested a procedure for testing a simplex approximation and this procedure, along with its application to the data in this study will be described in Chapter IV.

TABLE 9.--Correlation matrices of joint struction for standardization groups on the six level ABS-MR.

MSU Graduate Students[1]						
Level	1	2	3	4	5	6
1	---					
2	.56[4]	---				
3	.17	.34	---			
4	.10	.12[7]	.48	---		
5	.04	.13	.08	.24	---	
6	.01	.05	.04	.13	.21	---

MSU ED 200 Students[2]						
Level	1	2	3	4	5	6
1	---					
2	.44[5]	---				
3	.05	.21	---			
4	.15	.21	.55	---		
5	.17	.12	.19	.38	---	
6	.01	.04	.05	.19	.22	---

Belize Teachers[3]						
Level	1	2	3	4	5	6
1	---					
2	.22[6]	---				
3	.11	.32	---			
4	.21	.28	.39	---		
5	.17	.06	.19	.31	---	
6	.13	.10	.15	.32	.16	---

[1] N = 88.

[2] N = 633.

[3] N = 523.

[4] Critical value of r at .05 level = .18.

[5] Critical value of r at .05 level = .08.

[6] Critical value of r at .05 level = .09.

[7] Reversals in simplex ordering are underlined.

Anastasi (1961) had pointed out that many attitude studies are conducted for the stated purpose of systematically exploring verbally reported attitudes, consequently, the criterion itself should be defined in terms of verbally expressed attitudes. With this in mind the method of selecting item content on a systematic basis through the use of facet theory and a mapping sentence, as was done in the ABS-MR and the ABS-DF is far superior to earlier methods in securing a representative sample of the desired behavior domains. Through this approach it became a relatively simple matter to plot out the elements and facets one wishes to include and to construct scale items to meet this criterion, thus making sure all desired elements were represented.

Validity

According to Anastasi (1961) one way in which attitude scales are sometimes validated is through the use of contrasted groups as a special instance of concurrent validation. In concurrent validation procedures generally, the relationship between test scores and indices of criterion status obtained at approximately the same time is examined. With the method of contrasted groups, the reasoning is that the groups have become somewhat differentiated through the multiple demands of daily living in some important way with respect to the criterion in question.

The groups in the standardization study of the ABS-MR were chosen on the basis of a presumed difference in age, education, knowledge and experience regarding retardation, and cultural orientation. It had been assumed that the special education-rehabilitation graduate students would have more favorable attitudes toward mental retardation than the education sophomores (ED 200) and the Belize teachers, and, if such a difference were reflected on the ABS-MR, this could be interpreted as providing concurrent validation data for this instrument.

Table 10 shows the content and intensity mean scores and analysis of variance results for the three sample groups on the ABS-MR as well as for the independent variables (variables 15 through 36 in this table) to be described later.

This table reveals that the SER group did in fact obtain a significantly higher total content score than the ED 200 sample, thus providing some support for the concurrent validity of the ABS-MR. Also it should be noted that the ED 200 group scored significantly higher than the SER group on the stereotypic level 1 of the ABS-MR, as did the Belize sample. The latter group's significantly higher scores on levels 1 and 2 in fact offset its significantly lower score on level 6 to the point where the Belize sample obtained a significantly higher total mean score than did the SER group. This finding

TABLE 10.--Sample sizes, means, F tests and multiple means results for the ABS-MR[1] for the SER[2], ED 200[3], and belize samples.

	VARIABLE	ED 200 = E			SER = S			BELIZE = B			FEMALE = F			MALE = M			F	Sig[6] Of F	Multiple Means Test[7] P < .05
		N	Mean	Adj Y	N	Mean	Adj Y	N	Mean	Adj Y	N	Mean	Adj Y	N	Mean	Adj Y			
Attitude Content	1. Stereo	633	32.79	32.79	88	30.80	30.87	523	35.57	35.57	846	33.90	33.80	398	33.66	33.88	34.90	<.0005	E > S, B > S, B > E
	2. Norm	633	35.63	35.63	88	36.00	35.94	523	40.91	40.93	846	37.80	37.76	398	37.86	38.13	59.02	<.0005	B > E, B > S
	3. Moral	633	44.48	44.48	88	46.09	46.04	523	45.56	45.57	846	44.95	44.94	398	45.27	45.28	5.66	.001	E > E, B > E
	4. Hype	633	42.76	42.75	88	45.38	45.27	523	41.98	42.01	846	42.35	42.41	398	43.38	43.07	8.50	<.0005	S > E, S > E, S > B
	5. Pool	633	38.80	38.80	88	39.13	39.03	523	38.94	38.96	846	38.64	38.62	398	40.18	40.21	1.38	.265	----------
	6. Action	633	27.33	27.31	88	32.80	32.53	523	31.02	31.09	846	28.34	28.73	398	30.46	30.42	69.45	<.0005	M > F, S > E, S > E, S > B
	7. Total	633	222.79	222.75	88	230.27	229.68	523	234.99	235.14	846	227.45	227.25	398	230.57	230.99	37.62	<.0005	M > F, S > E, S > B
Attitude Intensity	8. Stereo	633	40.71	40.70	88	43.44	43.23	523	46.38	46.44	846	42.96	42.85	398	43.98	44.20	74.09	<.0005	M > F, S > E, S > E, S > B
	9. Norm	633	40.71	40.69	88	42.19	41.94	523	44.47	44.54	846	41.95	41.87	398	43.34	43.51	27.23	<.0005	M > F, S > E, S > S
	10. Moral	633	45.19	45.18	88	49.20	48.99	523	46.33	46.38	846	45.48	45.51	398	46.95	46.89	10.57	<.0005	M > F, S > E, S > E, S > B
	11. Hype	633	45.97	45.96	88	51.27	51.25	523	48.38	48.39	846	47.29	47.31	398	47.51	47.45	17.64	<.0005	S > E, S > E, S > B
	12. Pool	633	45.82	45.81	88	50.44	50.29	523	47.28	47.32	846	46.42	46.45	398	47.30	47.42	10.20	<.0005	M > F, S > E, S > E, S > B
	13. Action	633	46.00	45.97	88	38.22	37.89	527	33.48	33.57	846	39.33	39.51	398	41.99	41.61	217.31	<.0005	M > F, S > E, S > E, S > B
	14. Total	633	264.30	264.30	88	274.77	273.58	523	266.33	266.64	846	263.43	263.53	398	271.38	272.09	7.75	<.0005	M > F, S > E, S > B
Value	15. Efficacy Cont.	633	22.86	22.85	88	23.15	23.04	523	24.46	24.49	845	23.37	23.33	398	23.94	24.02	30.09	<.0005	M > F, S > E, S > B
	16. Efficacy Int.	633	27.50	27.49	88	27.28	27.12	523	28.52	28.56	845	27.61	27.58	398	28.35	28.62	11.87	<.0005	M > F, S > E, S > S
Know.	17. MR Knowledge	616	2.73	2.73	86	3.34	3.38	508	2.59	2.58	826	2.78	2.79	386	2.58	2.55	16.11	<.0005	F > M, S > E, S > E, S > B
Content	18. MP Amount	622	2.46	2.46	88	3.50	3.57	493	2.45	2.46	813	2.47	2.49	390	2.68	2.65	19.68	<.0005	S > E, S > E
	19. MP Avoid	622	3.60	3.69	88	3.25	3.21	490	2.57	2.58	811	3.09	3.11	388	3.43	3.40	44.37	<.0005	M > F, S > E, S > E, S > B
	20. MP Income	354	1.37	1.37	61	4.08	4.08	288	1.62	1.62	399	1.65	1.72	234	1.04	1.72	114.09	<.0005	S > E, S > E, S > B
	21. MP Alter	582	1.63	1.63	75	4.08	4.05	444	1.73	1.73	733	1.74	1.70	368	2.02	1.94	76.46	<.0005	S > E, S > B
	22. MR Amount	619	1.85	1.85	87	2.97	2.95	468	2.26	2.26	788	2.04	2.06	386	2.20	1.94	25.54	<.0005	S > E, S > E, S > B
	23. MR Enjoy	622	3.15	3.15	87	4.14	4.13	494	3.34	3.34	817	3.27	3.29	386	3.36	3.34	15.32	<.0005	S > E, S > E, S > B
Demographic	24. Age	632	1.41	1.41	88	2.35	2.33	517	1.95	1.96	844	1.65	1.65	393	1.08	1.08	71.54	<.0005	M > F, S > E, S > E, S > B
	25. ED Amount	632	4.01	4.01	88	4.82	4.81	492	3.99	3.98	819	3.65	3.69	393	3.79	3.72	202.75	<.0005	S > E, S > B, S > B
	26. Rel-Import.	630	3.68	3.69	88	3.89	3.94	520	4.66	4.64	843	4.24	4.22	395	3.82	3.88	116.93	<.0005	F > M, S > E, S > E, S > B
	27. Rel-Adher.	629	3.50	3.50	88	3.75	3.79	520	3.93	3.94	841	3.79	3.78	394	3.52	3.53	17.98	<.0005	F > M, S > E, S > E
Change Orientation	28. Self Change	632	2.48	2.38	88	2.65	2.66	520	2.42	2.42	843	2.49	2.49	397	2.43	2.42	2.56	.05	S > E
	29. Child Rear	631	2.98	2.98	88	2.93	2.93	520	3.54	3.54	842	3.21	3.19	397	3.38	3.23	62.38	<.0005	B > E, B > E
	30. Birth Control	630	3.46	3.46	88	3.57	3.58	519	2.60	2.60	840	3.11	3.13	397	3.18	3.06	139.36	<.0005	F > M, S > E, S > B
	31. Automation	632	3.18	3.18	88	3.33	3.31	516	3.48	3.48	839	3.25	3.25	397	3.34	3.35	9.88	<.0005	M > F, S > E
	32. Pol Leaders	630	2.13	2.13	88	2.33	2.32	517	2.46	2.46	839	2.28	2.27	396	2.29	2.30	9.37	<.0005	S > E
	33. Rule Adherence	630	2.80	2.79	88	2.99	2.97	520	2.46	2.47	840	2.62	2.64	396	2.77	2.74	16.84	<.0005	S > B, S > B
Education	34. Local Aid	627	3.03	3.02	88	3.15	3.14	519	2.96	2.96	839	2.99	3.00	395	3.04	3.03	1.47	.22	----------
	35. Fed Aid	628	2.95	2.95	88	2.97	2.96	514	2.86	2.86	834	2.98	2.98	396	2.95	2.95	1.30	.24	----------
	36. ED Plan	624	3.19	3.19	88	3.09	3.09	503	2.97	2.97	823	3.09	3.08	392	3.09	3.09	5.56	.001	E > B

[1] ABS-MR = Attitude Behavior Scale: Mental Retardation.

[2] M.S.U. graduate students in special education and rehabilitation, September, 1967.

[3] M.S.U. sophmore education majors, January, 1968.

[4] Belize (British Honduras) school teachers, January, 1968.

[5] Controls for sample size and sex ratio within samples.

[6] Holding constant sex.

[7] Roughly equivalent to Duncan's Multiple Means Test up to three means. Somewhat more liberal after three means, increasing probability to Type I error.

highlights the utility of the facet approach in attitude item construction. The total scores for these two groups indicate that the Belize teachers have more positive attitudes toward retardation, contrary to expectation, than students studying to be professionals in the area of handicapping conditions. What is particularly clarified by the facet approach is that these more positive attitudes are reflected only in the more abstract "stereotypic" and "normative" levels 1 and 2 and that the Belize group actually scored significantly more poorly on the more personal "hypothetical personal behavior" and "actual personal behavior" levels 4 and 6 of the ABS-MR than did the SER group.

In conclusion it was stated that the results cited above provide support for the content and concurrent validity of the ABS-MR as well as for the utility and fruitfulness of the facet approach to attitude scale construction.

Reliability

One legitimate method for assessing the reliability of the ABS-MR scale would be through a test-retest operation on the same sample which would, when correlated, produce a correlation of temporal stability. Even though the resulting correlation coefficient might be spuriously high because of item recall, this would nevertheless seem to be a viable procedure since it is generally believed that attitudes are relatively permanent (Duijker, 1955). Because

of the impossibility of re-assembling the sample groups used in this present study, however, it was not possible to carry out this procedure on the ABS-DF nor was it possible for uses of the ABS-MR by Harrelson (1970) and Morin (1969).

Another procedure for obtaining an estimate of scale reliability which seems appropriate would be through the split-half method whereby the scale is split into two comparable halves and the scores obtained are correlated and corrected by the Spearman-Brown formula. This procedure would provide a measure of equivalence, or adequacy of item sampling, across all levels of the Attitude-Behavior Scale.

A third satisfactory method of estimating reliability would be through obtaining a measure of internal consistency for each individual scale level by computing a Kuder-Richardson type reliability coefficient for each scale level. Actually, this was the procedure used to estimate the reliability of the ABS-MR.

Hoyt (1967) has described a formula for estimating test reliability based on analysis of variance which gives precisely the same result as the one described by Kuder and Richardson (1937). A variation of Hoyt's formula, allowing for a difference between the method of scoring the ABS scales and the scoring method used in the Hoyt and Kuder and Richardson data, was programmed into the MSU computer and was used to estimate the reliability of the

ABS-MR for the three standardization sample groups on each scale level as well as for the sample on the ABS-DF. Table 11 contains the reliability estimates obtained in this manner for each of the samples on the ABS-MR and Table 12 provides the same information for the ABS-DF.

TABLE 11.--Hoyt reliability coefficients for ABS-MR standardization groups.

Group	ABS-MR Scale Level Reliability Coefficients					
	1	2	3	4	5	6
88 M.S.U. SER Students	.74	.82	.64	.79	.85	.78
633 M.S.U. ED 200 Students	.73	.83	.69	.79	.71	.67
523 Belize Teachers	.63	.75	.60	.79	.76	.76

TABLE 12.--Hoyt reliability coefficients for the ABS-DF groups.

Group	ABS-DF Scale Level Reliability Coefficients					
	1	2	3	4	5	6
51 Teachers of the Deaf	.61	.81	.54	.61	.92	.67
58 Regular School Teachers	.73	.85	.75	.88	.89	.61
50 Mothers of Deaf	.70	.79	.58	.61	.87	.68
55 Managers-executives	.79	.80	.72	.80	.89	.68
51 Mothers of Non-deaf	.69	.79	.62	.80	.85	.65

Shaw and Wright (1967) have reported reliability estimates on a large number of various types of attitude scales, and the figures shown in Tables 11 and 12 for the ABS-MR and the ABS-DF compare very favorably with the majority of those reported by them.

Combining Content and Intensity

All of the data discussed in this chapter in reference to the standardization study has referred to subject responses to the content of each attitude item and does not have reference to the intensity with which these items were responded to. Thus, a weakly felt negative attitude response was given the same weight as a strongly felt negative response and, accordingly, strongly and weakly felt neutral responses and strongly and weakly felt positive responses were weighted equally.

As was indicated in the section of this chapter dealing with intensity, Guttman and Foa (1951) have suggested that it is "quite inadvisable" to ignore attitude intensity in comparing groups. Since the ABS-MR already contained an intensity statement following each content item on each scale level, Harrelson (1970) in his study decided that the content and intensity responses should be combined into one score for each item and in the present research the same was done to eliminate the seemingly inappropriate response weights described above.

Accordingly, a rationale and scoring procedure (Table 13) was developed for combining content and intensity responses which differentially weights each combination of these two variables for every item. Actually, the procedure has the effect of increasing the range of possible scores for each item from 1-3 (negative to positive) to 1-9 (strongly negative to strongly positive). The increase in range of scores should theoretically enhance the reliability of each item (Anastasi, 1961) which in turn should further clarify group differences and relationships between the predictor variables and the Attitude Behavior Scale.

Instrument Limitations

In the development of the ABS-MR the question of response weights arose. In the Harrelson study (1970) the decision was made to weight the items on a negative to positive evaluative dimension without concern whether the most "favorable" response was the most "realistic" response.

Three alternatives were presented to each question: one alternative suggesting a positive evaluation, one a negative evaluation, and the third a neutral position. Ideally, the questions and responses would have been worded so that the favorable, unfavorable, and neutral responses would have been randomly assigned to these three alternatives. Thus, the most favorable response to a question would be alternative 1 while for another question it would

TABLE 13.--Combined content-intensity scoring procedure[a] for ABS-MR Levels 1-6.

Combined Scores: Levels 1-5				Combined Scores: Level 6			
Content	Intensity	Combined	Rationale	Content	Intensity	Combined	Rationale
0	1	0	Deleted from analysis	0	1	0	Deleted from analysis
0	2	0	because attitude direc-	0	2	0	because attitude direction
0	3	0	tion was indeterminable	0	3	0	was indeterminable
				0	4	0	
1	0	2	Intensity error assumed	1	0	2	Intensity error assumed
2	0	5	and neutral intensity	2	0	5	and neutral intensity
3	0	8	score of 2 assigned	3	0	8	score of 3 assigned
1	3	1	Strong negative attitude	1	4	1*	Pleasant to have had no experience
1	2	2	Medium negative attitude	1	1	2	No experience
1	1	3	Weak negative attitude	1	3	2*	In between to have had no experience
				1	2	3*	Unpleasant to have had no experience
2	1	4	Weak neutral attitude	2	2	4	Uncertain but unpleasant experience
2	2	5	Medium neutral attitude	2	3	5	Uncertain but in between experience
2	3	6	Strong neutral attitude	2	1	5*	Unlikely to occur--see footnote
				2	4	6	Uncertain but pleasant experience
3	1	7	Weak positive attitude	3	2	7	Definite experience but unpleasant
3	2	8	Medium positive attitude	3	3	8	Definite experience and in between
3	3	9	Strong positive attitude	3	1	8*	Unlikely to occur--see footnote
				3	4	9	Definite pleasurable experience

[a]Procedure:

"Content" Alternatives	"Intensity" Alternatives
0--no response	0--no response
1--negative response	1--weak intensity
2--neutral attitude	2--medium intensity
3--positive attitude	3--strong intensity

"Content" Alternatives	"Intensity" Alternatives
0--no response	0--no response
1--never have had experience	1--no such experience
2--uncertain whether have had experiences	2--experience was unpleasant
	3--experience was in between
3--yes, have had this experience	4--experience was pleasant

*It will be noted that the scoring procedure is not as logically sequential on level 6 as on levels 1-5. The difficulty arises from the additional "intensity" alternative on level 6 not found on levels 1-5 and from the fact that the analyses were all programmed on the basis of the scoring procedure used on levels 1-5. Because of difficulties encountered in changing entire computer programs to adjust for the additional intensity variable on level 6, it was decided to "program in" the fourth intensity alternative to the already existing programs and the scoring procedure shown above for level 6 is the result of this decision. The combinations with asterisks above are extremely unlikely to occur other than through chance error because of the inherent logical contradictions in these combinations. It will be noted that the remaining combinations maintain the same negative-to-positive direction and range (1-9) as the scores on levels 1-5. Thus, the scoring system for level 6 represents a compromise between the ideal and the practical.

have been alternative 3, and so on in random fashion. For practical reasons involving logistical problems in cross-cultural organization of the data and computer programming, the responses were set up so that alternative 1 always represented the least favorable response, alternative 2 a neutral position, and alternative 3 the most positive response. In such an arrangement there exists some danger of error due to response sets.

Attitude scales of this type are influenced somewhat by the desire of the respondent to answer an item according to what he thinks is socially desirable. Through guaranteeing the subjects complete anonymity the influence of this factor, it is hoped, was lessened. Whether or not this procedure was adequate is not certain.

It was pointed out in the discussion on the development of the ABS-MR scale that the lateral struction or item content was not as well controlled as the joint struction or attitude levels. This was particularly true of level 5 which was not structured on the lateral dimension. Lateral struction was also relatively uncontrolled on the other levels of the ABS-MR and the ABS-DF; that is, the various subscales or levels include items of different content and as a result the same content does not necessarily appear on all levels. In the Hamersma study (1969) the content of each attitude item was repeated across all six levels with the item being altered only to fit the

structure (joint struction) of the different levels. This was not possible in the present study since it was planned to draw comparisons to the ABS-MR data in the Harrelson (1970) study.

It was also previously noted that multiplication of the two elements in each of the five joint struction facets yielded a possible 32 combinations or permutations of elements. The six level permutations of the ABS scales were originally selected primarily through subjective judgment. Maierle (1969) has extended research in this area and found that of the 32 permutations which might be formed, only 12 were semantically consistent. Maierle found that varying numbers of these permutations belong to different levels; that is, if a level is defined by the number of strong or weak elements found in the attitude items of that level, then one permutation exists on level 1, three of level 2, four on level 3, two on level 4, and one permutation each on levels 5 and 6. The violations of simplex orderings previously noted (Table 9) in the standardization data may have been due in part to the fact that four permutations are possible on level 3, the level on which most of the violations of simplex ordering continue to appear.

Maierle (1969) also studied the question relating to simplex ordering dealing with the effect of the order of scale level administration upon the resulting correlation

matrix. In the present study, as in all of the previous research in this area, all of the data have been obtained from administration of various level member sub-tests in the same order, i.e., all items of level 1 have been presented first, followed by those in level 2, then those in level 3 and consecutively through level 6. Maierle (1969) randomly varied the order of scale level presentation of a new Guttman facet type attitude scale to a large group of subjects and found that a better simplex approximation was obtained when correlations were plotted according to theoretical relationships than according to order of administration, thus lending further support to the theoretical assumptions involved. His analysis also indicated that the six permutations originally selected by Jordan (1968) were as "good" as any other similar set.

ABS-DF Adapted Form of ABS-MR Attitude Scale

The ABS-DF consists of six levels, each corresponding to a certain level of the hypothesized attitude universe. The final version of the scale is the revised version of the ABS-MR instrument as developed by Jordan and revised by Poulos for special application for use with the deaf as attitude object. The major changes[1] made, with the exception of the section on knowledge, were the substitution of

[1] Items 63, 65, 73, 75, 115, and 153 in the original ABS-MR were changed to apply to deafness for items 63, 65, 73, 75, 115, and 153 respectively of ABS-DF.

the terms deaf or deafness for any reference to mentally retarded or mental retardation. (See Appendices A.1 and A.2.) Included with the scale were those items that tapped those predictor variables which Jordan labelled determinants of attitude (demographic, socio-psychological, contactual, and knowledge).

In the further revision of the questionnaire to meet the needs and purposes of the present research, the section dealing with the knowledge factor was adapted to apply to the area of the deaf. Proctor's study (1967) furnished several items applicable to the deaf with two items substituted in the final array as a result of clarifying ambiguity of knowledge responses.

Independent Variables

The instrument labeled Personal Questionnaire: DF (Appendix A) was designed to operationalize a number of independent variables suggested by the review of the literature to be determinants of attitudes toward deaf persons. The items in this questionnaire were used in the international study of attitudes toward mentally retarded persons conducted by Jordan (1970) and all revisions in these items were made by that author. The only other revisions were those made in direct reference to the deaf instead of the mentally retarded.

Demographic Variables

A total of seven demographic items were included in the questionnaire which, from a theoretical standpoint, might correlate with or predict the criterion: sex, item 134; age, item 81; amount of education, item 83; work experience to education, item 135; marital status, item 136; religious preference, item 137; and perceived importance of and adherence to religion, items 82 and 92.

Change Orientation

A measure of change orientation was included as taken from Jordan ABS-MR to measure attitudes toward change in the following areas: self change, child-rearing practices, legislation relating to adult deaf, automation, and political leadership. Items included are: self change, items 84 and 93; child-rearing practices, item 85; birth control, item 86; automation, item 87; and political leadership change, item 88.

Educational Aid and Planning

Items were included in the questionnaire to measure opinions regarding local government aid to education (item 89), federal aid to education (item 90), as well as to who should have responsibility for educational planning (item 91).

Contact with Attitude Object Persons

Questions 94 through 99 were designed to operationalize variables involved in personal contact between the respondents and deaf persons in this study. This section replaces the one in the original instrument referring to handicapped persons and mentally retarded. In all statements the words deaf or deaf persons were substituted for mentally retarded or retarded persons. The items included are conceptually distinct. Item 94 reports the frequency of contact; item 95 the ease with which the contact might have been avoided; items 96 and 97 the extent to which the respondent gained materially by the contact; while item 98 indicates the availability of alternatives to working with the deaf. Item 99 was designed to measure respectively the amount of enjoyment experienced in contact with deaf persons.

Efficacy

Attitude items 100, 102, 104, 106, 108, 110, 112, 114, and 116, which appear in the questionnaire (Appendix A) under the heading "Life Situations," were adapted from a fully evolved Guttman Scale reported by Wolf (1967). Measures of intensity, or answer "certainty," i.e., items 101, 103, 105, 107, 109, 111, 113, 115, and 117, were added to the original items evolved by Wolf. In addition, four levels of intensity of agreement-disagreement with the items replace the original "agree-disagree" dichotomy used by Wolf.

This section was used intact from the Jordan ABS-MR Scale. Attitude items which appear in the questionnaire under the heading "Life Situations" were those adapted from Jordan's scale.

The scale was designed to measure attitudes toward man and his environment and attempts to determine the respondent's view of this relationship. This variable has been labeled "Efficacy" by Jordan since the scale purports to measure attitudes towards man's effectiveness in the face of his natural environment.

Attitude Object

One characteristic of the present formulation is that the analyses involved are independent of a particular attitude object, provided that object is some specifiable group of persons. The attitude object specified in the present study is the "deaf" person. Such a person is described in commonly acceptable terms as that individual who has a hearing loss of such a degree that he cannot be educated without special educational measures, such as enrollment in a school for the deaf or classes for the deaf. The term "deaf person" would apply to the individual who may have a total loss of hearing or a hearing loss of such severity as to necessitate special educational measures beyond the regular classroom. Children with the losses described above have losses in the speech range at or exceeding 60 decibels and would include those with such a

hearing loss whether they wear a hearing aid or not. However, no fine dividing line will limit the generally acceptable term of deafness as "not so deaf" in colloquial terms also refers to the hard of hearing and if these individuals need specialized training as is provided in schools for the deaf, then they are included in the "acceptable group" as objects.

CHAPTER IV

DESIGN AND ANALYSIS PROCEDURES

Major Research Aim

One major aim of this study was to investigate value orientations and attitudes held by five groups toward the deaf. The groups were comprised of:

1.	Teachers of the deaf	TDF	N = 51
2.	Regular school teachers	RST	N = 58
3.	Mothers of deaf children	MDF	N = 50
4.	Mothers of non-deaf children	MND	N = 51
5.	Businessmen (Managers-executives)	MAN	N = 55
		TOTAL	N =265

Sample

All the subjects resided in Michigan. For those mothers whose children attended either a local school program or the state school for the deaf as day pupils, residence was in Genesee County. The remainder of mothers came from the state at large.

On the whole the cooperation of the mothers of deaf children was very encouraging. Those who were from outstate had been informed by letter that should they be coming to the school to pick up their child prior to a

school vacation that it would be appreciated if they would participate as respondents in this study. Those who lived in the area were informed by letter that it would be appreciated if they could participate on one of two days set aside for the administration of the questionnaire and the response was most gratifying. There was no a priori selection of parents in either case. In the out-state list all who drove to school with their children were included. For the area involving pupils on a day basis, all the names on the list were notified.

The mothers of non-deaf children were those from the greater Genesee County area. Composition of the various groups making up this sample was mixed. There were parents from central city areas, suburban areas, and some from rural areas. They were representative of various ethnic and racial groups as well as economic levels.

The group comprising the regular school teacher sample were teachers from Genesee County, a school district in Gratiot County, and a city school in Flint.

The elementary teachers of the deaf were drawn from the public residential school for the deaf and a private residential school for the deaf; both in Michigan.

The manager-executive subjects were drawn from the greater Genesee County area. The scale was administered to various business groups following an explanation of the general purpose of the study. This was done at a regular noon luncheon meeting for these groups.

In summary, it is felt that the obtained samples were quite good, generally representative, and adequate for a study of this type.

Hypotheses of the Study

The variables in this study were intercorrelated (see Table 14) to enable examination of relationships for both content and intensity scores of the criterion (ABS-DF) across each level with 21 independent variables. This facilitated testing of the following hypotheses.

Relating Attitudes and Values

H-1.--Persons who score high in efficacy will score high in positive attitudes toward the deaf on each of the six levels of the ABS-DF.

Relating Attitudes and Knowledge

H-2.--Persons who score high in knowledge about the deaf will score high in positive attitudes toward the deaf on each of the six levels of the ABS-DF.

Relating Attitudes and Contact

H-3.--The more frequent the contact with deaf persons the higher will be the intensity scores on each of the levels of the ABS-DF.

H-4.--High frequency of contact with deaf persons will be associated with favorable attitudes toward the deaf on each of the levels of the ABS-DF if high frequency is

concurrent with (a) alternative rewarding opportunities, (b) ease of avoidance of the contact, and (c) enjoyment of the contact.

Relating Attitudes and Religiosity

H-5.--Persons who score high on stated importance of religion will score low on positive attitudes toward the deaf.

H-6.--Persons who score high on stated adherence to religion will score low on positive attitudes toward the deaf.

Relating Attitudes and Demographic Variables

H-7.--Amount of education will be positively related to favorable attitudes toward the deaf.

H-8.--Age will be positively related to favorable attitudes toward the deaf.

H-9.--Women will score higher on positive attitudes toward the deaf than men.

Relating Attitudes and Change Orientation

H-10.--Persons who score high on change orientation will score high on positive attitudes toward the deaf.

Relating Attitudes and Opinions on Educational Aid and Planning

H-11.--Agreement with government aid to education will be positively related to favorable attitudes toward the deaf.

H-12.--Agreement with centralized government planning of education will be positively related to favorable attitudes toward the deaf.

Relating Attitudes and Group Membership

H-13.--The groups will assume the following order with respect to favorable attitudes toward the deaf: mothers of the deaf>teachers of the deaf>regular school teachers>mothers of the non-deaf>manager-executives.

Relating Attitudes and Multidimensionality

H-14.--The ABS-DF scale levels or attitude subuniverses will form a Guttman simplex for each of the sample groups.

Analysis Procedures

The control Data Corporation Computer (CDC 3600 and 6500) at Michigan State University (MSU) was used to analyze the data, which also facilitated the data being analyzed as an integral part of the larger comprehensive study by Jordan. Table 14 contains the variable list of the entire study by IBM card and column.

Descriptive Statistics

Two Frequency Column Count Programs (Clark, 1964) designated as FCC-I and FCC-II were used to compile the frequency distribution for every item on the instrument. This procedure was also found to be useful as a final check on the accuracy of the data.

TABLE 14.--ABS-DF: Basic variable list by IBM card and column--Poulos study.

		Variable[1]	Card	Column	Page	Item	
Attitude Content	1.	Stereotype	1	28,30 alter to 66	2-4	1,3	alter to 39
	2.	Normative	2	28,30 alter to 66	5-7	41,43	79
	3.	Moral Eval.	3	28,30 alter to 66	8-11	81,83	119
	4.	Hypothetical	4	28,30 alter to 66	12-14	121,123	159
	5.	Feeling	5	28,30 alter to 66	15-17	1,3	39
	6.	Action	6	28,30 alter to 66	18-20	41,43	79
Attitude Intensity	7.	Stereotype	1	29,31 alter to 67	2-4	2,4	alter to 40
	8.	Normative	2	29,31 alter to 67	5-7	42,44	80
	9.	Moral Eval.	3	29,31 alter to 67	8-11	82,84	120
	10.	Hypothetical	4	29,31 alter to 67	12-14	122,124	160
	11.	Feeling	5	29,31 alter to 67	15-17	2,4	40
	12.	Action	6	29,31 alter to 67	18-20	42,44	80
V[4]	13.	Efficacy--Cont.	7	29,30 alter to 44	26-27	100,102	alter to 116
	14.	Efficacy--Int.	7	29,31 alter to 45	26-27	101,103	117
K[3]	15.	Df Knowledge	7	46-61	28-30	118-133	118-133
Contact	16.	Df Amount	1-7	18	24	94	
	17.	Df Avoid	1-7	19	24	95	
	18.	Df Income	1-7	21	25	97	
	19.	Df Alter	1-7	22	25	98	
	20.	Df Enjoy	1-7	23	25	99	
Demo-graphic	21.	Age	1-7	5	21	81	
	22.	Educ. Amount	1-7	7	21	83	
	23.	Religion Impor.	1-7	6	21	82	
	24.	Religion Adher.	1-7	16	23	92	
Change Orientation	25.	Self Change	1-7	8	22	84	
	26.	Child Rearing	1-7	9	22	85	
	27.	Birth Control	1-7	10	22	86	
	28.	Automation	1-7	11	22	87	
	29.	Political Lead.	1-7	12	23	88	
	30.	Rule Adher.	1-7	17	24	93	
Educ.	31.	Local Aid	1-7	13	23	89	
	32.	Federal Aid	1-7	14	23	90	
	33.	Ed. Planning	1-7	15	23	91	
Categ. data[2]	34.	Sex[5]	1-7	24	31	134	
	35.	Ed. Contact Var.	1-7	25	31	135	
	36.	Marital Status	1-7	26	31	136	
	37.	Rel. Affiliation	1-7	27	31	137	
	38.	DF gain	1-7	20	24	96	
	39.	Group	1-7	1	none	none	
	40.	Subject no.	1-7	2-3	none	none	
	41.	Card no.	1-7	4	none	none	

[1]Based on the ABS-DF 112269 TP edition.

[2]Not used in correlational analysis.

[3]K = Knowledge.

[4]V = Value.

[5]Female = 1, male = 2.

[6]Groups = TDF--1
RST--2
MDF--4
MAN--5
MND--8

Correlational Statistics

In the CDC 3600 MDSTAT program (Ruble & Rafter, 1966), a great deal of data can be secured in one analysis. Separate analysis can be done for the total group and for any number of sub-groups, or partitionings of the data. For each specified group (e.g., total, male, female), a number of statistics can be requested. Those used for each partitioning in this research were the means and standard deviations for each variable and the matrix of simple correlations between all variables.

Partial and multiple correlations are outputs of the general multiple regression model used in the CDC program at MSU (Ruble, Kiel & Rafter, 1966a). One benefit of the use of partial correlation is that a number of variables which are assumed to have some relationship to a criterion, or dependent variable, can be examined simultaneously. Often when a series of Pearsonian product-moment r's are computed between a criterion and a set of variables considered to be predictors of the criterion, spurious conclusions may be obtained because the predictor variables are themselves inter-related rather than directly predictive of the criterion. In a partial correlation solution to the problem, these relationships among the predictor variables are considered in computing the correlation of each variable with the criterion, i.e., the effects of all but one variable are held constant.

The use of multiple regression analysis has been recommended by Ward (1962) because it "not only reduces the dangers in piecemeal research but also facilitates the investigation of broad problems never before considered 'researchable' (p. 206)." The multiple correlation program yields the following statistics: the beta weights of all predictor variables, a test of significance for each beta weight, and the partial correlations between each predictor and the criterion.

Analysis of Variance Statistics

The UNEQI routine (Ruble, Kiel & Rafter, 1966b) was used to calculate the one-way analysis of variance statistics. This program is designed to handle unequal frequencies occurring in the various categories. In addition to the analysis of variance tables, the frequency, sums, means, standard deviations, sums of squares, and sums of squared deviations of the mean were included for each category.

A two-way analysis of variance design for unequal n's was used to analyze group-sex interaction (Ruble, Paulson & Rafter, 1966). Since the samples were not equal in size or sex ratio within groups, an "adjusted mean" was computed on which to base all F tests. The adjusted mean equalizes or accounts for the variance in the size of the group as well as for unequal sex distribution within the samples. For convenience of computer programming the F

statistic was used for testing of all mean differences, even though differences between two means are usually tested by the t statistic. Comparisons of the F and t statistics have shown that results are the same for the t and F test procedures (Edwards, 1966).

While a significant overall F leads to rejection of the statistical hypothesis, it is not known whether every mean is significantly different from every other mean when three or more means are involved. Several multiple means tests have been proposed for determining the differences between treatment means (Winer, 1962). In this study the F test for group comparisons is the usual one while the F test used to test for differences between the "adjusted means" of "pairs of groups" is equal to a two tailed t test, while also fully accounting for the other experimental factors. This procedure for testing for significance among multiple means is approximately equal to Duncan's New Multiple Means Test (Edward, 1960; Kramer, 1956, pp. 307-310) up to and including three treatment means. This procedure is somewhat more liberal than Duncan's when more than three means are included, thus increasing the likelihood of Type I error. The procedure also does not account for non-independence among the pair-of-treatment means.

The approximate significance probability of the F statistic is also included in the computer print-out. This

convenient figure enables the researcher to know if the F was significant without referring to a table. For example, if the number printed out was .05, the level of confidence, with appropriate degrees of freedom, would be .05 or less.

The Q^2 Statistic

Kaiser (1962, p. 155) suggests a procedure for testing a simplex approximation: "for scaling the variables of a Guttman simplex . . . the procedure . . . orders the variables. A measure of the goodness of fit of the scale to the data is suggested."

Kaiser's approach may be seen as performing two functions: (a) a "sorting" of virtually all possible arrangements of data so as to generate the best empirically possible simplex approximation; and (b) an assignment of a descriptive statistic, "Q^2," to specified matrices. The index Q^2 is a descriptive one, with a range of 0.00 to 1.00.

A computer program was developed which (a) reordered the level members of each matrix, by Kaiser's procedures, so as to generate the best empirically possible simplex approximation; and (b) calculated Q^2 for the hypothesized ordering and for the empirically best ordering of each matrix. The distribution of Q^2 has not been developed, therefore, probability statements about "better" or "worse" matrix ordering can not be made. However, the hypothesis of the present study examines whether the six levels of the ABS-DF form the best simplex approximation when listed level-by-level, regardless of the order of administration.

At the time of the research completion, appropriate likelihood ratios for measuring goodness of fit were not available. Mukherjee (1966) suggests a method which appears appropriate for matrices of equally spaced correlations, but neither facet theory nor the actual data suggest that the matrices in the present study have equally spaced entries. Harrelson's (1970) research also contains a rather complete discussion of the problems related to the Q^2 procedure.

CHAPTER V

ANALYSIS OF THE DATA

The data in this research were analyzed by computer at Michigan State University. Computer analysis enabled the testing not only of the major research hypotheses but also provided cues in the data which may have implications for future research.

ABS-DF Reliability

As mentioned in Chapter III, the ABS-DF content and intensity scores were combined into one score for each subject on each item according to the procedure described in Table 13. This was a similar procedure as was done in the Harrelson study (1970). It had the effect of increasing the range of possible scores for each item from 1-3 (negative to positive) to 1-9 (strongly negative to strongly positive).

To further test the effectiveness of this procedure, reliability estimates were obtained on the ABS-DF for the samples on content scores alone and on the combined content-intensity scores via the Hoyt (1966) method. The resulting reliability estimates are shown in Table 15.

TABLE 15. ABS-DF Hoyt reliabilities for content and combined content-intensity scores for samples.

Group		Scale Level Reliability Coefficients					
		1	2	3	4	5	6
Teachers of the Deaf	Content	.61	.81	.54	.61	.92	.67
(51)	Combined	.65	.84	.61	.60	.90	.50
Regular School Teachers	Content	.73	.85	.75	.88	.87	.61
(58)	Combined	.70	.86	.73	.90	.87	.53
Mothers of the Deaf	Content	.70	.79	.58	.61	.87	.68
(50)	Combined	.67	.82	.65	.65	.86	.58
Manager-Executives	Content	.79	.80	.72	.80	.89	.68
(55)	Combined	.78	.82	.72	.81	.88	.58
Mothers of Non-Deaf	Content	.69	.79	.62	.80	.85	.65
(51)	Combined	.72	.83	.68	.82	.87	.50

Table 15 reveals that the ABS-DF reliabilities were elevated as predicted in most instances as a result of the combining procedure--particularly levels 1, 2, and 3. The reliabilities also increased somewhat on level 4 for all groups except teachers of the deaf but not to the degree of the other ABS-DF levels. The combining procedure resulted in a drop for all groups on level 6.

The content reliability coefficients presented in Table 15 for the present groups are comparably similar to those appearing in Table 11 in Chapter III for the ABS-MR standardization groups with the exception of level 6. The mean of the content reliability coefficients on level 6 for the standardization groups was .74 while the mean for the present samples on this level is .66.

In general, and as was the case with the reliability figures for the standardization groups, the ABS-DF reliability estimates obtained for the present samples compare favorably with the majority of those reported by Shaw and Wright (1967) for a variety of attitude scales, and they appear adequate for the type of group research in the present study.

Major Research Hypotheses

The analysis of the data as it relates to the major research hypotheses are presented in the same order as the hypotheses were listed in Chapter IV. Viewing the several correlational hypotheses, larger correlations appear for

the total sample then for the individual samples, which suggests homogeneity within and differences between groups, with regard to the predictor variables in these instances. (The means and standard deviations of the predictor variables used in this study are contained in Table 30, Appendix B.)

Relating Attitudes and Efficacy

H-1.--Persons who score high in efficacy will score high in positive attitudes toward the deaf.

The Efficacy Scale was designed to measure the subject's view of man's effectiveness in the face of his natural environment. Hypothesis 1 was tested by correlating scores on the Efficacy Scale with scores on the six levels of the ABS-DF. Table 16 presents these correlations for the five sample groups and for the entire sample.

Table 16 indicates a statistically significant positive correlation between the Efficacy variable at level 4 for regular school teachers, and weak positive correlations at level 4 (hypothetical behavior) and at level 5 (personal feelings) for managers. Four other correlations in Table 16 reached significance: a significant positive correlation on level 1 (stereotypic) for the total sample, a positive significant correlation at level 3 (personal moral evaluation) for the total sample, a significant positive correlation at level 4 (hypothetical behavior) for the total sample, and a significant negative correlation at level 6 (actual personal behavior) for the total sample.

TABLE 16.--ABS-DF efficacy variable correlations for samples.

Group	ABS-DF Scale Level Correlations					
	1	2	3	4	5	6
Teachers of the Deaf (51)	.07 (.63)	.12 (.41)	.08 (.60)	.21 (.13)	.18 (.21)	.16 (.25)
Regular School Teachers (58)	-.04 (.78)	-.01 (.96)	.18 (.16)	.33 (.01)	-.09 (.51)	.04 (.78)
Mothers of the Deaf (50)	-.05 (.74)	-.24 (.09)	.03 (.82)	-.07 (.60)	-.05 (.73)	-.03 (.84)
Manager Executives (55)	.04 (.78)	-.06 (.68)	.13 (.32)	.24 (.07)	.25 (.06)	.16 (.24)
Mothers of Non-Deaf (50)	-.04 (.76)	-.04 (.80)	.22 (.12)	.16 (.26)	.01 (.94)	.02 (.89)
Total Sample (264)	.26 (.001)	.05 (.42)	.14 (.02)	.38 (.001)	-.10 (.09)	-.31 (.001)

Significance levels are shown in parentheses.

Table 16 indicates very limited support for the hypothesis. The small yet statistically significant positive correlations for the total sample on levels 1, 3, and 4 are in direct support of the hypothesis; however, the significant negative correlation for the total sample on level 6 is in contradiction of the hypothesis. It is concluded that Hypothesis 1 is partially, though weakly, supported by the data.

Relating Attitudes and Knowledge

H-2.--Persons who score high in knowledge about the deaf will score high in positive attitudes toward the deaf.

Hypothesis 2 was tested by correlating the ABS-DF with the Knowledge About Deaf Scale described in Chapter IV. Table 17 presents these correlations for the various group samples and the total sample.

Examination of Table 17 discloses that all significant correlations are positive except four. Significant positive correlations were found at level 4 (personal hypothetical behavior) for regular school teachers, and at level 4 (personal hypothetical behavior) for managers. A significant negative correlation was found at level 5 (personal feelings) for mothers of the deaf and at level 6 (actual personal behavior) for mothers of non-deaf. For the total sample significant correlations were obtained at all levels except level 2 (societal interactive norm); these significant correlations as obtained were positive at

TABLE 17.--ABS-DF knowledge variable correlations and significance levels[1] for samples.

Group	ABS-DF Scale Level Correlations					
	1	2	3	4	5	6
Teachers of the Deaf (51)	-.19 (.17)	-.14 (.32)	-.05 (.74)	.13 (.37)	-.21 (.13)	.14 (.31)
Regular School Teachers (58)	-.19 (.15)	.02 (.89)	.17 (.20)	.27 (.03)	-.03 (.81)	-.06 (.66)
Mothers of the Deaf (50)	-.20 (.16)	-.05 (.70)	.19 (.18)	.04 (.80)	-.31 (.02)	.02 (.87)
Manager-Executives (55)	.07 (.62)	.10 (.44)	.11 (.42)	.33 (.01)	-.21 (.11)	.02 (.86)
Mothers of Non-Deaf (50)	.03 (.81)	-.09 (.53)	-.08 (.56)	-.18 (.20)	-.05 (.71)	-.33 (.02)
Total Sample (264)	.29 (.001)	.10 (.11)	.14 (.02)	.44 (.001)	-.32 (.001)	-.53 (.001)

[1]Significance levels in parentheses.

level 1 (societal stereotype), at level 3 (personal moral evaluation), and at level 4 (personal hypothetical behavior). They were negative at level 5 (personal feelings) and at level 6 (actual personal behavior).

In comparison to the Harrelson study dealing with the mentally retarded as the attitude object, these results are not parallel, as all of the findings in the Harrelson study showed negative correlations. In the present study all significant correlations were positive except four. These occurred for the total sample at levels 1, 3, 4, and for regular school teachers and managers at level 4. The four negative correlations occurred at levels 5 and 6; at level 5 for mothers of deaf, level 6 for mothers of non-deaf and levels 5 and 6 for total sample.

In short, Table 17 suggests that increased knowledge about deafness may be a weak predictor of positive attitudes toward the deaf but it's not an indicator in the reverse. The results are in partial support of the hypothesis.

Relating Attitudes and Contact

H-3.--The more frequent the contact with deaf persons the higher will be the intensity scores on the ABS-DF, regardless of the direction (positiveness or negativeness) of attitude.

Hypothesis 3 was tested by keeping content and intensity responses separate and correlating item 94 in the questionnaire section, which deals with the frequency of contact with deaf persons, and the intensity variables of the ABS-DF.

Table 18 contains these correlations along with separate correlations between the contact variable and ABS-DF content and intensity scores.

Referring to the intensity correlations in Table 18, it can be seen that frequency of contact is predominantly positively related at those levels where significant correlations are obtained. In only one level was there a negative correlation at a significant level; this was at the level 1 (societal stereotype) for teachers of the deaf. For regular teachers we find a significant positive correlation at level 4 (personal hypothetical behavior) and level 6 (personal action). The same was true for mothers of the deaf. Managers-executives obtained significant positive correlations at level 2 (societal norm) and level 6 (personal action). Mothers of the non-deaf showed a significant positive correlation at level 1 (societal stereotype).

For the total samples significant positive correlations were obtained at all levels except level 2 (normative).

In comparison to the Harrelson study it may be pointed out that the findings for mothers of deaf children were opposite to those obtained for mothers of the retarded. Harrelson's study indicated a negative intensity correlation at level 5. At this level no significant correlation was obtained for MDF. On the other hand, the intensity correlation at level 4 for MDF was significantly positive

TABLE 18.--ABS-DF intensity, content, and combined content and intensity correlations and significance levels with amount of contact with deaf persons for samples.

Group	Variable	ABS-DF Scale Level Correlations					
		1	2	3	4	5	6
TDF	Intensity	-28 (04)	-20 (15)	04 (79)	-05 (52)	-19 (18)	05 (72)
	Content	07 (60)	05 (73)	-22 (11)	-17 (23)	-23 (10)	11 (42)
	Combined	04 (79)	05 (75)	-18 (20)	-17 (22)	-26 (06)	10 (48)
RST	Intensity	11 (40)	-06 (66)	12 (37)	29 (03)	08 (52)	62 (001)
	Content	11 (41)	10 (46)	-14 (30)	-01 (96)	-07 (61)	65 (001)
	Combined	10 (46)	09 (51)	-13 (33)	08 (54)	-06 (65)	64 (001)
MDF	Intensity	12 (42)	10 (47)	23 (11)	36 (01)	10 (48)	30 (03)
	Content	-05 (71)	-14 (34)	-27 (05)	27 (06)	20 (17)	09 (53)
	Combined	-02 (89)	-09 (52)	-22 (12)	33 (02)	22 (13)	24 (08)
MAN	Intensity	22 (10)	27 (05)	13 (34)	14 (31)	13 (32)	49 (001)
	Content	08 (54)	27 (05)	17 (22)	27 (04)	25 (06)	46 (001)
	Combined	11 (43)	27 (04)	21 (11)	28 (03)	27 (04)	49 (001)
MND	Intensity	38 (01)	-01 (96)	-04 (75)	-04 (76)	-06 (69)	08 (55)
	Content	39 (004)	08 (58)	11 (46)	-02 (91)	-07 (64)	-06 (68)
	Combined	39 (004)	09 (54)	09 (51)	-02 (89)	-09 (52)	-05 (72)
Total Sample	Intensity	32 (001)	04 (55)	29 (001)	37 (001)	25 (001)	39 (001)
	Content	04 (56)	01 (84)	04 (54)	37 (001)	04 (54)	06 (30)
	Combined	-05 (39)	01 (91)	08 (19)	41 (001)	13 (03)	20 (001)

Significance levels are shown in parentheses.
TDF = Teachers of the deaf.
RST = Regular school teachers.
MDF = Mothers of the deaf.
MAN = Managers and Executives.
MND = Mothers of non-deaf.

and likewise so at level 6. Interpretation of level 6 with results of level 4 (hypothetical behavior) shows some conformity of feelings. It should be recalled that "intensity" on level 6 measures the degree of pleasantness or unpleasantness of behavioral interactions with the deaf.

For manager-executives a similar interpretation leads to reinforcement in a like direction for intensity feelings from level 2 (societal norm) to a measure of pleasantness or unpleasantness of contact, as found in level 6, which for this group was very significant.

For mothers of the non-deaf a significant positive correlation was obtained on level 1.

In contrast to the Harrelson study, increase in contact for mothers of the deaf resulted in mothers being very sure of their feelings about the deaf. Consistent positive correlations for levels 4 and 6 (actual personal behavior) show strength of direction of intensity.

To summarize, the intensity data presented in Table 18, showing significant positive correlations between amount of contact with the deaf at all but level 2 of the ABS-DF intensity scores for the total sample, suggest rather direct and strong support for Hypothesis 3.

H-4.--High frequency of contact with deaf persons will be associated with favorable attitudes toward the deaf on each of the levels of the ABS-DF if high frequency is concurrent with (a) alternative rewarding opportunities, (b) ease of avoidance of the contact, and (c) enjoyment of the contact.

The hypothesis for contact and favorableness of attitudes toward the deaf was supported, in that the multiple correlation coefficient for each group: teachers of the deaf, regular school teachers, mothers of the deaf, managers, mothers of non-deaf, females, males, and for the total group, comparing all contact variables (see variable list, Table 10) with the total ABS-DF (Table 19a to 19h), indicated a high positive relationship. One exception was noted for the mothers of the deaf in that no multiple correlation run was possible as all mothers answered variable 19, question 98 the same. Instead a multiple R was obtained with the remaining contact variables (deleting variable 19). The resulting correlations are noted in Table 19c; however, difficulty with the computer lab in obtaining corrected reruns by eliminating variable 19 dealing with alternative rewarding opportunities resulted in incomplete returns. Data as received were applicable to levels 1, 2, and 3 only, and consequently disregarded.

Comparing all contact variables with specific ABS-DF levels for the total groups (Table 19h) reveals that contact is most related to the personal hypothetical behavior, personal feeling, and action levels as well as level 1 (societal stereotype) of the attitude continuum.

The partial correlation coefficients for the contact variables, using the total group for comparison (Table 19h) indicates significant positive correlations between the

TABLE 19a.--Multiple and partial correlations between ABS-DF and contact variables for teachers of the deaf.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Df. Amt.	.07	.04	.08	.08	-.15	-.11	-.07	-.08	-.17	-.22	.15	.15
	(.63)	(.81)	(.60)	(.61)	(.33)	(.46)	(.66)	(.59)	(.26)	(.14)	(.32)	(.30)
Df. Avoid.	-.27	-.23	-.11	-.11	.04	.004	.14	.16	.18	.18	-.11	-.09
	(.06)	(.12)	(.48)	(.48)	(.77)	(.98)	(.33)	(.30)	(.22)	(.23)	(.46)	(.56)
Df Income	.10	.17	.06	.04	-.01	-.05	.05	.05	-.04	-.004	-.07	-.08
	(.52)	(.26)	(.71)	(.79)	(.94)	(.74)	(.75)	(.72)	(.78)	(.97)	(.66)	(.58)
Df. Alter.	.18	.21	.13	.14	.29	.23	.34	.29	.08	.03	.19	.22
	(.23)	(.17)	(.38)	(.34)	(.05)	(.11)	(.02)	(.05)	(.59)	(.85)	(.20)	(.14)
Df. Enjoy	.23	.19	.28	.25	.12	.15	.19	.16	-.02	-.01	.09	.13
	(.12)	(.19)	(.06)	(.09)	(.41)	(.32)	(.21)	(.27)	(.90)	(.96)	(.56)	(.38)
Multiple r	.42	.42	.37	.35	.42	.38	.49	.44	.30	.31	.30	.34
	(.005)	(.005)	(.005)	(.01)	(.005)	(.005)	(.005)	(.005)	(.025)	(.025)	(.025)	(.010)

Significance levels are shown in parentheses.

TABLE 19b.--Multiple and partial correlations between ABS-DF and contact variables for regular school teachers.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Df. Amt.	.19	.11	.07	.06	-.21	-.23	-.08	-.05	-.12	-.07	.55	.54
	(.17)	(.41)	(.61)	(.68)	(.12)	(.09)	(.55)	(.74)	(.37)	(.62)	(.0005)	(.0005)
Df. Avoid.	-.04	-.11	-.11	-.11	.12	.06	.03	.03	.12	.12	.17	.20
	(.80)	(.43)	(.44)	(.44)	(.41)	(.65)	(.85)	(.84)	(.39)	(.39)	(.23)	(.14)
Df. Income	-.09	.004	.13	.16	.14	.11	.02	-.01	.09	.07	.09	.11
	(.53)	(.98)	(.34)	(.25)	(.31)	(.44)	(.91)	(.92)	(.51)	(.60)	(.52)	(.41)
Df. Alter.	.008	-.04	-.06	-.10	-.09	-.09	.03	.001	-.07	-.06	.01	-.04
	(.95)	(.77)	(.66)	(.49)	(.52)	(.51)	(.86)	(.99)	(.63)	(.65)	(.96)	(.79)
Df. Enjoy	-.10	-.01	-.03	-.02	.07	.14	.10	.13	.03	.02	.15	-.13
	(.46)	(.93)	(.84)	(.88)	(.62)	(.32)	(.49)	(.36)	(.82)	(.89)	(.27)	(.33)
Multiple r	.20	.17	.23	.24	.26	.26	.14	.17	.19	.17	.67	.67
	(>.05)	(>.05)	(.05)	(.05)	(.05)	(.05)	(>.05)	(>.05)	(>.05)	(>.05)	(.005)	(.005)

Significance levels are shown in parentheses.

TABLE 19c.--Multiple and partial correlations between ABS-DF and contact variables for mothers of the deaf.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Df. Amt.	.04	-.003	.05	.05	-.20	-.18						
	(.80)	(.98)	(.72)	(.74)	(.18)	(.29)						
Df. Avoid.	-.27	-.23	-.11	-.11	.03	-.003						
	(.06)	(.11)	(.46)	(.46)	(.83)	(.98)						
Df. Income	.11	.18	.07	.05	.01	-.03						
	(.46)	(.22)	(.65)	(.72)	(.93)	(.84)						
Df. Alter.												
Df. Enjoy	.30	.28	.34	.31	.23	.24						
	(.04)	(.06)	(.02)	(.03)	(.11)	(.10)						
Multiple r	.30	.36	.35	.35	.32	.30						
	(.005)	(.01)	(.01)	(.025)	(.025)	(.025)						

Significance levels are shown in parentheses.

TABLE 19d.--Multiple and partial correlations between ABS-DF and contact variables for managers-executives.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Df. Amt.	.05	.08	.17	.18	.16	.21	.25	.26	.27	.27	.46	.49
	(.74)	(.57)	(.24)	(.20)	(.27)	(.15)	(.08)	(.07)	(.06)	(.05)	(.001)	(.0005)
Df. Avoid.	-.44	-.42	-.14	-.15	-.05	-.05	-.21	-.21	-.15	-.14	-.23	-.24
	(.001)	(.002)	(.34)	(.29)	(.72)	(.75)	(.13)	(.14)	(.28)	(.32)	(.10)	(.09)
Df. Income	.09	.06	.15	.11	.11	.04	-.11	-.10	.09	.02	.09	.004
	(.53)	(.67)	(.30)	(.45)	(.44)	(.78)	(.46)	(.51)	(.52)	(.87)	(.55)	(.98)
Df. Alter.	-.16	-.08	-.12	-.08	-.01	.04	.06	.09	.01	.11	.08	.09
	(.26)	(.56)	(.42)	(.56)	(.94)	(.80)	(.70)	(.52)	(.93)	(.43)	(.58)	(.55)
Df. Enjoy	.14	.12	.27	.25	-.02	-.02	.12	.11	-.07	-.02	-.04	.01
	(.32)	(.39)	(.06)	(.07)	(.89)	(.91)	(.39)	(.43)	(.63)	(.88)	(.76)	(.97)
Multiple r	.46	.44	.40	.39	.21	.23	.36	.37	.33	.33	.52	.54
	(.005)	(.005)	(.005)	(.005)	(.05)	(.05)	(.01)	(.005)	(.01)	(.01)	(.005)	(.005)

Significance levels are shown in parentheses.

TABLE 19e.--Multiple and partial correlations between ABS-DF and contact variables for mothers of non-deaf.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Df. Amt.	-.18	-.18	-.08	-.11	-.10	-.08	.20	.18	.11	.08	.24	.24
	(.22)	(.24)	(.60)	(.48)	(.50)	(.59)	(.17)	(.21)	(.45)	(.60)	(.10)	(.10)
Df. Avoid.	.03	.13	.13	.18	-.08	-.03	-.03	.03	.22	.28	.18	.33
	(.84)	(.37)	(.38)	(.24)	(.62)	(.87)	(.84)	(.83)	(.14)	(.06)	(.24)	(.02)
Df. Income	-.09	-.20	-.04	-.05	.02	.02	-.08	-.08	-.02	.04	.28	.32
	(.56)	(.18)	(.78)	(.75)	(.87)	(.88)	(.58)	(.60)	(.92)	(.79)	(.06)	(.03)
Df. Alter	.07	.20	.04	.04	.01	.01	.10	.10	.02	-.02	-.26	-.29
	(.64)	(.19)	(.80)	(.77)	(.95)	(.94)	(.51)	(.50)	(.88)	(.88)	(.08)	(.05)
Df. Enjoy	-.23	-.20	-.15	-.07	.08	.11	-.002	.05	-.27	-.22	.26	.25
	(.12)	(.18)	(.33)	(.64)	(.58)	(.45)	(.99)	(.75)	(.07)	(.14)	(.07)	(.10)
Multiple r	.46	.42	.24	.24	.26	.28	.28	.33	.28	.30	.64	.71
	(.005)	(.005)	(.05)	(.05)	(.025)	(.025)	(.025)	(.01)	(.025)	(.025)	(.005)	(.005)

Significance levels are shown in parentheses.

TABLE 19f.--Multiple and partial correlations between ABS-DF and contact variables for females.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Df. Amt.	-.12	-.09	-.08	-.08	-.16	-.12	.12	.13	.13	.12	.39	.42
	(.11)	(.20)	(.28)	(.30(	(.03)	(.09)	(.09)	(.07)	(.09)	(.11)	(.0005)	(.0005)
Df. Avoid.	-.14	-.10	.003	.01	-.08	-.08	.003	.02	.15	.15	.01	.05
	(.06)	(.16)	(.96)	(.86)	(.27)	(.31)	(.96)	(.74)	(.04)	(.04)	(.90)	(.46)
Df. Income	-.21	-.20	-.09	-.09	-.13	-.13	-.12	-.11	-.05	-.01	-.03	-.04
	(.01)	(.01)	(.20)	(.22)	(.07)	(.08)	(.11)	(.15)	(.54)	(.87)	(.73)	(.58)
Df. Alter.	-.01	-.01	.07	.07	.17	.16	.14	.13	.06	.07	.10	.13
	(.89)	(.94)	(.36)	(.35)	(.02)	(.03)	(.05)	(.07)	(.40)	(.38)	(.19)	(.08)
Df. Enjoy	-.02	.01	-.08	-.04	.09	.13	.06	.10	-.04	-.01	.11	.12
	(.83)	(.90)	(.27)	(.55)	(.21)	(.09)	(.40)	(.19)	(.59)	(.91)	(.13)	(.10)
Multiple r	.56	.51	.27	.22	.24	.22	.31	.36	.24	.30	.66	.70
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)

Significance levels are shown in parentheses.

TABLE 19g.--Multiple and partial correlations between ABS-DF and contact variables for males.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Df. Amt.	.12	.11	.10	.10	.06	.07	.14	.14	.21	.20	.49	.51
	(.33)	(.36)	(.43)	(.42)	(.62)	(.56)	(.23)	(.25)	(.08)	(.09)	(.0005)	(.0005)
Df. Avoid.	-.38	-.39	-.25	-.26	-.03	-.04	-.19	-.17	-.17	-.16	-.20	-.21
	(.001)	(.001)	(.04)	(.04)	(.83)	(.74)	(.11)	(.15)	(.17)	(.19)	(.10)	(.09)
Df. Income	-.12	-.09	.06	.08	.06	.02	-.06	-.06	-.02	-.05	.05	.02
	(.32)	(.47)	(.61)	(.53)	(.63)	(.84)	(.65)	(.61)	(.89)	(.67)	(.69)	(.87)
Df. Alter.	-.15	-.13	-.12	-.13	-.06	-.03	.02	.03	-.01	.05	.09	.08
	(.21)	(.30)	(.32)	(.29)	(.62)	(.79)	(.85)	(.81)	(.92)	(.68)	(.47)	(.50)
Df. Enjoy	.10	.09	.22	.20	.04	.05	.25	.24	-.07	-.01	-.001	.05
	(.39)	(.44)	(.07)	(.10)	(.76)	(.70)	(.04)	(.04)	(.57)	(.93)	(.99)	(.69)
Multiple r	.43	.42	.36	.36	.14	.13	.36	.35	.28	.27	.60	.62
	(.005)	(.005)	(.005)	(.005)	(>.05)	(>.05)	(.005)	(.005)	(.025)	(.025)	(.005)	(.005)

Significance levels are shown in parentheses.

TABLE 19h.--Multiple and partial correlations between ABS-DF and contact variables for total sample.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Df. Amt.	-.08	-.06	-.04	-.04	-.04	-.03	.14	.14	.15	.14	.42	.44
	(.19)	(.33)	(.51)	(.56)	(.49)	(.68)	(.03)	(.02)	(.02)	(.02)	(.0005)	(.0005)
Df. Avoid.	-.20	-.18	-.07	-.06	-.06	-.06	-.06	-.04	.07	.07	-.04	-.01
	(.002)	(.004)	(.27)	(.32)	(.37)	(.36)	(.34)	(.54)	(.23)	(.24)	(.54)	(.85)
Df. Income	-.17	-.16	-.02	-.01	-.02	-.04	-.06	-.05	-.01	.002	-.004	-.01
	(.01)	(.01)	(.75)	(.83)	(.71)	(.55)	(.35)	(.39)	(.82)	(.92)	(.90)	(.83)
Df. Alter.	-.07	-.07	-.02	-.02	.05	.06	.09	.09	.03	.05	.09	.10
	(.24)	(.33)	(.75)	(.75)	(.44)	(.31)	(.16)	(.17)	(.63)	(.39)	(.15)	(.09)
Df. Enjoy	.01	.03	-.02	.0002	.03	.07	.10	.12	-.05	-.01	.10	.11
	(.80)	(.62)	(.71)	(.95)	(.63)	(.29)	(.12)	(.05)	(.47)	(.83)	(.12)	(.07)
Multiple r	.51	.45	.16	.12	.09	.11	.31	.34	.20	.26	.64	.68
	(.01)	(.005)	(.01)	(>.05)	(>.05)	(>.05)	(.01)	(.005)	(.01)	(.025)	(.01)	(.005)

Significance levels are shown in parentheses.

ABS-DF personal hypothetical behavior, personal feeling, and personal action levels and frequency of contact with the deaf. The "avoidance variable" rendered one negative but significant partial correlation at the societal stereotype level. No significant correlation was obtained for the enjoyment variable at any level nor was any significant correlation obtained for the "alternative rewarding opportunities" variable at any level. The variable of income derived with the deaf resulted in one negative significant correlation at the societal stereotype level; it is interesting to note that all correlations were negative for this variable except the one significant one indicated.

The multiple correlations for the total group between contact with the deaf and total ABS-DF attitude responses indicated all positive correlations, with significant correlations at the societal stereotype, societal norm, personal hypothetical behavior, personal feelings, and personal action levels.

An unexpected finding, and one that parallels the findings of studies with the mentally retarded, was the negative correlation between the amount of monetary reward received for working with the deaf and the ABS-DF attitude levels (Tables 19a, 19e, 19f, 19g, 19h), though not all correlations were significant.

Multiple correlations for the TDF group (Table 19a) between contact with the deaf and total ABS-DF attitude

responses shows the comparison to be positive and at the .025 level of significance for levels 1 through 6. However, when TDF partial correlations were considered, frequency of contact was not significant at any level; the avoidance factor was negatively significant at the societal stereotype level; the alternative variable was positively significant at levels 3 and 4 (personal moral evaluation and personal hypothetical levels); enjoyment of experience factor was positively significant at level 2 (societal norm). The predominance of positive significant correlations is in support of the hypothesis.

The multiple correlation between contact and the ABS-DF for the RST group (Table 19b) resulted in a significant positive correlation at the societal normative level, a significant positive correlation at the personal moral evaluation level and a significant positive correlation at the personal action level. Partial correlations between individual predictor contact variables and attitude levels revealed one significant relationship for the RST group. This was at the personal action level for the variable "frequency of contact." The correlation was significantly positive. Jordan's work (1968, 1969) predicted and confirmed the importance of other contact variables besides "amount" of contact in attitude formation; the data of the RST partial correlations do not replicate.

Multiple correlations for the manager-executive group (Table 19d) yielded a significant positive correlation at each level. Partial and multiple correlations yielded significant positive correlations at level 5 (personal feeling) and level 6 (personal action) for amount of contact; significant negative correlations at level 1 (societal stereotype) for the "avoidance" factor as well as a weak negative correlation at level 6 (personal action); and a significant positive correlation at level 2 (societal normative) for amount and enjoyment factor.

Multiple correlations for the MND group (Table 19e) yielded positive significant correlations between all independent contact variables and each of the ABS-DF levels. The partial correlation for the avoidance variable was positive and significant at the personal action level; for the "income" variable, it was significantly positive at level 6; for "alternate rewarding opportunities" there was a negative correlation at level 6. Based on the significant positive multiple correlations between combined contact variables and the ABS-DF scale levels, H-4 was supported for the MND group.

The multiple correlations for females (of total sample) (Table 19f) yielded significant positive correlations at the .01 level. Partial correlations between amount of contact and the personal action level was significantly positive at the .0005 level. Partial correlations

between the avoidance variable and societal stereotype level was negative but weak and at the personal feeling level a positive significant correlation was obtained. Partial correlations between income and societal stereotype (level 1) yielded a negative but significant correlation, yielded for level 3 a negative correlation, and yielded for level 4 a negative correlation (but weak). Partial correlations between alternate rewarding opportunities and levels 3 and 4 resulted in positive significant correlations; the same was true for level 6 though the resulting correlation was weak. Hypothesis 4 was supported for females.

Multiple correlations for the male group of the total sample between contact with the deaf and total ABS-DF attitude responses (Table 19g) showed positive correlations at all action levels except level 3 (personal moral evaluation), which was positive but not significant. Partial correlation coefficients for the contact variable yielded a significant positive correlation between frequency of contact and the personal feeling level; and yielded a positive significant correlation between the frequency of contact variable and personal action level. Partial correlation coefficients between the avoidance factor and societal stereotype (level 1) were negative and significant, correlation between this factor and societal norm (level 2) also yielded a negative significant correlation. All levels for

this factor were negative but significant at the first two levels. Partial correlation coefficients between the "enjoyment" variable and societal norm indicated a positive significant correlation; the same was true at level 4 (personal hypothetical behavior). For the male group it can be said H-4 was partially supported.

Multiple correlations for the total sample (Table 19h) between contact with the deaf and total ABS-DF attitude responses showed significant positive responses at all levels except level 3 (personal moral evaluation). Partial correlations between frequency of contact and level 4 (personal hypothetical behavior) was positive and significant; for level 5 (personal feeling) it was positive and significant and for level 6 (personal action) positive and significant. Partial correlations between the avoidance factor and all levels were negative throughout, but significant at the societal stereotype level. Partial correlations between amount of income and all levels were predominantly negative but significant only at level 1 (societal stereotype). Partial correlations between alternate opportunities and each level were not significant except for a weak positive correlation at level 6; for the enjoyment factor positive significant correlations were obtained at level 4 and level 6 (though weak). On the basis of the multiple correlations, hypothesis 4 was supported for the total sample.

Relating Attitudes and Religiosity

H-5.--Persons who score high on stated importance of religion will score low on positive attitudes toward the deaf.

Hypothesis 5 was tested by correlating the ABS-DF scale with responses to item 82 in the questionnaire section of the instrument, which asks the subject to rate the importance to him of his religion in his daily life. Table 20 contains the resulting correlations for the various sample groups and total sample ABS-DF and the religiosity variable.

Hypothesis 5 predicts a negative relationship between religious importance and the ABS-DF and it can be seen from Table 20 that only one such correlation appears which reaches the .05 level of significance: the -.32 correlation on level 5 for the mothers of the non-deaf. The other correlation in this table which reached significance of a positive nature was level 5 for manager-executives.

The lack of significant correlations except in two instances leads to the conclusion that this hypothesis was not supported.

H-6.--Persons who score high on stated adherence to religion will score low on positive attitudes toward the deaf.

Hypothesis 6 was tested by correlating the ABS-DF with the extent to which the subjects reported that they observed the rules and regulations of their religion, as

TABLE 20.--ABS-DF stated importance of religion correlations for samples.

Group	ABS-DF Scale Level Correlations					
	1	2	3	4	5	6
Teachers of the Deaf (51)	.06 (.68)	.20 (.15)	.01 (.93)	-.03 (.86)	.10 (.49)	.09 (.53)
Regular School Teachers (58)	.14 (.30)	.04 (.76)	-.01 (.94)	-.01 (.96)	.25 (.06)	-.07 (.61)
Mothers of the Deaf (50)	.11 (.43)	.02 (.90)	-.001 (.98)	.21 (.13)	.13 (.35)	.10 (.48)
Manager-Executives (55)	-.09 (.51)	-.03 (.81)	.16 (.22)	.10 (.46)	.31 (.02)	.22 (.09)
Mothers of Non-Deaf (50)	-.06 (.69)	-.05 (.73)	.19 (.18)	-.01 (.97)	-.32 (.02)	.02 (.91)
Total Sample (264)	-.01 (.84)	.03 (.58)	.07 (.26)	.07 (.29)	.11 (.08)	.05 (.38)

Significance levels are shown in parentheses.

measured by item 92 in the questionnaire. Table 21 presents these correlations for the samples.

Table 21 reveals that only one correlation between the ABS-DF and the religious adherence variable reached significance and that this one is negative and occurred at level 1. In agreement with H-5 importance of religion, Hypothesis 6 is also not supported.

Relating Attitudes and Demographic Variables

H-7.--Amount of education will be positively related to favorable attitudes toward the deaf.

This hypothesis was tested by correlating the ABS-DF with responses to item 83 in the questionnaire which asked the subject to report his highest level of education. The resultant correlations for the five sample groups and the total sample are given in Table 22.

The correlation results suggest that education is related to favorable attitudes only at level 4 (personal hypothetical behavior) for the manager-executive group; however, for teachers of the deaf at level 5 (personal feelings) a significant negative correlation is noted. A significant negative correlation at level 6 (actual personal behavior) as well as a negative correlation at level 5 were also noted for the total sample.

On the basis of the findings it is concluded that hypothesis 7 is not supported; however, it must be pointed out that for the manager-executive group an interesting

TABLE 21.--ABS-DF stated adherence to religion correlations for samples.

Group	ABS-DF Scale Level Correlations					
	1	2	3	4	5	6
Teachers of the Deaf (51)	.08 (.56)	.17 (.23)	.13 (.36)	-.04 (.76)	.08 (.58)	.05 (.74)
Regular School Teachers (58)	-.001 (.99)	-.02 (.86)	.02 (.85)	.12 (.35)	.22 (.09)	.09 (.49)
Mothers of the Deaf (50)	-.07 (.61)	-.10 (.47)	-.09 (.51)	.15 (.29)	.15 (.29)	-.16 (.27)
Manager-Executives (55)	-.22 (.09)	-.21 (.12)	.04 (.75)	-.17 (.21)	-.06 (.67)	-.03 (.85)
Mothers of Non-Deaf (50)	-.29 (.04)	-.10 (.47)	.04 (.79)	-.01 (.93)	-.10 (.49)	.01 (.97)
Total Sample (264)	-.02 (.75)	-.01 (.82)	.04 (.57)	.06 (.37)	.02 (.72)	-.09 (.14)

Significance levels are shown in parentheses.

TABLE 22.--ABS-DF amount of education correlations for samples.

Group	ABS-DF Scale Level Correlations					
	1	2	3	4	5	6
Teachers of the Deaf (51)	-.01 (.94)	-.05 (.71)	-.19 (.18)	-.08 (.56)	-.37 (.01)	.-05 (.71)
Regular School Teachers (58)	-.16 (.23)	-.06 (.66)	-.04 (.74)	.12 (.38)	.11 (.39)	.12 (.37)
Mothers of the Deaf (50)	-.20 (.15)	-.24 (.09)	.11 (.43)	.17 (.23)	-.08 (.59)	.15 (.29)
Manager-Executives (55)	.09 (.53)	.21 (.13)	.24 (.07)	.29 (.03)	-.07 (.62)	.21 (.12)
Mothers of Non-Deaf (51)	-.17 (.24)	.07 (.63)	-.11 (.43)	-.07 (.61)	.23 (.10)	.14 (.32)
Total Sample (264)	-.03 (.59)	.07 (.24)	.07 (.25)	.08 (.22)	-.11 (.06)	-.15 (.01)

Significance levels are shown in parentheses.

and somewhat positive direction appears in contrast to other levels.

It should be noted that for the TDF group all correlations were negative though significant only at level 5. Why there should be a negative direction concerning the education variable for the TDF group raises some questions and this is commented on in Chapter VI.

H-8.--Age will be positively related to favorable attitudes toward the deaf.

Hypothesis 8 was tested by correlating the ABS-DF with the respondents' ages as determined by item 81 in the questionnaire section of the instrument. These correlations appear in Table 23 for the various sample groups.

The only significant correlation appeared at level 4 (personal hypothetical behavior) for mothers of the deaf and this one is negative. The same is true for the total sample. Why increasing age is related to negative attitudes toward the deaf at the personal hypothetical level for mothers of deaf children is difficult to explain. It can however be explained by the fact that with increasing age, problems of job placement, achievement, etc. are of increasing concern to mothers of deaf children.

The one significant positive correlation was noted for teachers of the deaf at level 6 (actual personal behavior); for this group we find support for the hypothesis. For all other groups we found no support. It can thus be concluded that the hypothesis is selectively supported for

TABLE 23.--ABS-DF age correlations for samples.

Group	ABS-DF Scale Level Correlations					
	1	2	3	4	5	6
Teachers of the Deaf (51)	.22 (.12)	.11 (.45)	.03 (.85)	-.12 (.41)	-.07 (.60)	.26 (.06)
Regular School Teachers (58)	-.04 (.78)	.14 (.30)	-.01 (.92)	-.19 (.15)	.16 (.23)	.21 (.10)
Mothers of the Deaf (50)	-.10 (.50)	.03 (.84)	-.01 (.97)	-.27 (.05)	-.09 (.52)	-.16 (.25)
Manager-Executives (55)	.11 (.41)	.14 (.30)	.04 (.75)	.03 (.84)	.17 (.20)	.13 (.33)
Mothers of Non-Deaf (51)	.01 (.93)	-.02 (.87)	-.03 (.82)	.02 (.87)	-.20 (.16)	-.15 (.30)
Total Sample (264)	-.11 (.09)	.07 (.29)	-.10 (.12)	-.12 (.05)	-.02 (.76)	.02 (.80)

Significance levels shown in parentheses.

the teachers of the deaf group but was not supported for all other groups.

H-9.--Women will score higher on positive attitudes toward the deaf than will men.

The analysis provided means and standard deviations according to sex only for the total sample; thus, it was not possible to evaluate any ABS-DF differences according to sex within the individual sample groups. An F test was calculated[1] between total sample male and female means on each of the six levels of the ABS-DF, and these results appear in Tables 27 and 28.

Table 28 indicates that although there were small male-female differences on levels 1 through 6 predominantly favoring the male group, none of the differences was significant. Table 27 for content scores only, indicated the same small differences favoring the male group for levels 3 through 6. For levels 1 and 2, the female group was favored. For all levels shown, except levels 3 and 4 involving intensity, the differences were not significant.

Hypothesis 9 is clearly not supported by the data.

Relating Attitudes and Change Orientation

H-10.--Persons who score high on change orientation will score high on positive attitudes toward the deaf.

Hypothesis 10 was tested by a multiple correlation program which produced a correlation between responses to

---

[1]The F is equivalent to a T test.

the six change orientation questions described in Chapter III, and each of the six levels for each sample group as well as the total sample. In addition, this program produced a partial correlation between each change orientation variable and the various ABS-DF levels, with the remaining change orientation variables "partialled out" or held constant. The change orientation questions dealt with self change (item 84 in the questionnaire), child rearing (item 85), birth control (item 86), automation (item 87), political leadership (item 88), and rule adherence (item 93). The results of the multiple regression analysis are presented in Tables 24a through 24h.

Examining the data in the Table 24 series, a random pattern of significant correlations is quite apparent. The results are somewhat in contrast to those of the Harrelson study in respect to magnitude and significance as well as direction.

For teachers of the deaf, Table 24a, the multiple correlations between the change orientation variables and the ABS-DF were all significant at each level. Partial correlations between individual predictor variables and attitude levels revealed significant positive correlations for self change at the societal stereotype level; a significant negative correlation for the variable in child rearing at the personal action level; a significant negative correlation for the birth control variable at the

TABLE 24a.--Multiple and partial correlations between ABS-DF and change orientation variables for teachers of the deaf.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Self Change	.33	.35	.10	.09	-.09	-.07	-.09	-.09	-.21	-.15	-.02	.01
	(.03)	(.02)	(.51)	(.56)	(.53)	(.63)	(.55)	(.57)	(.15)	(.32)	(.90)	(.96)
Child Rear.	-.17	-.14	.11	.11	-.003	-.03	.01	.04	.08	.10	-.32	-.33
	(.25)	(.36)	(.47)	(.46)	(.98)	(.82)	(.94)	(.79)	(.61)	(.50)	(.03)	(.02)
Birth Cont.	-.07	-.13	.01	.01	-.01	.02	-.18	-.21	-.25	-.24	.02	.07
	(.62)	(.39)	(.95)	(.96)	(.93)	(.90)	(.22)	(.17)	(.09)	(.10)	(.90)	(.65)
Automation	.08	.17	.19	.23	.29	.29	.06	.07	.06	-.03	.32	.32
	(.58)	(.27)	(.20)	(.12)	(.06)	(.05)	(.69)	(.67)	(.69)	(.84)	(.03)	(.03)
Pol. Lead.	.29	.26	.12	.12	.09	.08	.26	.27	-.12	-.12	.10	.11
	(.05)	(.09)	(.42)	(.42)	(.56)	(.62)	(.08)	(.07)	(.42)	(.44)	(.53)	(.46)
Rule Adher.	.00036	.03	.08	.08	-.28	-.26	.39	.39	.14	.19	.26	.29
	(1.0)	(.83)	(.62)	(.62)	(.06)	(.08)	(.01)	(.01)	(.36)	(.19)	(.08)	(.05)
Multiple r	.44	.46	.25	.37	.43	.42	.50	.51	.34	.34	.44	.47
	(.005)	(.005)	(.01)	(.005)	(.005)	(.005)	(.005)	(.005)	(.01)	(.01)	(.005)	(.005)

Significance levels are shown in parentheses.

TABLE 24b.--Multiple and partial correlations between ABS-DF and change orientation variables for regular school teachers.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Self Change	.18	.27	.19	.22	.39	.37	.35	.37	.09	.17	.18	.21
	(.19)	(.05)	(.18)	(.12)	(.004)	(.01)	(.01)	(.01)	(.53)	(.21)	(.19)	(.13)
Child Rear.	.01	.03	.31	.33	.15	.10	.15	.08	-.16	-.16	.05	.07
	(.92)	(.86)	(.02)	(.01)	(.27)	(.49)	(.28)	(.56)	(.26)	(.26)	(.70)	(.64)
Birth Cont.	.14	.07	.00076	-.01	.13	.13	.12	.13	.001	-.02	-.06	-.04
	(.30)	(.63)	(1.0)	(.95)	(.34)	(.37)	(.39)	(.34)	(.99)	(.87)	(.64)	(.76)
Automation	-.02	-.02	-.14	-.17	-.02	-.003	-.01	.0009	-.001	.07	.03	.01
	(.91)	(.86)	(.30)	(.23)	(.90)	(.98)	(.93)	(1.0)	(.99)	(.62)	(.83)	(.93)
Pol. Lead.	.18	.12	.14	.10	.27	.20	.08	.04	.12	.10	.05	.05
	(.21)	(.38)	(.33)	(.49)	(.05)	(.16)	(.55)	(.77)	(.40)	(.47)	(.73)	(.75)
Rule Adher.	.13	.16	.18	.22	-.20	-.09	-.06	-.03	.12	.13	.09	.08
	(.36)	(.26)	(.21)	(.12)	(.16)	(.51)	(.65)	(.83)	(.39)	(.36)	(.53)	(.56)
Multiple r	.34	.37	.43	.47	.50	.44	.43	.43	.25	.30	.24	.27
	(.01)	(.005)	(.005)	(.005)	(.005)	(.005)	(.005)	(.005)	(.05)	(.025)	(.05)	(.05)

Significance levels are shown in parentheses.

TABLE 24c.--Multiple and partial correlations between ABS-DF and change orientation variables for mothers of the deaf.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Self Change	-.03	-.05	.002	.01	.18	.18	.10	.15	-.05	.01	-.07	-.07
	(.87)	(.76)	(.98)	(.93)	(.24)	(.25)	(.51)	(.33)	(.75)	(.74)	(.63)	(.66)
Child Rear.	-.001	-.03	.08	.04	-.12	-.09	-.03	-.08	-.12	-.03	.05	.01
	(.99)	(.85)	(.58)	(.81)	(.41)	(.55)	(.85)	(.62)	(.42)	(.86)	(.77)	(.95)
Birth Cont.	-.01	-.03	-.26	-.23	.05	.06	.11	.08	-.23	-.30	.34	.39
	(.93)	(.85)	(.09)	(.12)	(.75)	(.72)	(.46)	(.61)	(.13)	(.05)	(.02)	(.01)
Automation	.02	.12	.13	.18	-.05	-.01	.10	.14	-.20	-.19	.11	.13
	(.90)	(.44)	(.41)	(.25)	(.75)	(.94)	(.52)	(.35)	(.19)	(.22)	(.46)	(.40)
Pol. Lead.	.12	.08	.23	.22	-.04	-.14	-.09	-.14	-.03	-.01	-.02	-.06
	(.42)	(.59)	(.12)	(.15)	(.78)	(.37)	(.55)	(.36)	(.82)	(.94)	(.90)	(.68)
Rule Adher.	.01	.04	.08	.10	-.14	-.09	.13	.03	.26	.25	.27	.24
	(.96)	(.80)	(.62)	(.50)	(.37)	(.58)	(.40)	(.83)	(.09)	(.10)	(.07)	(.12)
Multiple r	.13	.15	.34	.32	.26	.26	.27	.29	.44	.46	.46	.49
	(>.05)	(>.05)	(.01)	(.025)	(.05)	(.05)	(.05)	(.025)	(.005)	(.005)	(.005)	(.005)

Significance levels are shown in parentheses.

TABLE 24d.--Multiple and partial correlations between ABS-DF and change orientation variables for managers-executives.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Self Change	-.04	-.07	.03	.001	-.02	-.02	.11	.06	.08	.03	-.04	-.02
	(.76)	(.61)	(.82)	(.99)	(.88)	(.90)	(.45)	(.70)	(.57)	(.82)	(.78)	(.87)
Child Rear.	.26	.35	-.01	.07	.23	.19	.10	.09	.11	.04	.16	.23
	(.07)	(.01)	(.45)	(.62)	(.11)	(.19)	(.50)	(.56)	(.45)	(.76)	(.26)	(.11)
Birth Cont.	-.004	.02	-.13	-.15	-.07	-.06	-.11	-.08	-.23	-.16	-.08	-.09
	(.98)	(.90)	(.36)	(.29)	(.61)	(.70)	(.47)	(.57)	(.12)	(.28)	(.59)	(.52)
Automation	-.11	-.14	-.08	-.12	.10	.08	-.17	-.15	-.16	-.19	-.12	-.16
	(.44)	(.32)	(.60)	(.43)	(.49)	(.59)	(.23)	(.28)	(.27)	(.18)	(.41)	(.27)
Pol. Lead.	-.11	-.13	-.22	-.23	-.0007	-.02	-.17	-.18	.08	.0008	-.02	.02
	(.45)	(.38)	(.13)	(.11)	(1.0)	(.91)	(.23)	(.20)	(.59)	(1.0)	(.91)	(.88)
Rule Adher.	-.16	-.17	.11	.12	.12	.10	.08	.08	.17	.23	.12	.12
	(.26)	(.25)	(.43)	(.42)	(.40)	(.51)	(.57)	(.58)	(.23)	(.11)	(.41)	(.39)
Multiple r	.38	.46	.29	.33	.32	.27	.30	.29	.33	.34	.25	.30
	(.005)	(.005)	(.025)	(.01)	(.01)	(.025)	(.025)	(.01)	(.01)	(.005)	(.05)	(.01)

Significance levels are shown in parentheses.

TABLE 24e.--Multiple and partial correlations between ABS-DF and change orientation variables for mothers of non-deaf.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Self Change	.10	.02	.14	.10	.21	.19	.30	.22	.22	.22	.06	.01
	(.52)	(.89)	(.37)	(.50)	(.17)	(.20)	(.04)	(.15)	(.13)	(.15)	(.69)	(.97)
Child Rear.	-.23	-.05	-.17	-.09	.24	.31	.25	.30	-.22	-.07	.02	.03
	(.13)	(.76)	(.26)	(.55)	(.11)	(.03)	(.10)	(.05)	(.15)	(.63)	(.89)	(.87)
Birth Cont.	-.17	-.14	-.13	-.12	-.02	-.04	-.07	-.05	-.17	-.06	-.08	-.08
	(.26)	(.34)	(.40)	(.42)	(.91)	(.79)	(.63)	(.74)	(.26)	(.70)	(.61)	(.61)
Automation	.02	.03	-.04	.01	.14	.20	.03	.11	-.30	-.21	.04	.10
	(.89)	(.86)	(.81)	(.96)	(.35)	(.18)	(.86)	(.46)	(.04)	(.16)	(.80)	(.52)
Pol. Lead.	-.13	-.05	-.03	-.01	-.02	-.02	-.01	.02	.24	.26	.16	.16
	(.41)	(.73)	(.83)	(.96)	(.90)	(.91)	(.96)	(.88)	(.11)	(.09)	(.28)	(.30)
Rule Adher.	.45	.37	.20	.17	.20	.23	.07	.09	.04	.02	-.03	-.001
	(.002)	(.01)	(.19)	(.26)	(.17)	(.13)	(.65)	(.56)	(.80)	(.91)	(.87)	(.99)
Multiple r	.49	.39	.28	.21	.42	.49	.40	.42	.48	.41	.20	.20
	(.005)	(.005)	(.05)	(>.05)	(.005)	(.005)	(.005)	(.005)	(.005)	(.005)	(>.05)	(>.05)

Significance levels are shown in parentheses.

TABLE 24f.--Multiple and partial correlations between ABS-DF and change orientation variables for females.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Self Change	.03	.04	.06	.06	.13	.14	.18	.18	.05	.13	.06	.05
	(.69)	(.56)	(.45)	(.39)	(.07)	(.06)	(.01)	(.01)	(.52)	(.10)	(.45)	(.48)
Child Rear.	-.13	-.08	.05	.06	.04	.06	.16	.15	-.06	.02	.01	.01
	(.08)	(.28)	(.54)	(.44)	(.57)	(.40)	(.03)	(.04)	(.38)	(.81)	(.90)	(.92)
Birth Cont.	-.01	-.04	-.05	-.05	.03	.04	.04	.04	-.14	-.15	-.01	.01
	(.87)	(.60)	(.49)	(.49)	(.69)	(.62)	(.61)	(.61)	(.06)	(.05)	(.91)	(.89)
Automation	.05	.08	.06	.09	.10	.12	.03	.05	-.11	-.10	.14	.16
	(.47)	(.26)	(.41)	(.24)	(.18)	(.12)	(.70)	(.51)	(.14)	(.15)	(.05)	(.03)
Pol. Lead.	.05	.03	.11	.11	.05	.01	.08	.06	.08	.09	.15	.14
	(.50)	(.65)	(.12)	(.15)	(.47)	(.86)	(.26)	(.43)	(.28)	(.24)	(.05)	(.06)
Rule Adher.	.02	.03	.09	.11	-.07	-.02	.08	.11	.13	.18	.14	.16
	(.83)	(.69)	(.20)	(.12)	(.34)	(.79)	(.27)	(.14)	(.07)	(.01)	(.05)	(.03)
Multiple r	.15	.13	.19	.22	.21	.22	.31	.31	.25	.29	.28	.29
	(.01)	(>.05)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)

Significance levels are shown in parentheses.

TABLE 24g.--Multiple and partial correlations between ABS-DF and change orientation variables for males.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Self Change	-.07	-.07	.06	.03	.08	.08	.19	.15	.01	.004	-.04	-.03
	(.60)	(.57)	(.65)	(.78)	(.53)	(.52)	(.12)	(.22)	(.93)	(.97)	(.72)	(.82)
Child Rear.	.26	.29	.09	.14	.20	.15	.09	.07	.02	-.04	.08	.14
	(.03)	(.02)	(.47)	(.24)	(.09)	(.21)	(.48)	(.56)	(.88)	(.73)	(.50)	(.27)
Birth Cont	.01	-.01	-.12	-.15	-.07	-.07	-.12	-.12	-.19	-.15	-.05	-.06
	(.96)	(.91)	(.31)	(.22)	(.59)	(.56)	(.32)	(.34)	(.12)	(.23)	(.66)	(.60)
Automation	-.11	-.12	-.12	-.14	.06	.05	-.16	-.14	-.06	-.10	-.10	-.13
	(.36)	(.31)	(.33)	(.24)	(.61)	(.66)	(.18)	(.25)	(.64)	(.44)	(.44)	(.27)
Pol. Lead.	-.11	-.14	-.25	-.27	.01	-.02	-.16	-.17	.10	.03	.02	.04
	(.36)	(.24)	(.04)	(.03)	(.91)	(.90)	(.20)	(.16)	(.42)	(.79)	(.88)	(.77)
Rule Adher.	-.11	-.09	.17	.20	.06	.05	.06	.06	.17	.18	.06	.06
	(.39)	(.47)	(.15)	(.11)	(.63)	(.69)	(.63)	(.63)	(.16)	(.14)	(.64)	(.60)
Multiple r	.35	.39	.37	.43	.29	.25	.32	.30	.29	.27	.16	.20
	(.005)	(.005)	(.005)	(.005)	(.01)	(.025)	(.005)	(.01)	(.01)	(.025)	(>.05)	(.05)

Significance levels are shown in parentheses.

TABLE 24h.--Multiple and partial correlations between ABS-DF and change orientation variables for total sample.

Independent Variables	Societal Stereotypic		Societal Norm		Personal Moral Evaluation		Personal Hypothetical Behavior		Personal Feeling		Personal Action	
	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r	Content r	Combined r
Self Change	.02	.02	.07	.06	.15	.14	.19	.18	.06	.10	.04	.04
	(.78)	(.69)	(.29)	(.30)	(.02)	(.02)	(.002)	(.004)	(.37)	(.11)	(.57)	(.56)
Child Rear.	-.01	.03	.10	.13	.12	.11	.18	.17	-.04	.01	.05	.06
	(.81)	(.60)	(.10)	(.04)	(.05)	(.06)	(.004)	(.01)	(.57)	(.88)	(.46)	(.34)
Birth Cont.	-.02	-.03	-.04	-.05	.0003	.01	.03	.04	-.16	-.13	.01	.03
	(.77)	(.59)	(.50)	(.45)	(.94)	(.86)	(.59)	(.57)	(.01)	(.03)	(.81)	(.69)
Automation	.05	.06	-.003	.01	.04	.06	-.06	-.04	-.13	-.14	.06	.06
	(.44)	(.37)	(.91)	(.84)	(.52)	(.34)	(.30)	(.49)	(.04)	(.02)	(.35)	(.35)
Pol. Lead.	-.02	-.04	-.01	-.02	.002	-.02	.002	-.01	.07	.08	.11	.10
	(.70)	(.48)	(.88)	(.76)	(.92)	(.74)	(.92)	(.81)	(.23)	(.22)	(.09)	(.11)
Rule Adher.	-.01	.004	.12	.14	-.05	-.02	.06	.08	.13	.17	.11	.12
	(.88)	(.90)	(.06)	(.03)	(.41)	(.78)	(.32)	(.18)	(.03)	(.01)	(.08)	(.06)
Multiple r	.06	.09	.17	.20	.21	.21	.27	.26	.25	.27	.19	.20
	(>.05)	(>.05)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)

Significance levels are shown in parentheses.

personal feeling level; two positive significant correlations for the variable on automation at the personal moral evaluation level and at the personal action level; for the variable of political leadership a positive significant correlation at the societal stereotype level; and for the variable on rule adherence a negative correlation at the personal moral evaluation level, a positive significant correlation at the personal hypothetical behavior level, and a positive correlation at the personal action level.

For regular school teachers, Table 24b, the multiple correlations between the ABS-DF and the change orientation variables were all significant at each level. Partial correlations between individual variables and attitude levels resulted in the following:

1. Significant positive correlations for the variable dealing with self change at the personal moral evaluation level and at the personal hypothetical behavior level.
2. A significant positive correlation for the child rearing variable at the societal normative level.
3. A significant positive correlation for the political leadership variable at the personal moral evaluation level.

The multiple correlations for the group of mothers of the deaf, Table 24c, revealed positive significant correlations for all levels except level 1--societal stereotype.

Partial correlations were significant (positive) at the personal action level for the variable of birth control and at the personal feeling level for the variable of rule adherence.

For the manager-executive group, Table 24d, the resulting multiple correlations for all levels were significant.

The multiple correlations obtained for the mothers of the non-deaf, Table 24e, were positive and significant for every level except for the personal action level.

Partial correlations were significant at level 4 (hypothetical behavior) for self change; level 3 (personal moral evaluation) for child rearing; a negative correlation at level 5 (personal feeling) for automation; a weak positive correlation at level 5 for political leadership; and significant positive correlations at level 1 (societal stereotype) for rule adherence.

The partial correlations for the total female group, Table 24f, revealed a significant positive correlation at the personal hypothetical level for the variable of self change and at the same level for the variable of child rearing; however, a significant negative correlation at the personal feeling level for birth control. A significant positive correlation at the personal action level for the variable of automation. A similar significant positive correlation was obtained at the personal action level for

political leadership while for the variable of rule adherence significant positive correlations at the personal feeling and personal action levels.

Multiple correlations for the total female group revealed significant positive correlation at all levels.

The multiple correlations for the male group, Table 24g, were significant and positive at all levels except the personal action level. Also only two partial correlations were significant; one was positive for the variable of child rearing at the societal stereotype level, the other was a negative significant correlation for the variable of political leadership at the societal norm level.

For the total sample group, Table 24h, the multiple correlations obtained were significant throughout except for the societal stereotype level.

Also, reference to the product-moment correlations on which the multiple correlations are based revealed that most of the latter are derived from both positive and negative product-moment correlations. It is not surprising, therefore, that nearly all of these multiple correlations reach the .05 level of significance. Hagood and Price (1952) point out however:

> The coefficient of multiple correlation does not have any direction since the concept of direction is not applicable to association between one variable and several others considered simultaneously. The coefficient of multiple correlation is often a combined measure of positive and negative relationships (p. 508).

Thus, while there is a weak relationship within the various samples and the total sample between the change orientation variables and the ABS-DF, in the sense that a significant amount of ABS-DF variance can be accounted for by the multiple correlation coefficients, the relationship is not a direct one as predicted by Hypothesis 10.

It is therefore concluded that the data in Tables 24a through 24h is partially supportive of Hypothesis 10.

Relating Attitudes to Opinions on Educational Aid and Planning

H-11.--Agreement with government aid to education will be positively related to favorable attitudes toward the deaf.

Hypothesis 11 was tested by correlating the ABS-DF with items 89 and 90 of the personal questionnaire which deals with opinions regarding increased local and federal government financial support of education respectively. These correlations are reported for the samples in Table 25.

Table 25 reveals that the aid to education variable bears the strongest relationship to ABS-DF attitudes in the teachers of the deaf group where 6 of the 12 scale level correlations reach significance. A number of other significant correlations are scattered throughout Table 25, but in none of the other groups does a pattern emerge as clearly as with the teachers of the deaf, where positive correlations are found on levels 1, 2, 4, and 6.

TABLE 25.--ABS-DF agreement with local and federal aid to education correlations[1] for samples.

Group	Variables	ABS-DF Scale Level Correlations					
		1	2	3	4	5	6
Teachers of the Deaf	Local Aid	.28	.34	.26	.56	-.14	.40
		(.04)	(.01)	(.07)	(.001)	(.31)	(.003)
	Federal Aid	.10	.31	-.02	.13	.24	.41
		(.48)	(.02)	(.87)	(.37)	(.09)	(.002)
Regular School Teachers	Local Aid	-.13	.05	.04	.07	.01	.04
		(.31)	(.74)	(.76)	(.60)	(.97)	(.77)
	Federal Aid	.01	.34	.14	.16	.25	.24
		(.95)	(.01)	(.28)	(.21)	(.05)	(.06)
Mothers of the Deaf	Local Aid	.26	.21	.19	.16	.03	.35
		(.06)	(.14)	(.17)	(.25)	(.84)	(.01)
	Federal Aid	.20	.16	.06	.26	.18	.27
		(.15)	(.25)	(.68)	(.07)	(.20)	(.05)
Managers-Executives	Local Aid	.26	.02	.21	.04	.13	.22
		(.05)	(.86)	(.12)	(.76)	(.33)	(.11)
	Federal Aid	.29	.14	.16	-.09	.07	.01
		(.04)	(.31)	(.27)	(.54)	(.62)	(.97)
Mothers of Non-Deaf	Local Aid	.16	.12	.04	.09	.22	.13
		(.26)	(.40)	(.76)	(.53)	(.12)	(.37)
	Federal Aid	.29	.14	.16	-.09	.07	.01
		(.04)	(.31)	(.27)	(.54)	(.62)	(.97)
Total Sample	Local Aid	.14	.15	.13	.10	.02	.09
		(.02)	(.02)	(.04)	(.12)	(.79)	(.15)
	Federal Aid	.13	.20	.11	.08	.16	.10
		(.03)	(.001)	(.09)	(.21)	(.01)	(.10)

[1]Significance levels are shown in parentheses.

Turning to the results for the total sample, it is noted that the direction of the correlation coefficients for those that are significant are positive. Judging from the results for the total sample, it would appear that the aid-to-education variables are related to ABS-DF attitudes at the stereotypic, societal interactive norm, personal moral evaluation, and personal feeling level. Though weak they are all positive for the total sample. The findings for the teachers of the deaf are positive and significant at levels 1, 2, 4, and 6. The correlations were much larger than for the total group. For the other groups the significant correlations were scattered but the pattern of direction was positive.

In summary, it can be said that the hypothesis is generally supported for the teachers of the deaf group and for the total sample. In the sense of direction, it can be said it is also generally supported.

H-12.--Agreement with centralized government planning of education will be positively related to favorable attitudes toward the deaf.

Hypothesis 12 was tested by correlating the ABS-DF with responses to item 91 of the personal questionnaire. This item measures the extent to which education should be planned by governmental agencies, on a continuum ranging from planning directed primarily by the church to planning directed primarily by the federal government. The resulting correlations are displayed for the samples in Table 26.

TABLE 26.--ABS-DF agreement with centralized planning of education correlations[1] for samples.

Group	ABS-DF Scale Level Correlations					
	1	2	3	4	5	6
Teachers of the Deaf (51)	.16 (.27)	.14 (.32)	-.07 (.62)	.05 (.74)	.17 (.22)	.18 (.22)
Regular School Teachers (58)	-.09 (.48)	.21 (.11)	.08 (.53)	.23 (.07)	.04 (.74)	.08 (.53)
Mothers of the Deaf (50)	.13 (.38)	.22 (.12)	.02 (.88)	-.08 (.58)	-.12 (.41)	.07 (.64)
Manager-Executives (55)	-.03 (.82)	-.16 (.25)	-.07 (.62)	-.01 (.92)	-.10 (.47)	.07 (.60)
Mothers of Non-Deaf (51)	-.10 (.46)	.19 (.19)	.002 (.99)	-.02 (.87)	-.06 (.68)	-.07 (.61)
Total Sample (264)	-.12 (.06)	.09 (.16)	.01 (.84)	.04 (.55)	.02 (.72)	.10 (.10)

[1]Significance levels are shown in parentheses.

No significant correlations were obtained for the individual sample groups nor for the total sample. On this basis the hypothesis is not supported.

Relating Attitudes and Group Membership

H-13.--The groups will assume the following order with respect to favorable attitudes toward the deaf: MDF>TDF>RST>MND>MAN.

The hypothesis was tested through a one way analysis of variance procedure for each of the samples on each of the ABS-DF scale levels, using means adjusted for sample size and sex differences. The multiple means test was also applied to the data, and each mean was tested against every other mean in a F test. Table 27 contains the results of this analysis. Table 28 contains similar results as obtained from ABS-DF content intensity scores combined.

It will be noted that the groups did not assume the hypothesized order on any level of the ABS-DF. On closer scrutiny it can be discerned that the only level which somewhat approximates the assumed order with the exception of one group, is level 1. An interesting order for levels 4, 5, and 6 takes form as well. Results indicate that the groups which are more involved with the deaf are at the end of the continuum denoting less favorable attitudes toward the deaf; whereas, those less involved with the deaf have more favorable attitudes.

TABLE 27.--Adjusted means, F tests, and significant levels for the variables of the study by group and sex--by ABS-DF content scores only.

Variable Type	Number	Name	TDF (1) Adj. M. (N=51)	RST (2) Adj. M. (N=58)	MDF (4) Adj. M. (N=50)	MAN (5) Adj. M. (N=55)	MND (8) Adj. M. N=50)
Attitude Content	1.	Stereotype	49.16	41.12	42.64	39.93	41.49
	2.	Normative	45.86	41.42	44.48	42.91	42.01
	3.	Moral Eval.	45.14*	44.07	44.15	48.18	44.74
	4.	Hypothetical	50.46	54.23	50.51	56.23	52.22
	5.	Feeling	36.61	41.47	38.75	41.61	40.41
	6.	Action	28.72	37.70	30.94	34.44	38.23
Attitude Intensity	7.	Stereotype	38.01	38.51	36.62	40.19	39.64
	8.	Normative	41.60	41.86	41.64	45.74	46.92
	9.	Moral Eval.	45.97	50.83	49.00	55.73	51.53
	10.	Hypothetical	49.37	53.81	52.27	57.20	54.60
	11.	Feeling	46.51	53.52	52.08	56.33	52.38
	12.	Action	25.29	44.60	35.53	41.60	45.27
V	13.	Efficacy--Cont.	23.75	24.33	24.09	23.23	23.38
	14.	Efficacy--Int.	27.82	28.77	29.88	30.80	29.28
K	15.	Df. Knowledge	8.40	10.12	10.39	10.51	10.29
Contact	16.	Df. Amount	1.35	4.28	2.06	3.90	4.34
	17.	Df. Avoid	3.46	3.25	3.75	3.23	3.50
	18.	Df. Income	-1.06	2.59	2.65	2.86	2.61
	19.	Df. Alter.	-0.76	2.59	2.66	2.72	2.46
	20.	Df. Enjoy	3.01	4.95	3.48	4.58	4.59
Demo.	21.	Age	3.54	3.56	3.47	2.01	3.36
	22.	Educ. Amount	3.52	3.51	5.30	4.35	4.56
	23.	Religion Impor.	3.94	4.15	4.30	4.02	4.22
	24.	Religion Adher.	3.85	3.92	4.04	4.06	4.20
Change Orientation	25.	Self Change	2.57	2.65	2.58	2.78	2.73
	26.	Child Rearing	2.78	3.12	2.99	3.12	2.91
	27.	Birth Control	3.35	3.44	3.38	3.51	3.27
	28.	Automation	3.30	3.35	3.34	3.31	3.48
	29.	Political Lead.	2.38	2.89	2.45	2.57	2.64
	30.	Rule Adher.	2.34	2.52	2.81	2.92	2.72
Educ.	31.	Local Aid	2.97	2.84	2.92	2.06	2.90
	32.	Federal Aid	2.54	2.61	2.79	2.51	2.77
	33.	Ed. Planning	2.93	3.05	3.18	3.27	3.02

Group			Male	Female	Sex	
F[b]	Sig. of F	Multiple Means Test[c]	Adj. M. (N=74)	Adj. M. (N=190)	F[b]	Sig. of F
20.27	<.0005	1>2,1>4,1>5,1>8	42.15	43.59	1.05	.31
3.41	.01	1>2,1>8,4>2	42.44	44.22	.91	.34
2.81	.03	1<5,2<5,4<5,5>8	45.57	44.88	.29	.60
5.52	<.0005	1>2,1<5,2>8,4<5,5>8	53.58	51.88	1.67	.19
2.22	.07	1<2,2>4	40.47	39.86	.17	.69
32.27	<.0005	1<2,1<4,1<5,1<8,2>4, 2>5,4<8,5<8	34.06	33.95	.006	.90
1.25	.29	4<8	39.02	39.16	.18	.67
4.31	.002	1<8,2<8,4<8	44.70	42.41	1.01	.32
5.30	<.0005	1<2,1<5,1<8,2<5,4<5	52.97	48.25	4.87	.03
5.76	<.0005	1<2,1<4,1<5,1<8,4<5	55.26	51.64	4.11	.04
5.99	<.0005	1<2,1<4,1<5,1<8,	53.57	50.76	1.58	.21
53.82	<.0005	1<2,1<4,1<5,1<8,2>4 4<5,4<8	39.69	37.23	1.36	.24
1.16	.33		23.46	24.05	.59	.45
2.92	.02	1<4,1<5,2<5	30.73	27.89	7.39	.007
9.67	<.0005	1<2,1<4,1<5,1<8	9.78	10.09	.37	.55
66.09	<.0005	1<2,1<4,1<5,1<8,2>4, 4<5,4<8	3.31	3.05	.70	.41
.61	.66		8.46	3.42	.01	.88
420.47	<.0005	1<2,1<4,1<5,1<8	2.12	1.74	6.44	.01
163.01	<.0005	1<2,1<4,1<5,1<8	2.15	.172	3.83	.05
18.97	<.0005	1<2,1<5,1<8,2>4,4<5 4<8	4.46	3.78	4.01	.04
9.22	<.0005	1>5,2>5,4>5,5<8	2.95	2.43	3.34	.07
84.00	<.0005	1<4,1<5,1<8,2<4,2<5, 2<8, 4>5,4>8	4.26	4.23	.03	.84
1.22	.30	1<4	4.00	4.25	1.12	.29
.97	.42		4.06	4.97	.12	.73
.54	.71		2.66	2.66	.001	.93
1.16	.33	1<2	3.05	2.93	.31	.59
.65	.63		3.41	3.37	.08	.77
.34	.85		3.57	3.15	3.60	.06
2.02	.09	1<2,2>4	2.72	2.45	1.02	.32
3.45	.009	1<4,1<5,1<8	2.89	2.43	4.64	.03
.29	.88		2.07	2.80	1.10	.30
.60	.66		2.54	2.75	.67	.42
1.62	.17	1<4	3.11	3.07	.04	.82

[a]Mean for this variable is original mean due to error in computer not printing mean.

[b]F based on adjusted means which accounts for differences in sample sizes and sex ratios within sample.

[c]P<.05.

TABLE 28.--Adjusted means, F tests, and significant levels for the variables of the study by group and sex--by ABS-DF content-intensity scores combined.

PART A

Variable Type--Number--Name		TDF (1) Adj. M (N=51)	RST (1) Adj. M. (N=58)	MDF (4) Adj. M. (N=50)	MAN (5) Adj. M. (N=55)	MND (8) Adj. M. (N=50)	Group F	Group Sig. of F	Group Multiple Means* Test
Attitude Cont.--Int.	1. Stereotype	131.26	105.14	107.88	102.98	106.82	16.55	<.0005	1>2,1>4,1>5,1>8
	2. Normative	117.58	103.54	113.60	111.37	107.44	2.57	.04	1>2,1<8,2<4
	3. Moral Eval.	120.57	116.86	114.94	134.29	118.86	3.39	.01	1<5,2<5,4<5,5>8
	4. Hypothetical	138.90	154.28	140.78	163.38	147.89	5.72	<.0005	1<2,1<5,1<8,2>4,4<5,5>8
	5. Feeling	100.03	115.26	105.55	118.15	111.05	3.56	.01	1<2,1<5,1<8,2>4
	6. Action	83.68	115.54	93.03	106.74	117.79	34.25	<.0005	1<2,1<4,1<5,1<8,2>4,4<5, 4<8
V	13. Efficacy 14. Efficacy combined	82.74	86.39	84.80	81.00	80.87	1.37	.25	

PART B

Variable Type--Number--Name		Male Adj. M. (N=74)	Female Adj. M. (N=190)	Sex F	Sex Sig. of F
Attitude Cont.--Int.	1. Stereotype	108.71	106.82	.69	.41
	2. Normative	108.52	112.89	.45	.52
	3. Moral Eval.	123.71	117.22	1.71	.19
	4. Hypothetical	152.72	145.37	1.98	.16
	5. Feeling	111.85	108.17	.40	.54
	6. Action	104.25	102.45	.14	.71
V	13. Efficacy 14. Efficacy combined	82.00	84.32	.35	.56

*P<.05.

For levels 1 and 2, the teachers of the deaf and mothers of the deaf attributed more positive attitudes to others. On levels 4, 5, and 6 mothers of the deaf and teachers of the deaf scored consistently low. Managers and regular school teachers scored high on levels 4 and 5; for level 6, mothers of non-deaf children and regular school teachers scored high.

In conclusion, the results indicate no support for the hypothesis.

Relating Attitudes and Multidimensionality

H-14.--The ABS-DF scale levels or attitude subuniverses will form a Guttman simplex for each of the sample groups.

Hypothesis 14 was tested by plotting the content and combined content-intensity scale level intercorrelation matrices for each sample and subjecting these matrices to Kaiser's (1962) simplex approximation test, as described in Chapter IV, which generates a goodness of fit value, i.e., Q^2, for the obtained matrices and then rearranges these matrices into the "best" simplex order for which a Q^2 value is also given. The matrices for the obtained and best ordered Q^2 values are shown in Table 29 for each of the samples.

Table 29 reveals that one negative correlation occurred in the matrix for the teachers of the deaf, one in the regular teacher matrix, six in the mothers of the deaf matrix, none in the manager-executive matrix, and none in the mothers of non-deaf matrix.

TABLE 29.--Simplex results for research groups on six levels of the ABS-DF.

Descriptive Term	TDF--Cont.						RST--Cont.							
	1	2	3	4	5	6	1	2	3	4	5	6	1	2
1. Stereotype	--			OQ^2 = .58			--			OQ^2 = .90			--	
2. Normative	.57*	--					.49*	--					.53*	--
3. Moral Eval.	.02	.12	--				.14	.31*	--				.20	.09
4. Hypothetical	.16	.32*	.14	--			.07	.31*	.74*	--			-.05	-.13
5. Feeling	.07	.22	-.06	.02	--		.23	.27*	.50*	.44*	--		.07	-.20
6. Action	.21	.29*	.01	.41*	.18	--	.01	.18	-.04	.17	.03	--	.24	-.07
1. Stereotype	--			BQ^2 = .84			--			BQ^2 = .93			--	
2. Normative	.14	--					.23	--					.53	--
3. Moral Eval.	.12	.32	--				.49	.27	--				.20	.09
4. Hypothetical	.02	.16	.51	--			.14	.50	.31	--			.07	.20
5. Feeling	.01	.41	.29	.21	--		.07	.44	.31	.74	--		.24	.07
6. Action	.06	.02	.22	.07	.18	--	.01	.03	.18	.04	.17	--	.05	.13

	TDF--Comb.						RST--Comb.							
	1	2	3	4	5	6	1	2	3	4	5	6	1	2
1. Stereotype	--			OQ^2 = .59			--			OQ^2 = .89			--	
2. Normative	.60*	--					.56*	--					.60*	--
3. Moral Eval.	.03	.15	--				.16	.30*	--				.15	.12
4. Hypothetical	.15	.32*	.14	--			.13	.27*	.71*	--			.02	.07
5. Feeling	.18	.21	.16	.09	--		.27	.32*	57*	.44*	--		.03	.08
6. Action	.26	.33*	.01	.46*	.21	--	.07	.19	.05	.22*	.13	--	.15	.11
1. Stereotype	--			BQ^2 = .89			--			BQ^2 = .91			--	
2. Normative	.16	--					.56	--					.60	--
3. Moral Eval.	.15	.21	--				.27	.32	--				.15	.12
4. Hypothetical	.03	.18	.60	--			.16	.30	.57	--			.15	.11
5. Feeling	.14	.09	.32	.15	--		.13	.27	.44	.71	--		.02	.07
6. Action	.01	.21	.33	.26	.46	--	.07	.19	.13	.05	.22	--	.03	.08

*Significant at .05 level.

MDF--Cont.				MND--Cont.						MAN--Cont.					
3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	OQ^2 = .79			--			OQ^2 = .87			--			OQ^2 = .89		
				.46*	--					.51*	--				
--				.16	.11	--				.12	.44*	.--			
.21	--			.02	.06	.38*	--			.23	.51*	.38*	.--		
-.32*	.06	--		.14	.14	.03	.34*	--		.17	.28*	.14	.26*	--	
-.08	.15	.24	--	.04	.10	.09	.26	.55*	--	.13	.14	.13	.30*	.34*	--
	BQ^2 = .83			--			BQ^2 = .87			--			BQ^2 = .89		
				.46	--					.51	--				
--				.16	.11	--				.12	.44	--			
.32	--			.02	.06	.38	--			.23	.51	.38	--		
.09	.24	--		.14	.14	.03	.34	--		.17	.28	.14	.26	--	
.21	.07	.15	--	.04	.10	.09	.26	.55	--	.13	.14	.13	.30	.34	--

MDF--Comb.				MND--Comb.						MAN--Comb.					
3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	OQ^2 = .86			--			OQ^2 = .89			--			OQ^2 = .88		
				.38*	--					.49*	--				
--				.03	.10	--				.14	.45*	--			
.33*	--			.01	.05	.50*	.--			.22	.53	.41	--		
.13	.23	--		.07	.22	.07	.30*	--		.10	.29*	.17	.34*	--	
.03	.29*	.21	--	.01	.12	.25	.28*	.57*	.--	.20	.21	.13	.34*	.32*	--
	BQ^2 = .87			--			BQ^2 = .90			--			BQ^2 = .88		
				.38	--					.49	--				
--				.03	.10	--				.14	.45	--			
.03	--			.07	.22	.07	--			.22	.53	.41	--		
.33	.29	--		.01	.12	.25	.57	--		.20	.21	.13	.34	--	
.13	.22	.23	--	.01	.05	.50	.30	.28	--	.10	.29	.17	.34	.32	--

Kaiser (1962) offers three possible solutions in dealing with negative correlation coefficients:

> It might be possible in some cases to reflect variables--as in centroid factoring--to get rid of non-positive correlations . . . remembering that the reflected variables are being measured in opposite directions . . .
>
> Offending variables might simply be thrown out of the battery . . .
>
> Perhaps the best answer for non-positive correlations is simply to ignore them--to treat such correlations as missing data--and fit only to the positive correlations (p. 161).

Following this suggestion, the negative correlations were ignored and treated instead as positive correlations for purposes of computer computation of $\underline{Q}^2$ values, while attempting at the same time to take this into account in evaluating the results. Accordingly, the $\underline{Q}^2$ values appearing in Table 29 are the $\underline{Q}^2$ values for these matrices with negative correlations treated as positive correlations.

One negative correlation coefficient appeared in the TDF matrix, one in the RST matrix, and none appeared in the MAN and MND matrices. Only one matrix remained which yielded six negative coefficients; this one was the MDF matrix. For this group there is some question as to the value of the obtained and ordered matrices. For the TDF, RST, MAN, and MND groups, the number of negative correlations appearing in the matrices is either negligible or non-existent; hence, more stock can be placed in the $\underline{Q}^2$ values. If Hamersma's (1969) criterion of a $\underline{Q}^2$ value of .70 or greater is accepted as evidence that a simplex has

indeed been approximated, then it may be concluded that a simplex has been approximated for all groups according to the BQ^2 criterion.

Hypothesis 14 predicted that a simplex would be obtained for each of the sample groups. Neither Guttman's (1959) Contiguity Hypothesis on which the simplex model is based nor Kaiser's (1962) simplex approximation test takes into account the occurrence of non-positive correlations. The negative correlations which it was noted followed no extensive pattern were ignored in computing $\underline{Q}^2$ values and reordering of matrices. For all groups, a simplex was considered approximated using the BQ^2 criterion, according to Hamersma's (1969) criterion of $\underline{Q}^2$ value greater than .70. Although a number of limitations of the simplex approximation test as applied to this data have been listed, it is currently the best and most objective measure available, and by its standard, a simplex using OQ^2 criterion was considered to have been obtained for four of the five sample groups. Therefore, it is concluded that Hypothesis 14 is supported.

CHAPTER VI

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

The primary aim of this study was to examine the relationship of certain variables to attitudes toward deafness and to compare the attitudes of designated groups toward deafness. More specifically the substantive aim was to investigate the attitudes held by five groups toward the deaf. These included teachers of the deaf, regular school teachers, mothers of deaf children, mothers of non-deaf children, and prospective employers (managers-executives). Another purpose was to assess the predictive validity of hypothesized determinants of attitudes toward the deaf: (a) demographic, (b) socio-psychological, (c) contactual, and (d) knowledge. The instrument used to measure attitudes toward the deaf was the Attitude Behavior Scale-Deafness (ABS-DF - Jordan (1968) and Poulos (1970), which measures six levels of a person's interaction with the deaf (see Appendix A.2).

Summary of Review of Research

A review of the literature indicated that studies dealing with attitudes toward the handicapped have been primarily in areas other than the deaf. In those cases

where a number of handicaps had been under investigation, the deaf and hearing impaired were included as one of a number of sub-groups being studied. None of these studies reviewed employed an attitude scale based on the structural facet theory of attitudes as proposed by Guttman. No study was found which had the deaf as the attitude object using the Guttman facet theory approach to study attitudes. The present research is the first such attempt.

Instrumentation

The ABS-DF instrument used in this study was constructed according to Guttman's facet theory, which specifies that an attitude universe can be substructured into components which are systematically related, according to the number of identical conceptual elements they hold in common. Facet design permits the construction of a scale by a semantic, logical, a priori technique and the prediction of the order structure resulting from empirical application.

Guttman defined attitude as "a delimited totality of behavior with respect to something" and proposed that three semantic facets, each containing two elements, could account for an eight permutation attitude universe. Only four permutations were semantically consistent, however, and these four permutations or attitude levels adequately accounted for the item content used in an earlier research effort. Guttman named these levels (a) Stereotype, (b)Norm,

(c) Hypothetical Interaction, and (d) Personal Interaction. Each of the three facets contained a weak and a strong element and the four levels showed a progression from a weak to a strong form of behavior with one additional strong element appearing on each level. Thus, no strong elements appeared on the Stereotype level and each succeeding level contained one more strong element than its predecessor until the Personal Interaction level contained all strong elements. Guttman's contiguity hypothesis stated that attitude item levels close to each other in the semantic scale of their definitions would also be closer statistically and the resulting matrix of attitude level correlations would assume a simplex ordering. If the four levels defined above were plotted from 1 to 4 from left to right and from top to bottom in a correlation matrix, a perfect simplex would exhibit descending absolute values of coefficients moving down the columns and ascending values moving from left to right in the rows.

Jordan accepted Guttman's three facets but expanded the paradigm to include two other facets to form a six level paradigm of attitude structure. Again, each facet contained a weak and a strong element and each level contained one more strong element than its predecessor. Jordan's six levels were (a) Societal Stereotype, (b) Societal Norm, (c) Personal Moral Evaluation, (d) Personal Hypothetical Action, (e) Personal Feelings, and (f) Personal

Action. These subject-object facets are termed joint[1] struction while additional facets accounting for specific item content are termed lateral struction. A six level attitude scale measuring attitudes toward the mentally retarded was constructed by Jordan: the ABS-MR--from a mapping sentence (Table 7) containing the joint and lateral struction facets so that each and every item corresponded to a combination of facet elements in the mapping sentence. The final scale contained a total of 20 items on each level and the content measure of each item was followed by an intensity measure.

A procedure for combining content and intensity scores into one score for each item was described. The procedure increases the range of scores for each item and was used in this study with the deaf as attitude object. This procedure was similar to that of the Harrelson study (1970) which resulted in enhancing reliability and clarifying relationships.

A questionnaire containing measures of the independent variables of the study was also described. Among the items in this questionnaire were measures of (a) demographic variables, (b) change orientation, (c) opinions on educational aid and planning, (d) contact with the deaf, (e) efficacy--a scale designed to measure attitudes toward mans' effectiveness in the face of his natural environment, and (f) knowledge about deafness--a scale also adapted from previous

---

[1]In Jordan's (1968) original work the terms conjoint and disjoint were used.

research projects. The minor alterations in Jordan's Attitude Behavior Scale were those involving the substitution of the words deaf and deafness to all statements in the original scale referring to the mentally retarded and mental retardation respectively.

The present research sampled five groups from within the State of Michigan. They were: (a) 51 teachers of the deaf, (b) 58 regular school teachers, (c) 50 mothers of deaf children, (d) 51 mothers of non-deaf children, and (e) 55 prospective employers--managers and executives. As mentioned in Chapter IV it was felt that the obtained samples were quite good, generally representative, and adequate for a study of this type.

A total of 14 major research hypotheses were formulated which were based on previous research in studies with attitude objects other than the deaf. These 14 hypotheses are listed below along with the results of the analysis.

The data obtained were analyzed by computer at Michigan State University. Product-moment, partial, and multiple correlation procedures were used to test the various hypotheses, as were analysis of variance procedures and a multiple means test. In addition, a simplex approximation test was used which produces a descriptive statistic ($\underline{Q}^2$) for obtained attitude level matrices and matrices reordered into a "best" simplex order, despite some obvious limitations since no better alternative procedure was available. The .05 level of significance was accepted

despite the danger of Type I errors because of the early stage of facet theory development in the study of attitudes.

Results

Kuder-Richardson type reliabilities were obtained for each of the sample groups on each of the ABS-DF levels for both content scores alone and combined content-intensity scores. The combined score reliabilities ranged from 50 to 90; the content-only reliabilities ranged from 54 to 92. The reliability estimates for the samples compared favorably with those of the standardization groups with the personal action level 6 reliabilities being lowest while the personal feelings level 5 reliabilities were highest. Two groups rendered consistently high reliabilities throughout; these two were regular school teachers and manager-executives. The overall reliability of the adapted version of Jordan's ABS-MR scale was considered adequate for the present research.

Discussion

In this section the results of the testing of each hypothesis are reviewed and findings are discussed.

Relating Attitudes and Efficacy

H-1.--Persons who score high in efficacy will score high in positive attitudes toward the deaf.

The Efficacy scale was designed to measure the subjects view of mans' degree of control or effectiveness in the face of his natural environment. Significant positive correlations were obtained for only two groups of the total sample:

(a) at level 4 (hypothetical behavior) for regular school teachers and (b) at level 4 and level 5 (personal feelings) for managers. The total sample indicated statistically significant and positive correlations at levels 1, 3, and 4 but a negative significant correlation at level 6 (actual personal behavior). The results for the two groups, regular school teachers and managers, were consistent with those of the total sample but the negative significant correlation for the total sample at level 6 is in contradiction to the other findings. In a hypothetical sense RST and Managers indicated a positive view of their effectiveness in their environment. The results for the total sample for these same levels and the societal stereotype level were in agreement, but the negative significant correlation obtained in level 6 (actual personal behavior) suggests in a practical sense a feeling of ineffectiveness. This negative direction is also somewhat suggested by the weak negative correlation at level 5 (personal feelings) for the total sample.

It can be said the hypothesis is partially supported though in a weak sense. It can also be stated that efficacy, as a predictor of attitudes toward the deaf, is not a clear indicator for as the level of interaction reaches the personal action level we see a reversal in direction resulting in a negative correlation whereas at the impersonal level (level 2) to the hypothetical behavior level positive correlations exist.

Relating Attitudes and Knowledge

H-2.--Persons who score high in knowledge about the deaf will score high in positive attitudes toward the deaf.

The results suggest that increasing knowledge about deafness may be a weak predictor of positive attitudes toward the deaf. The hypothesis was partially supported. Unlike a study on mental retardation wherein it was found that the reverse was true; that it was a predictor of negative attitudes toward the mentally retarded, in the present study it was a weak predictor of positive attitudes. The only negative correlations were at level 5 (personal feelings) for mothers of deaf and level 6 (personal action) for mothers of non-deaf. It was positive at level 4, personal hypothetical behavior, for regular school teachers and managers. These findings suggest that increased knowledge about deafness may prove valuable for regular school teachers and for managers as it may be conducive for a positive outlook in anticipation of future contacts with the deaf. This would be true for a regular school setting and for future employment possibilities. The negative correlations suggest a possible negative feeling on the part of mothers of deaf children and for mothers of non-deaf, negative attitudes at the personal action behavior level which may go along with the fear parents of normal children may have as they think of the consequences of having a deaf child.

With the increase in the placement of deaf children in day school programs, as mentioned earlier in Chapter I, increased knowledge about deafness would be of value for

regular school teachers. The same would be true for potential employers of the deaf.

Relating Attitudes and Contact

H-3.--The more frequent the contact with deaf persons the higher will be the intensity scores on the ABS-DF, regardless of the direction (positiveness or negativeness) of attitude.

It would be reasonable to assume that the more contact an individual has had with the deaf the more firmly his attitude would be entrenched and the more certain he would be of his responses to an attitude scale with the deaf as the attitude object. This turned out to be the case in the present research and H-3, which predicted a positive relationship between intensity of attitudes toward the deaf and amount of contact with this group, was strongly supported.

H-4.--High frequency of contact with deaf persons will be associated with favorable attitudes toward the deaf on each of the levels of the ABS-DF if high frequency is concurrent with (a) alternative rewarding opportunities, (b) ease of avoidance of the contact, and (c) enjoyment of the contact.

The multiple correlations between the ABS-DF and contact variables for teachers of the deaf resulted in significant correlations at all levels. For regular school teachers significant correlations were obtained at level 2 (societal norm), level 3 (personal moral evaluation), and level 6 (personal action). For managers significant correlations were noted at all levels. For mothers of non-deaf children similar results were obtained. For total females

and total males significant correlations were obtained at all levels except for males who did not show any significant correlation at level 3 (personal moral evaluation). Multiple correlations for the total group were significant at all levels except for level 3.

Though individual sub groups for partial correlations indicated scattered results; multiple correlations were indicative of support for this hypothesis.

An interesting development was noted in the scoring of the ABS-DF, especially in this section dealing with contact with the deaf. A number of mothers of deaf children answered items 67, 69, 94, and 95 as if they did not have deaf children. This might indicate:

1. that the instrument was not interpreted correctly by each.
2. that they "forgot" they had deaf children.
3. that they live with the handicap in their family and completely accept it and thus don't see it as such.
4. that they don't accept it and reject it as is noted by the response. They don't think of their child as one of the family.

The items in question are:

(67) My children have played with children like this.

(69) My children have attended school with children like this.

(94) Considering all of the times you have talked, worked, or in some other way had personal contact with deaf persons, about how many times has it been altogether?

(95) When you have been in contact with deaf persons how easy for you, in general, would it have been to have avoided being with these handicapped persons?

The point which is very difficult to explain is that for the six items preceding item 67, the first five have the responses listed as (1) no, (2) uncertain, or (3) yes--in that order. However, for the item immediately preceding item 67 the order of response choices is reversed; therefore it can not be explained as response set. These oddities can not be explained adequately but it remains for further research to determine the basis for some mothers of the deaf to respond to these statements as if they did not have deaf children.

Relating Attitudes and Religiosity

H-5 predicted a negative relationship between stated religious importance and the ABS-DF and H-6 predicted a negative relationship between religious stated adherence and the ABS-DF. In both instances the religion variables were not strong predictors of attitudes in the samples of this study. The hypotheses were not supported.

Similarly a predicted negative relationship between the religion variable and attitudes toward the physically handicapped did not emerge in Jordan's (1968) study. The fact that they were not predictors of attitudes in the Harrelson study (1970) for the mentally retarded and also did not materialize in this study with the deaf may suggest reevaluation of these variables as predictors of attitude.

Relating Attitudes and Demographic Variables

H-7.--This hypothesis, which predicted a positive relationship between favorable attitudes toward the deaf and amount of education was supported only in a limited manner for the manager group at the personal hypothetical level. For teachers of the deaf a significant but negative correlation existed at the personal feeling level and for the total sample significant and negative correlations at the personal feeling level and actual personal behavior level were obtained.

With all other correlations for teachers of the deaf being negative--though not significant; yet negative and significant at level 5, one must question the amount of education variable. If amount of education is negatively related to attitudes toward the deaf, it is suggested that the amount-of-education variable be refined to include finer gradations or actual years of education. It would be interesting to note whether there is a "turning point" from positive to negative or no reversal in attitudes toward the deaf. The question on amount of education needs expansion. As it now reads it does not include fine enough gradations as to amount of post graduate education. In the Harrelson (1970) study it was found that amount of education was positively related to favorable attitudes at the moral and hypothetical levels and negatively related at the stereotypic and normative levels. If question 83 could be

refined to include specific amount of education beyond the bachelor's degree, we can ascertain if post graduate study is an influencing factor. With certification requirements as they are today, the majority of teachers have college degrees. The question does not make any attempt to separate bachelor degree from master's degree holders.

However, the data presently indicates that education does not seem to be a predictor of positive attitudes toward the deaf and in fact, it seems to be a weak predictor of negative attitudes at the personal feeling and personal action behavior levels.

H-9.--Age will be positively related to favorable attitudes toward the deaf.

One would hope that with increased age there would be more understanding of the handicapped and a more meaningful and personal acceptance. However, in this study it was found that the only correlation which goes along with this expectation was for the teachers of the deaf at the personal action level, level 6.

For all other groups there was no additional support. One interesting result was the significant negative correlation at the personal hypothetical level for mothers of the deaf. In this case we have increasing age and negative attitudes toward the deaf. The only explanation would be that with increasing age we have a corresponding increase in age in deaf children. Older children present more pressing problems to their parents concerning eventual

job placement or achievement at the secondary school level. The uncertainty of the total situation may raise numerous questions which may negatively affect the attitudes of mothers.

H-9.--Women will score higher on positive attitudes toward the deaf than will men.

This hypothesis was not supported by the results. Though there were small male-female differences, none was significant. No apparent pattern was discernable. In Jordan's (1968) study of cross-cultural attitudes toward the physically disabled, women's attitudes toward the disabled were more positive than men's attitudes. However, Harrelson's (1970) study had also secured results which were not significant and consequently not in support of the hypothesis as it related to the mentally retarded.

Relating Attitudes and Change Orientation

H-10.--Persons who score high on change orientation will score high on positive attitudes toward the deaf.

The change orientation questions were inconsistent predictors of attitudes on the various ABS-DF levels and the data suggest that both the change orientation questions themselves and the ABS-DF are multidimensional. The result was an inconsistent mixture of positive and negative correlations which were impossible to interpret in any consistent fashion. A similar confusing array of positive and negative correlations appeared in Jordan's (1968) research

in which different attitude scales were employed. The problem also existed in Harrelson's(1970) study which used the ABS-MR. It may be that the problem is principally in the change orientation questions themselves.

Two solutions suggest themselves: (a) the change orientation questions should be revised so that they measure the same theoretical variable in a more consistent fashion, or (b) they should be treated independently in future research efforts, with each being related to the dependent variable in a straightforward correlational analysis.

All multiple correlations for all groups were predominantly significant. Yet, as the data are examined for the individual groups, one finds the partial correlations for the individual variables are scattered from group to group with no apparent pattern. The several negative partial correlations were consistent with the same mixture of negative and positive partial correlations of previous studies (Harrelson, 1970; Jordan, 1968).

Yet it should not be overlooked that there may be a strong possibility that the different questions in the array, referring to change orientation, may not be measuring the same pure theoretic variable--change orientation--on each ABS level.

The significant multiple correlations that appear for each group as well as the total sample are in contrast to

the scattered partial correlations that appeared in the results for each group. The partial correlations were selectively interesting; yet not forceful enough to concur in a parallel fashion with the resulting multiple correlations.

Thus while there was a relationship between the various samples and the total sample on the change orientation variables and the ABS-DF, in the sense that a significant amount of ABS-DF variance can be accounted for by the multiple correlation coefficients, the fact that the relationship was not straightforward suggests that the hypothesis was only partially supported.

Relating Attitudes to Opinions on Educational Aid and Planning

H-11.--Agreement with government aid to education will be positively related to favorable attitudes toward the deaf.

The aid to education variables obtained the strongest relationship to ABS-DF in the teacher of the deaf group. This may be due to the fact that this group more so than the others in the total sample were intimately more familiar with both education of the deaf and with problems of aid; in this instance these variables predict attitudes at the impersonal as well as personal levels. These variables, however, are not predictors of attitudes for the other groups of the study.

The second hypothesis in this section, dealing with centralized government planning of education (H-12), was not supported for any group.

Relating Attitudes and Group Membership

H-13.--The hypothesis that MDF>TDF>RST>MND>MAN was not supported.

The groups did not assume the hypothesized order on any level of the ABS-DF. On noting specific results, it was apparent that mothers of the deaf and teachers of the deaf attributed more favorable attitudes to others at both the stereotypic level and moral evaluative level. At the hypothetical level we found managers and regular school teachers as possessing more favorable attitudes than the other groups. The same held true for level 5 (personal feelings). At the personal action level we found that the mothers of the non-deaf, the group less involved with the deaf, scored high denoting more favorable attitudes; whereas, mothers of the deaf and teachers of the deaf scored low, denoting less favorable attitudes. Regular school teachers scored second highest at this level placing them near the top of the continuum. This is discussed further in the section on implications.

Relating Attitudes and Multidimensionality

H-14.--The ABS-DF scale levels or attitude subuniverses will form a Guttman simplex for each of the sample groups.

The matrices displayed in Table 29, arranged according to Jordan's (1968) six level theory, reveal the correlations between the six levels of the ABS-DF do form a Guttman

simplex for each group sampled. For one group (MDF), there is some question as to value of the obtained and ordered matrices.

The $\underline{Q}^2$ values obtained for all matrices lent support to the use of facet theory in scale construction; yet, one must not ignore the fact that there are a number of limitations to the simplex approximation test, but it is currently the best and most available measure. This test together with the "visual test" employed in earlier research by Morin (1970), Erb (1969), Hamersma (1969) and Jordan (1968), focused on whether or not the hypothesized attitude levels closer together correlated higher than those farther apart, according to the contiguity hypothesis.

Recommendations

Selectively, the results of this study pointed out several limitations of the instrument which should be considered in future studies.

1. The instructions to respondents for the questionnaire should be revised. The suggestions of replying to every item should apply to Sections I through VI inclusive; whereas the instruction to the questionnaire section (Part II) should be revised to allow for the response of "I do not know," in the Knowledge section. This would reduce the guessing factor.

2. The item on amount of education should be expanded and refined to result in responses designating more specific amount of post graduate college work in addition to those listed.
3. Though earlier researchers have suggested reducing the scale length, none of the sampled groups objected to the length of the instrument except when the number of respondents in a group numbered less than four. For large groups, and if planned for in advance, time was the only factor of concern. The length of the instrument was not an objectionable feature.

Implications

In-service programs for teachers, parent education programs, and public informational services can benefit from the results obtained in this study. These programs and services are concerned with attempts at behavioral changes toward acceptance of the deaf, and the development of positive attitudes. Especially should consideration be given to the selective findings dealing with the factor on knowledge about deafness. If the continued trend in growth of day school programs prevails, the knowledge factor will increase in importance. Future job placement of the deaf can be more successful if manager-executive groups are made more knowledgeable about the deaf. An improvement in

public information programs for the handicapped may be a means of attaining this goal. Parent education programs need expansion and should be extended beyond the preschool and early elementary years. Data obtained on the age factor also point out the need to extend knowledge or public information services to parents of secondary school age pupils.

REFERENCES

REFERENCES

Adorno, T. W.; Frenkel-Brunswik, E.; Levinson, D. J.; & Sanford, R. N. The authoritarian personality. New York: Harper & Row, 1950.

Allan, W. S. On hiring the handicapped: The heart of the problem. Journal of Rehabilitation, 1962, 28 (2), 19-20.

Anastasi, A. Psychological testing. 2nd ed. New York: Macmillan, 1961.

Badt, M. L. Attitudes of students toward exceptional children and special education. Exceptional Children, 1957, 23, 286-290, 336.

Barker, R. G., et al. Adjustment to physical handicap and illness: A survey of the social psychology and disability. New York: Social Science Research Council, 1953 rev., Bulletin 55.

Bastide, R., & van den Berghe, P. Stereotypes, norms, and interracial behavior in Sao Paulo, Brazil. American Sociological Review, 1957, 22, 689-694.

Baum, M. B. Some dynamic factors affecting family adjustment to the handicapped child. Exceptional Children, 1962, 28, 387-392.

Berreman, J. V. Some implications of research in the social psychology of physical disability. Exceptional Children, 1954, 20, 347-350.

Bogardus, E. L. Measuring social distance. Journal of Applied Sociology, 1925, 9, 299-308.

Buss, A. J., & Durkee, A. An inventory for assessing different kinds of hostility, Journal of Consulting Psychology, 1957, 22, 343-348.

Carr, L. B. Problems confronting parents of children with handicaps. Exceptional Children, 1959, 25, 251-255.

Chevigny, H., & Braverman, S. The adjustment of the blind. New Haven: Yale University Press, 1950.

Coughlin, E. W. Some parental attitudes toward handicapped children. The Child, 1941, 6, 41-45.

Cowen, Emory L.; Bobgrove, Philip H.; Rockway, Alan M.; & Stevenson, John. Development and evaluation of an attitudes to deafness scale. Journal of Personality and Social Psychology, 1967, 6, 183-191.

Cronbach, Lee J. Essentials of psychological testing. New York: Harper and Brothers, 1949, 368-385.

Cruickshank, W. M., & Medve, J. Social relationships of physically handicapped children. Journal of Exceptional Children, 1948, 14, 101-106.

DeCarlo, L. M., & Dolphin, J. E. Social adjustment and personality development of deaf children: A review of literature. Exceptional Children, 1952, 18, 111-118, 128.

Doctor, Powrie V., et al. Tabular summary--schools and classes for the deaf in the United States. American Annals of the Deaf, 1969, 114, 622, 624.

_____. Tabular statement of American schools for the deaf, October 31, 1958. American Annals of the Deaf, 1958, 104, 154.

Duijker, H. C. J. Comparative research in social science with special reference to attitude research. International Social Science Bulletin, 1955, 7, 555-566.

Edwards, Allen L., & Kenney, Kathryn C. A comparison of the Thurstone and Liekert techniques of attitude scale construction. Journal of Applied Psychology, 1946, 30, 72-83.

Edwards, A. L. Experimental design in psychological research. New York: Holt, Rinehart and Winston, 1966.

Elser, R. P. The social position of hearing handicapped children in the regular grades. Exceptional Children, 1959, 25, 305-309.

Foa, U. G. The contiguity principle in the structure of interpersonal relations. Human Relations, 1958, 11, 229-238.

Foa, U. G. A facet approach to the prediction of commonalities. Behavioral Science, 1963, 8, 220-226.

Force, D. G. Social status of physically handicapped children. Exceptional Children, 1956, 23, 104-107, 132.

Goldberg, M. Broadening literacy: The responsibility of the school. The Educationally Retarded and Disadvantaged. N. S. S. E. Yearbook, Part 1, 1967, 66, 356-361.

Greenburg, H. A. Problems of parents of handicapped children. Journal of Exceptional Children, 1950, 17, 1-7, 25, 26.

Guttman, L. A. Basis for scaling qualitative data. American Sociological Review, 1944, 9, 139-150.

_____. The Cornell technique for scale and intensity analysis. Educational and Psychological Measurement, 1947, 7, 247-250.

_____. The problem of attitude and opinion measurement. Measurement and Prediction. Edited by S. A. Stouffer. Princeton: Princeton University, 1950.

_____. A structural theory for intergroup beliefs and action. American Sociological Review, 1959, 24, 318-328.

_____. The structuring of sociological spaces. Technical Note No. 3, 1961, Israel Institute of Applied Social Research, Contract No. AF 61 (052) - 121, United States Air Force.

_____. Order analysis of correlation matrices. Handbook of multivariate experimental psychology. Edited by R. B. Cattell. Chicago: Rand McNally, 1966, 438-458.

Guttman, L., & Foa, U. G. Social contact and an intergroup attitude. Public Opinion Quarterly, 1951, Spring, 43-53.

Hagood, M. J., & Price, D. O. Statistics for sociologists. Rev. ed. New York: Holt, 1952.

Hamersma, R. J. Construction of an attitude behavior scale of Negroes and Whites toward each other using Guttman facet design and analysis. Unpublished doctoral dissertation, Michigan State University, 1969.

Haring, Norris G.; Stern, George C.; & Cruickshank, William M. Attitudes of educators toward exceptional children. Syracuse: Syracuse University Press, 1958, 8-9.

Harrelson, L. E. A Guttman facet analysis of attitudes toward the mentally retarded in the Federal Republic of Germany: Content, structure, and determinants. Unpublished doctoral dissertation, Michigan State University, 1970.

Hodgson, F. M. Special education--facts and attitudes. Exceptional Children. 1964, 30, 196-201.

Horowitz, L. S., & Rees, N. S. Attitudes and information about deafness. Volta Review, 1962, 64, 180-189.

Hoyt, C. J. Test reliability estimated by analysis of variance. Principles of educational and psychological measurement. Edited by W. Mehrens and R. Ebel. Chicago: Rand McNally, 1967, 108-115.

Johnson, G. Orville. A study of the social position of mentally handicapped children in the regular grades. American Journal of Mental Deficiency, 1950, 55, 60-89.

Jones, R. L., et al. The social distance of the exceptional: A study at the high school level. Exceptional Children, 1966, 32, 551-556.

Jordan, John E. Attitude behavior scale--M.R. (ABS-MR). East Lansing: Michigan State University, 1967. Available from author.

_____. Guttman facet design and development of a cross cultural attitude toward mentally retarded persons scale. East Lansing: Michigan State University, 1969, 1970. Available from author.

_____. Attitudes toward education and physically disabled persons in eleven nations. East Lansing: Latin America studies center, Michigan State University, 1968.

Jordan, J. E.; Vurdelja, D.; and Prazic, B. Guttman facet theory analysis of attitudes toward retardation of Yugoslav mothers of mentally retarded and non-retarded. 1969 (in press in Yugoslavia). Available from Jordan, East Lansing: Michigan State University.

Kaiser, H. F. Scaling a simplex. Psychometrika, 1962, 27, 155-162.

Kirk, S. A. Educating exceptional children. Boston: Houghton-Mifflin, 1962, 116-117.

Koening, F. G. Social consciousness in relation to the physically handicapped. Journal for Exceptional Children, 1949, 15, 144-150, 154.

Kramer, C. Y. Extension of multiple range tests to group means with unequal numbers of replications. Biometrics, 1956, 12, 307-310.

Kuder, G. F., & Richardson, M. W. The theory of the estimation of test reliability. Psychometrika, 1937, 2, 151-160.

Kvaraceus, William C. Acceptance, rejection, and exceptionality, Exceptional Children, 1956, 22, 328-331.

Likert, R. A technique for the measurement of attitudes. Archives of Psychology, 1932, 22, 5-43.

Lingoes, J. C. An IBM 7090 program for the Guttman Lingoes multidimensional scalogram analysis-I. Behavioral Science, 1966, 11, 76-78.

Maierle, John Paul. An application of Guttman facet analysis to attitude scale construction: A methodology study. Unpublished doctoral dissertation, Michigan State University, 1969, 16-19.

Magnuson, D. Test theory. Palo Alto: Addison-Wesley, 1966.

McNemar, Quinn. Opinion-attitude methodology. Psychological Bulletin, 1946, 43, 289-374.

Morin, K. N. Attitudes of Texas-Mexican Americans toward mental retardation: A Guttman facet analysis. Unpublished doctoral dissertation, Michigan State University, 1969.

Mukherjee, B. N. Derivations of likelihood-ratio tests for Guttman quasisimplex covariance structures. Psychometrika, 1966, 31, 97-123.

Murphy, Albert T.; Dickstein, Joan; & Dripps, Elaine. Acceptance, rejection and the hearing handicapped. The Volta Review, 1960, 62, 208-211.

Mussen, P. H., & Barker, R. G. Attitudes towards cripples. Journal of Abnormal Psychology, 1944, 39, 351-355.

Proctor, D. I. An investigation of the relationships between knowledge of exceptional children, kind and amount of experience, and attitudes toward their classroom integration. Unpublished doctoral dissertation, Michigan State University, 1967.

Rokeach, M. The open and closed mind. New York: Basic Books, 1961.

Ruble, W. L., & Rafter, M. E. Calculation of basic statistics when missing data is involved (The MD-Stat Routine). Stat. series description #6, Agricultural Experiment Station, Michigan State University, 1966.

Ruble, W. L.; Kiel, D. F.; & Rafter, M. E. Calculation of least squares (regression) problems on the L. S. routine. Stat. series description #7, Agricultural Experiment Station, Michigan State University, 1966 (a).

Ruble, W. L.; Kiel, D. F.; & Rafter, M. E. One way analysis of variance with unequal number of replications permitted (UNEQ1 routine). Stat. series description #13, Agricultural Experiment Station, Michigan State University, 1966 (b).

Shaw, M. E., & Wright, J. M. Scales for measurement of attitudes. New York: McGraw-Hill, 1967.

Shears, Loyda M., & Jensema, Carl J. Social acceptability of anomalous persons. Exceptional Children, 1969, 36, 91-96.

Siller, J., & Chipman, A. Attitudes of the nondisabled toward the physically disabled. Final report on vocational rehabilitation project RD 707, 1967.

Simmons, J. S. Social integration of preschool children having hearing problems. Sociology and Social Research, 1955, 40, 99-101.

Stern, George G. Measuring non-cognitive variables in research on teaching. Handbook of Research on Teaching. Edited by N. L. Gage. Chicago: Rand McNally and Company, 1963, 404.

Suchman, E. A. The intensity component in attitude and opinion research. Measurement and Prediction. Edited by S. A. Stouffer. Princeton: Princeton University Press, 1950.

Tenny, J. W. The minority status of the handicapped. Exceptional Children, 1953, 19, 260-264.

Thurstone, L. L. Attitudes can be measured. American Journal of Sociology, 1928, 33, 529-554.

Vurdelja, D. Attitudes of mothers of retarded and non-retarded in four nations: A Guttman facet analysis. Unpublished M. A. thesis, Michigan State University, 1970.

Ward, J. H., Jr. Multiple linear regression models. Computer Applications in the Behavioral Sciences. Edited by H. Borko. Englewood Cliffs: Prentice Hall, 1962.

Wiener, J. L., & O'Shea, H. E. Attitudes of university faculty, administrators, teachers, supervisors, and university students toward the gifted. Exceptional Children, 1963, 30, 163-167.

Winer, B. J. Structural principles in experimental design. New York: McGraw-Hill, 1962.

Wright, B. A. Physical disability--a psychological approach. New York: Harper & Bros., 1960.

Zinnes, J. L. Scaling. Annual Review of Psychology. Edited by P. J. Mussen and M. R. Rosenziveig. Palo Alto, Calif.: Annual Reviews, Inc., 1968, 20, 447-478.

APPENDICES

APPENDIX A.1

ATTITUDE BEHAVIOR SCALE - MR

ABS-MR

ATTITUDE BEHAVIOR SCALE--MR

DIRECTIONS

This booklet contains statments of how people feel about certain things. In this section you are asked to indicate for each of these statements how most other people believe that mentally retarded people compare to people who are not retarded. Here is a sample statment.

Sample 1.

1. Chance of being blue-eyed

   (1) less chance
   2. about the same
   3. more chance

If other people believe that mentally retarded people have less chance than most people to have blue eyes, you should circle the number 1 as shown above.

If other people believe the mentally retarded have more chance to have blue eyes, you should circle the number 3 as shown below.

1. Chance of being blue-eyed

   1. less chance
   2. about the same
   (3) more chance

After each statement there will also be a question asking you to state how certain or sure you were of your answer. Suppose you answered the sample question about "blue eyes" by marking about the same.

Next you should then indicate how sure you were of this answer. If you felt sure of this answer, you should circle the number 3 as shown below in Sample 2.

Sample 2.

1. Chance of being blue-eyed

   1. less chance
   (2) about the same
   3. more chance

2. How sure are you of this answer?

   1. not sure
   2. fairly sure
   (3) sure

by: John E. Jordan
College of Education
Michigan State University

ABS-I-MR

Directions: Section I

In the statements that follow you are to circle the number that indicates how other people compare mentally retarded persons to those who are not mentally retarded, and then to state how sure you felt about your answer. Usually people are sure of their answers to some questions, and not sure of their answers to other questions. It is important to answer all questions, even though you may have to guess at the answers to some of them.

Other people generally believe the following things about the mentally retarded as compared to those who are not retarded:

1. Energy and vitality ⟷ 2. How sure are you of this answer?

1. less energetic	1. not sure
2. about the same	2. fairly sure
3. more energetic	3. sure

3. Ability to do school work 4. How sure are you of this answer?

1. less ability	1. not sure
2. about the same	2. fairly sure
3. more ability	3. sure

5. Memory 6. How sure are you of this answer?

1. not as good	1. not sure
2. same	2. fairly sure
3. better	3. sure

7. Interested in unusual sex practices 8. How sure are you of this answer?

1. more interested	1. not sure
2. about the same	2. fairly sure
3. less interested	3. sure

9. Can maintain a good marriage 10. How sure are you of this answer?

1. less able	1. not sure
2. about the same	2. fairly sure
3. more able	3. sure

11. Will have too many children 12. How sure are you of this answer?

1. more than most	1. not sure
2. about the same	2. fairly sure
3. less than most	3. sure

ABS-I-MR

Other people generally believe the following things about the mentally retarded as compared to those who are not mentally retarded:

13. Faithful to spouse

1. less faithful
2. about the same
3. more faithful

14. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

15. Will take care of his children

1. less than most
2. about the same
3. better than most

16. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

17. Likely to obey the law

1. less likely
2. about the same
3. more likely

18. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

19. Does steady and dependable work

1. less likely
2. about the same
3. more likely

20. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

21. Works hard

1. not as much
2. about the same
3. more than most

22. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

23. Makes plans for the future

1. not as likely
2. about the same
3. more likely

24. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

25. Prefers to have fun now rather than to work for the future

1. more so than most people
2. about the same
3. less so than most people

26. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-I-MR

Other people generally believe the following things about the mentally retarded as compared to those who are not retarded:

27. Likely to be cruel to others

1. more likely
2. about the same
3. less likely

28. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

29. Mentally retarded are sexually

1. more loose than others
2. about the same
3. less loose than others

30. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

31. Amount of initiative

1. less than others
2. about the same
3. more than others

32. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

33. Financial self-support

1. less able than others
2. about the same
3. more able than others

34. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

35. Mentally retarded prefer

1. to be by themselves
2. to be only with normal people
3. to be with all people equally

36. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

37. Compared to others, education of the mentally retarded

1. is not very important
2. is of uncertain importance
3. is an important social goal

38. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

39. Strictness of rules for mentally retarded

1. must be more strict
2. about the same
3. need less strict rules

40. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-II-MR

Directions: Section II

This section contains statements of ways in which other people sometimes act toward people. You are asked to indicate for each of these statements what other people generally believe about interacting with the mentally retarded in such ways. You should then indicate how sure you feel about your answer.

Other people generally believe that mentally retarded persons ought:

41. To play on the school playground with other children who are not mentally retarded

    1. usually not approved
    2. undecided
    3. usually approved

42. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

43. To visit in the homes of other children who are not mentally retarded

    1. usually not approved
    2. usually undecided
    3. usually approved

44. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

45. To go on camping trips with other children who are not mentally retarded

    1. usually not approved
    2. undecided
    3. usually approved

46. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

47. To be provided with simple tasks since they can learn very little

    1. usually believed
    2. undecided
    3. not usually believed

48. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

49. To stay overnight at the homes of children who are not mentally retarded

    1. usually not approved
    2. undecided
    3. usually approved

50. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

ABS-II-MR

Other people generally believe that mentally retarded persons ought:

51. To go to parties with other children who are not mentally retarded

1. usually not approved
2. undecided
3. usually approved

52. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

53. To be hired for a job only if there are no qualified non-mentally retarded people seeking the job

1. usually approved
2. undecided
3. usually not approved

54. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

55. To live in the same neighborhood with people who are not mentally retarded

1. usually not approved
2. undecided
3. usually approved

56. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

57. To date a person who is not mentally retarded

1. usually not approved
2. undecided
3. usually approved

58. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

59. To go to the movies with someone who is not mentally retarded

1. usually not approved
2. undecided
3. usually approved

60. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

61. To marry a person who is not mentally retarded

1. usually not approved
2. undecided
3. usually approved

62. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

63. To be sterilized (males)

1. usually approved
2. undecided
3. usually not approved

64. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-II-MR

Other people generally believe that mentally retarded persons ought:

65. To be sterilized (females)

1. usually approved
2. not sure
3. usually not approved

66. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

67. To be desirable as friends

1. not usually approved
2. not sure
3. usually approved

68. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

69. To be regarded as having sex appeal

1. not usually so
2. not sure
3. usually so

70. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

71. To be regarded as dangerous

1. usually so regarded
2. not sure
3. notusually regarded so

72. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

73. To run machines that drill holes in objects

1. usually not approved
2. not sure
3. usually approved

74. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

75. To be trusted with money for personal expenses

1. not usually so
2. not sure
3. usually so

76. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

77. To work at jobs he can do even if he has almost no speech

1. not usually so
2. not sure
3. usually so

78. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

79. To be forced to totally provide for themselves

1. usual
2. not sure
3. not usual

80. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-III-MR

Directions: Section III

This section contains statments of the "right" or "moral" way of acting toward people. You are asked to indicate whether you yourself agree or disagree with each statement according to how you personally believe you ought to behave toward mentally retarded persons. You should then indicate how sure you feel about your answer.

In respect to people who are mentally retarded, do you believe that it is usually right or usually wrong:

81. To take a mentally retarded child on a camping trips with normal children

1. usually wrong
2. undecided
3. usually right

82. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

83. To permit a mentally retarded child to go to the movies with children who are not mentally retarded

1. usually wrong
2. undecided
3. usually right

84. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

85. To allow a mentally retarded child to visit overnight with a child who is not mentally retarded

1. usually wrong
2. undecided
3. usually right

86. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

87. To take a mentally retarded child to a party with children who are not mentally retarded

1. usually wrong
2. undecided
3. usually right

88. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

89. For the government to pay part of the cost of elementary education for mentally retarded children

1. usually wrong
2. undecided
3. usually right

90. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-III-MR

In respect to people who are mentally retarded, do you believe that it is usually right or usually wrong:

91. For the government to pay the full cost of elementary education for mentally retarded children

1. usually wrong
2. undecided
3. usually right

92. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

93. For the government to pay the full cost of a high school education for mentally retarded children

1. usually wrong
2. undecided
3. usually right

94. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

95. For the government to pay part of the medical costs related to the disability

1. usually wrong
2. undecided
3. usually right

96. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

97. For the government to pay all of the medical costs related to the disability

1. usually wrong
2. undecided
3. usually right

98. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

99. To be given money for food and clothing by the government

1. usually wrong
2. undecided
3. usually right

100. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

101. To mix freely with people who are not mentally retarded at parties

1. usually wrong
2. undecided
3. usually right

102. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-III-MR

In respect to people who are mentally retarded, do you believe that it is usually right or usually wrong:

103. To go on dates with someone who is not mentally retarded

1. usually wrong
2. undecided
3. usually right

104. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

105. To go to the movies with someone who is not mentally retarded

1. usually wrong
2. undecided
3. usually right

106. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

107. To marry someone who is not mentally retarded

1. usually wrong
2. undecided
3. usually right

108. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

109. To be a soldier in the army

1. usually wrong
2. undecided
3. usually right

110. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

111. To provide special laws for their protection

1. usually wrong
2. undecided
3. usually right

112. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

113. To provide special help to get around the city

1. usually wrong
2. not sure
3. usually right

114. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

115. To sterilize the mentally retarded

1. usually right
2. not sure
3. usually wrong

116. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-III-MR

In respect to people who are mentally retarded, do you believe that it is usually right or usually wrong:

117. To put all mentally retarded in separate classes, away from normal children

1. usually right
2. not sure
3. usually wrong

118. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

119. To reserve certain jobs for the mentally retarded

1. usually wrong
2. not sure
3. usually right

120. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-IV-MR

Directions: Section IV

This section contains statments of ways in which people sometimes act toward other people. You are asked to indicate for each of these statments whether you personally would act toward mentally retarded people according to the statment. You should then indicate how sure you feel about this answer.

In respect to a mentally retarded person, would you:

121. Share a seat on a train for a long trip

1. no
2. don't know
3. yes

122. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

123. Have such a person as a fellow worker

1. no
2. don't know
3. yes

124. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

125. Have such a person working for you

1. no
2. don't know
3. yes

126. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

127. Live in the next-door house or apartment

1. no
2. don't know
3. yes

128. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

129. Extend an invitation to a party at your house

1. no
2. don't know
3. yes

130. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

131. Accept a dinner invitation at his house

1. no
2. don't know
3. yes

132. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-IV-MR

In respect to a mentally retarded person, would you:

133. Go to the movies together

1. no
2. don't know
3. yes

134. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

135 Go together on a date

1. no
2. don't know
3. yes

136. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

137. Permit a son or daughter to date this person

1. no
2. don't know
3. yes

138. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

139. Permit a son or daughter to marry this person

1. no
2. don't know
3. yes

140. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

141. Feel sexually comfortable together

1. no
2. don't know
3. yes

142. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

143. Enjoy working with the mentally retarded

1. no
2. don't know
3. yes

144. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

145. Enjoy working with the mentally retarded as much as other handicapped

1. no
2. don't know
3. yes

146. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

147. Enjoy working with mentally retarded who also have emotional problems

1. no
2. don't know
3. yes

148. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-IV-MR

In respect to a mentally retarded person, would you:

149. Hire the mentally retarded if you were an employer

1. no
2. don't know
3. yes

150. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

151. Want the mentally retarded in your class if you were a teacher

1. no
2. don't know
3. yes

152. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

153. Require the mentally retarded to be sterilized if you were in control

1. yes
2. don't know
3. no

154. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

155. Separate the mentally retarded from the rest of society if you were in control

1. yes
2. don't know
3. no

156. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

157. Believe that the care of the mentally retarded is an evidence of national social development

1. no
2. don't know
3. yes

158. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

159. Provide, if you could, special classes for the mentally retarded in regular school

1. no
2. don't know
3. yes

160. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-V-MR

Directions: Section V

This section contains statements of actual feelings that people may hold toward the mentally retarded. You are asked to indicate how you feel toward people who are mentally retarded compared to people who are not mentally retarded. You should then indicate how sure you feel of your answer.

How do you actually feel toward persons who are mentally retarded compared to others who are not mentally retarded:

1. Disliking

   1. more
   2. about the same
   3. less

2. How sure are you of this answer?

   1. not sure
   2. fairly sure
   3. sure

3. Fearful

   1. more
   2. about the same
   3. less

4. How sure are you of this answer?

   1. not sure
   2. fairly sure
   3. sure

5. Horrified

   1. more
   2. about the same
   3. less

6. How sure are you of this answer?

   1. not sure
   2. fairly sure
   3. sure

7. Loathing

   1. more
   2. about the same
   3. less

8. How sure are you of this answer?

   1. not sure
   2. fairly sure
   3. sure

9. Dismay

   1. more
   2. about the same
   3. less

10. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

11. Hating

    1. more
    2. about the same
    3. less

12. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

13. Revulsion

    1. more
    2. about the same
    3. less

14. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

ABS-V-MR

How do you actually feel toward persons who are mentally retarded compared to others who are not mentally retarded:

15. Contemptful

1. more
2. about the same
3. less

16. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

17. Distaste

1. more
2. about the same
3. less

18. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

19. Sickened

1. more
2. about the same
3. less

20. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

21. Confused

1. more
2. about the same
3. less

22. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

23. Negative

1. more
2. about the same
3. less

24. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

25. At ease

1. less
2. about the same
3. more

26. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

27. Restless

1. more
2. about the same
3. less

28. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

29. Uncomfortable

1. more
2. about the same
3. less

30. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-V-MR

How do you actually feel toward persons who are mentally retarded compared to others who are not mentally retarded:

31. Relaxed

1. less
2. about the same
3. more

32. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

33. Tense

1. more
2. about the same
3. less

34. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

35. Bad

1. more
2. about the same
3. less

36. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

37. Calm

1. less
2. about the same
3. more

38. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

39. Happy

1. less
2. about the same
3. more

40. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-VI-MR

Directions: Section VI

This section contains statements of different kinds of actual experiences you have had with mentally retarded persons. If the statment applies to you, circle yes. If not, you should circle no.

Experiences or contacts with the mentally retarded:

41. Shared a seat on a bus, train, or plane
1. no
2. uncertain
3. yes

42. Has this experience been mostly pleasant or unpleasant?
1. no such experience
2. unpleasant
3. in between
4. pleasant

43. Eaten at the same table together in a restaurant
1. no
2. uncertain
3. yes

44. Has this experience been mostly pleasant or unpleasant?
1. no such experience
2. unpleasant
3. in between
4. pleasant

45. Lived in the same neighborhood
1. no
2. uncertain
3. yes

46. Has this experience been mostly pleasant or unpleasant?
1. no such experience
2. unpleasant
3. in between
4. pleasant

47. Worked in the same place
1. no
2. uncertain
3. yes

48. Has this experience been mostly pleasant or unpleasant?
1. no such experience
2. unpleasant
3. in between
4. pleasant

49. Had such a person as my boss or employer
1. no
2. uncertain
3. yes

50. Has this experience been mostly pleasant or unpleasant?
1. no such experience
2. unpleasant
3. in between
4. pleasant

51. Worked to help such people without being paid for it
1. no
2. uncertain
3. yes

52. Has this experience been mostly pleasant or unpleasant?
1. no such experience
2. unpleasant
3. in between
4. pleasant

53. Have acquaintance like this
1. no
2. uncertain
3. yes

54. Has this experience been mostly pleasant or unpleasant?
1. no such experience
2. unpleasant
3. in between

ABS-VI-MR

Experiences or contacts with the mentally retarded:

55. Have good friends like this
    1. no
    2. uncertain
    3. yes

56. Has this experience been mostly pleasant or unpleasant?
    1. no such experience
    2. unpleasant
    3. in between
    4. pleasant

57. Donated money, clothes, etc., for people like this
    1. no
    2. uncertain
    3. yes

58. Has this experience been mostly pleasant or unpleasant?
    1. no such experience
    2. unpleasant
    3. in between
    4. pleasant

59. Have a husband (or wife) like this
    1. no
    2. uncertain
    3. yes

60. Has this experience been mostly pleasant or unpleasant?
    1. no such experience
    2. unpleasant
    3. in between
    4. pleasant

61. I am like this, myself
    1. no
    2. uncertain
    3. yes

62. Has this experience been mostly pleasant or unpleasant?
    1. no such experience
    2. unpleasant
    3. in between
    4. pleasant

63. My best friend is like this
    1. no
    2. uncertain
    3. yes

64. Has this experience been mostly pleasant or unpleasant?
    1. no such experience
    2. unpleasant
    3. in between
    4. pleasant

65. Received pay for working with people like this
    1. yes
    2. no

66. Has this experience been mostly pleasant or unpleasant?
    1. no such experience
    2. unpleasant
    3. in between
    4. pleasant

67. My children have played with children like this
    1. no
    2. uncertain
    3. yes

68. Has this experience been mostly pleasant or unpleasant?
    1. no such experience
    2. unpleasant
    3. in between
    4. pleasant

ABS-VI-MR

Experiences or contacts with the mentally retarded:

69. My children have attended school with children like this

1. no
2. uncertain
3. yes

70. Has this experience been mostly pleasant or unpleasant?

1. no such experience
2. unpleasant
3. in between
4. pleasant

71. Voted for extra taxes for their education

1. no
2. not certain
3. yes

72. Has this experience been mostly pleasant or unpleasant?

1. no such experience
2. unpleasant
3. in between
4. pleasant

73. Worked to get jobs for them

1. no
2. not certain
3. yes

74. Has this experience been mostly pleasant or unpleasant?

1. no such experience
2. unpleasant
3. in between
4. pleasant

75. Have you sexually enjoyed such people

1. no
2. no answer
3. yes

76. Has this experience been mostly pleasant or unpleasant?

1. no such experience
2. unpleasant
3. in between
4. pleasant

77. Studied about such people

1. no
2. yes

78. Has this experience been mostly pleasant or unpleasant?

1. no such experience
2. unpleasant
3. in between
4. pleasant

79. Have worked as a teacher with such people

1. no
2. yes

80. has this experience been mostly pleasant or unpleasant?

1. no such experience
2. unpleasant
3. in between
4. pleasant

This part of the booklet deals with many things. For the purpose of this study, the answers of all persons are important.

Part of the questionnaire has to do with personal information about you. Since the questionnaire is completely anonymous or confidential, you may answer all of the questions freely without any concern about being identified. It is important to the study to obtain your answer to every question.

Please read each question carefully and do not omit any questions. Please answer by circling the answer you choose.

81. Please indicate your sex.

    1. Female
    2. Male

82. Please indicate your age as follows:

    1. Under 20 years of age
    2. 21-30
    3. 31-40
    4. 41-50
    5. 50 - over

83. Below are listed several different kinds of schools or educational divisions. In respect to these various kinds or levels of education, which one have you had the most professional or work experience with, or do you have the most knowledge about? This does not refer to your own education, but to your professional work or related experiences with education.

    1. I have had no such experience
    2. Elementary school (Grade school)
    3. Secondary school (High school)
    4. College or University
    5. Other types

84. What is your marital status?

1. Married
2. Single
3. Divorced
4. Widowed
5. Separated

85. What is your religion?

1. I prefer not to answer
2. Catholic
3. Protestant
4. Jewish
5. Other or none

86. About how important is your religion to you in your daily life?

1. I prefer not to answer
2. I have no religion
3. Not very important
4. Fairly important
5. Very important

87. About how much education do you have?

1. 6 years of school or less
2. 9 years of school or less
3. 12 years of school or less
4. Some college or university
5. A college or university degree

88. Some people are more set in their ways than others. How would you rate yourself?

1. I find it very difficult to change
2. I find it slightly difficult to change
3. I find it somewhat easy to change
4. I find it very easy to change my ways

89. Some people feel that in bringing up children, new ways and methods should be tried whenever possible. Others feel that trying out new methods is dangerous. What is your feeling about the following statement?

"New methods of raising children should be tried out whenever possible."

1. Strongly disagree
2. Slightly disagree
3. Slightly agree
4. Strongly agree

90. Family planning on birth control has been discussed by many people. What is your feeling about a married couple practicing birth control? Do you think they are doing something good or bad? If you had to decide, would you say that are doing wrong, or that they are doing right?

1. It is always wrong
2. It is usually wrong
3. It is probably all right
4. It is always right

91. People have different ideas about what should be done concerning automation and other new ways of doing things. He do you feel about the following statement?

"Automation and similar new procedures should be encouraged (in government, business, and industry) since eventually they create new jobs and raise the standard of living."

1. Strongly disagree
2. Slightly disagree
3. Slightly agree
4. Strongly agree

92. Running a village, city, town, or any governmental organization is an important job. What is your feeling on the following statement?

"Political leaders should be changed regularly, even if they are doing a good job."

1. Strongly disagree
2. Slightly disagree
3. Slightly agree

93. Some poeple believe that more local government income should be used for education even if doing so means raising the amount you pay in taxes. What are your feelings on this?

1. Strongly disagree
2. Slightly disagree
3. Slightly agree
4. Strongly agree

94. Some people believe that more federal government income should be used for education even if doing so means raising the amount you pay in taxes. What are your feelings on this?

1. Strongly disagree
2. Slightly disagree
3. Slightly agree
4. Strongly agree

95. People have different ideas about planning for education in their nation. Which one of the following do you believe is the best way?

1. Educational planning should be primarily directed by the church
2. Planning for education should be left entirely to the parents
3. Educational planning should be primarily directed by the individual city or other local governmental unit
4. Educational planning should be primarily directed by the national government

96. In respect to your religion, about to what extent do you observe the rules and regulations of your religion?

1. I prefer not to answer
2. I have no religion
3. Sometimes
4. Usually
5. Almost always

97. I find it easier to follow rules than to do things on my own.

1. Agree strongly
2. Agree slightly
3. Disagree slightly
4. Disagree strongly

QUESTIONNAIRE: HP

This part of the questionnaire deals with your experiences or contacts with handicapped persons. Perhaps you have had much contact with handicapped persons, or you may have studied about them. On the other hand, you may have had little or no contact with handicapped persons, and may have never thought much about them at all.

98. Some handicapped conditions are listed below. In respect to these various handicaps, with which one have you had the most actual experience?

1. blind and partially blind
2. deaf, partially deaf, or speech impaired
3. crippled or spastic
4. mental retardation
5. social or emotional disorders

In the following questions, 99 through 103 you are to refer to the category of the handicapped persons you have just indicated.

99. The following questions have to do with the kinds of experiences you have had with the category of handicapped person you indicated in the previous question. If more than one category of experience applies, please choose the answer with the highest number.

1. I have read or studied about handicapped persons through reading, movies, lectures, or observations
2. A friend or relative is handicapped
3. I have personally work with handicapped persons as a teacher, counselor, volunteer, child care, etc.
4. I, myself, have a fairly serious handicap

100. Considering all of the times you have talked, worked, or in some other way had personal contact with the category of handicapped persons indicated in question 98, about how many times has it been altogether?

1. Less than 10 occasions
2. Between 10 and 50 occasions
3. Between 50 and 100 occasions
4. Between 100 and 500 occasions
5. More than 500 occasions

101. When you have been in contact with this category of handicapped people how easy for you, in general, would it have been to have avoided being with these handicapped persons?

1. I could not avoid the contact
2. I could generally have avoided these personal contacts only at great cost of difficulty
3. I could generally have avoided these personal contacts only with considerable difficulty
4. I could generally have avoided these personal contacts but with some inconvenience
5. I could generally have avoided these personal contacts without any difficulty or inconvenience

102. During your contact with this category of handicapped persons, did you gain materially in any way through these contacts, such as being paid, or gaining academic credit, or some such gain?

1. No, I have never received money, credit, or any other material gain
2. Yes, I have been paid for working with handicapped persons
3. Yes, I have received academic credit or other material gain
4. Yes, I have both been paid and received academic credit

103. If you have been paid for working with handicapped persons, about what percent of your income was derived from contact with handicapped persons during the actual period when working with them?

1. No work experience
2. Less than 25%
3. Between 26 and 50%
4. Between 51 and 75%

104. If you have ever worked with any category of handicapped persons for personal gain (for example, for money or some other gain), what opportunities did you have (or do you have) to work at something else instead; that is, something else that was (or is) acceptable to you as a job?

1. No such experience
2. No other job was available
3. Other jobs available were not at all acceptable to me
4. Other jobs available were not quite acceptable to me
5. Other jobs available were fully acceptable to me

105. Have you had any experience with mentally retarded persons? Considering all of the times you have talked, worked, or in some other way had personal contact with mentally retarded persons, about how many times has it been altogether?

1. Less than 10 occasions
2. Between 10 and 50 occasions
3. Between 50 and 100 occasions
4. Between 100 and 500 occasions
5. More than 500 occasions

106. How have you generally felt about your experiences with mentally retarded persons?

1. No experience
2. I definitely disliked it
3. I did not like it very much
4. I liked it somewhat
5. I definitely enjoyed it

LIFE SITUATIONS

This section of the booklet deals with how people feel about several aspects of life or life situations. Please indicate how you feel about each situation by circling the answer you choose.

107. It should be possible to eliminate war once and for all

1. strongly disagree
2. disagree
3. agree
4. strongly agree

108. How sure do you feel about your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

109. Success depends to a large part on luck and fate.

1. strongly agree
2. agree
3. disagree
4. strongly disagree

110. How sure do you feel about your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

111. Some day most of the mysteries of the world will be revealed by science.

1. strongly disagree
2. disagree
3. agree
4. strongly agree

112. How sure do you feel about your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

113. By improving industrial and agricultural methods, poverty can be eliminated in the world.

1. strongly disagree
2. disagree
3. agree
4. strongly agree

114. How sure do you feel about your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

115. With increased medical knowledge it should be possible to lengthen the average life span to 100 years or more.

1. strongly disagree
2. disagree
3. agree
4. strongly agree

116. How sure do you feel about your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

117. Someday the deserts will be converted into good farming land by the application of engineering and science.

1. strongly disagree
2. disagree
3. agree
4. strongly agree

118. How sure do you feel about your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

119. Education can only help people develop their natural abilities; it cannot change people in any fundamental way.

1. strongly agree
2. agree
3. disagree
4. strongly disagree

120. How sure do you feel about your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

121. With hard work anyone can succeed.

1. strongly disagree
2. disagree
3. agree
4. strongly agree

122. How sure do you feel about your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

123. Almost every present human problem will be solved in the future.

1. strongly disagree
2. disagree
3. agree
4. strongly agree

124. How sure do you feel about your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

MENTAL RETARDATION

This section of the questionnaire deals with information about mental retardation. Please circle your answer.

125. Which of the following is a preferred method of educating mentally handicapped children:

1. to give the child work he can do with his hands (handicraft, weaving).
2. to place the child in a vocational training school
3. to make the program practical and less academic
4. to present the same material presented to the average child but allowing more time for practice.

126. In educating the mentally handicapped (IQ 50-75) child, occupational training should begin:

1. upon entering high school
2. the second year of high school
3. the last year of high school
4. when the child enters school

127. The major goal of training the mentally handicapped is:

1. social adequacy
2. academic proficiency
3. occupational adequacy
4. occupational adjustment

128. Normal children reject mentally handicapped children because:

1. of their poor learning ability
2. of unacceptable behavior
3. they are usually dirty and poor
4. they do not "catch on"

129. The emotional needs of mentally handicapped are:

1. stronger than normal children
2. the same as normal children
3. not as strong as normal children
4. nothing to be particularly concerned with

130. The proper placement for the slow learner (IQ 75-90) is in:

1. the regular classroom
2. special class
3. vocational arts
4. regular class until age of 16 and then dropped out of school

131. In school, the slow learner ususally:

1. is given a lot of successful experiences
2. meets with a great many failures
3. is a leader
4. is aggressive

132. In grading the slow learner, the teacher should:

1. be realistic, if the child is a failure, fail him
2. grade him according to his achievement with relation to his ability
3. not be particularly concerned with a grade
4. grade him according to his IQ

133. The studies with regard to changing intelligence of pre-school children indicate that:

1. intellectual change may be accomplished
2. no change can be demonstrated
3. change may take place more readily with older children
4. the IQ can be increased at least 20 points if accelerated training begins early enough

134. The development and organization of a comprehensive educational program for the mentally handicapped is dependent upon:

1. adequate diagnoses
2. proper training facilities
3. a psychiatrist
4. parent-teacher organizations

135. The mentally handicapped are physically:

1. markedly taller
2. markedly shorter
3. heavier
4. about the same as the average child of the same age

136. The mentally handicapped child:

1. looks quite different from other children
2. is in need of an educational program especially designed for his needs and characteristics
3. can never be self-supporting
4. cannot benefit from any educational program

137. The mentally handicapped individual usually becomes:

1. a skilled craftsman
2. a professional person
3. a semi-skilled laborer
4. unemployable

138. The educationally handicapped have:

1. at least average intelligence
2. superior intelligence only
3. always have retarded intelligence
4. may have somewhat retarded, average, or superior intelligence.

139. The mentally handicapped have:

1. markedly inferior motor development
2. superior motor development
3. superior physical development
4. about average motor development

140. The reaction of the public toward the retarded child seems to be:

1. rejecting
2. somewhat understanding but not completely accepting
3. accepting
4. express feelings of acceptance but really feel rejecting

APPENDIX A.2

ATTITUDE BEHAVIOR SCALE - DF

ABS-DF

ATTITUDE BEHAVIOR SCALE - DF

DIRECTIONS

This booklet contains statements of how people feel about certain things. In this section you are asked to indicate for each of these statements how most other people believe that deaf people compare to people who are not deaf. Here is a sample statement.

Sample 1.

1. Chance of being intelligent

   (1.) less chance
   2. about the same
   3. more chance

If other people believe that deaf people have less chance than most people to be intelligent you should circle the number 1 as shown above.

If other people believe the deaf have more chance to be intelligent, you should circle the number 3 as shown below.

1. Chance of being intelligent

   1. less chance
   2. about the same
   (3.) more chance

After each statement there will also be a question asking you to state how certain or sure you were of your answer. Suppose you answered the sample question about "being intelligent" by marking about the same.

Next you should then indicate how sure you were of this answer. If you felt sure of this answer, you should circle the number 3 as shown below in Sample 2.

Sample 2.

1. Chance of being intelligent ↔ 2. How sure are you of this answer?

   1. less chance
   (2.) about the same
   3. more chance

   1. not sure
   2. fairly sure
   (3.) sure

DO NOT PUT YOUR NAME ON THE BOOKLET

by: John E. Jordan
College of Education
Michigan State University

revised by: Thomas H. Poulos

112269-TP

ABS-I-DF

Directions: Section I

In the statements that follow you are to circle the number that indicates how other people compare deaf persons to those who are not deaf, and then to state how sure you felt about your answer. Usually people are sure of their answers to some questions, and not sure of their answers to other questions. It is important to answer all questions, even though you may have to guess at the answers to some of them.

Other People generally believe the following things about the deaf person as compared to those who are not deaf:

1. Energy and vitality ⟷

   1. less energetic
   2. about the same
   3. more energetic

2. How sure are you of this answer?

   1. not sure
   2. fairly sure
   3. sure

3. Ability to do school work

   1. less ability
   2. about the same
   3. more ability

4. How sure are you of this answer?

   1. not sure
   2. fairly sure
   3. sure

5. Memory

   1. not as good
   2. same
   3. better

6. How sure are you of this answer?

   1. not sure
   2. fairly sure
   3. sure

7. Interested in unusual sex practices

   1. more interested
   2. about the same
   3. less interested

8. How sure are you of this answer?

   1. not sure
   2. fairly sure
   3. sure

9. Can maintain a good marriage

   1. less able
   2. about the same
   3. more able

10. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

11. Will have too many children

    1. more than most
    2. about the same
    3. less than most

12. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

ABS-I-DF

Other people generally believe the following things about the deaf as compared to those who are not deaf:

13. Faithful to spouse

1. less faithful
2. about the same
3. more faithful

14. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

15. Will take care of his children

1. less than most
2. about the same
3. better than most

16. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

17. Likely to obey the law

1. less likely
2. about the same
3. more likely

18. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

19. Does steady and dependable work

1. less likely
2. about the same
3. more likely

20. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

21. Works hard

1. not as much
2. about the same
3. more than most

22. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

23. Makes plans for the future

1. not as likely
2. about the same
3. more likely

24. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

25. Prefers to have fun now rather than to work for the future

1. more so than most people
2. about the same
3. less so than most people

26. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-I-DF

Other people generally believe the following things about the deaf as compared to those who are not deaf:

27. Likely to be cruel to others

1. more likely
2. about the same
3. less likely

28. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

29. Deaf are sexually

1. more loose than others
2. about the same
3. less loose than others

30. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

31. Amount of initiative

1. less than others
2. about the same
3. more than others

32. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

33. Financial self-support

1. less able than others
2. about the same
3. more able than others

34. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

35. Deaf prefer

1. to be by themselves
2. to be only with normal people
3. to be with all people equally

36. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

37. Compared to others, education of the deaf

1. is not very important
2. is of uncertain importance
3. is an important social goal

38. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

39. Strictness of rules for deaf

1. must be more strict
2. about the same
3. need less strict rules

40. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-II-DF

Directions: Section II

This section contains statements of ways in which other people sometimes act toward people. You are asked to indicate for each of these statements what other people generally believe about interacting with the deaf in such ways. You should then indicate how sure you feel about your answer.

Other people generally believe that deaf persons ought:

41. To play on the school playground with other children who are not deaf

    1. usually not approved
    2. undecided
    3. usually approved

42. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

43. To visit in the homes of other children who are not deaf

    1. usually not approved
    2. usually undecided
    3. usually approved

44. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

45. To go on camping trips with other children who are not deaf

    1. usually not approved
    2. undecided
    3. usually approved

46. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

47. To be provided with simple tasks since they can learn very little

    1. usually believed
    2. undecided
    3. not usually believed

48. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

49. To stay overnight at the homes of children who are not deaf

    1. usually not approved
    2. undecided
    3. usually approved

50. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

ABS-II-DF

Other people generally believe that deaf persons ought:

51. To go to parties with other children who are not deaf

1. usually not approved
2. undecided
3. usually approved

52. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

53. To be hired for a job only if there are no qualified non-deaf people seeking the job

1. usually approved
2. undecided
3. usually not approved

54. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

55. To live in the same neighborhood with people who are not deaf

1. usually not approved
2. undecided
3. usually approved

56. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

57. To date a person who is not deaf

1. usually not approved
2. undecided
3. usually approved

58. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

59. To go to the movies with someone who is not deaf

1. usually not approved
2. undecided
3. usually approved

60. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

61. To marry a person who is not deaf

1. usually not approved
2. undecided
3. usually approved

62. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

63. To wear a hearing aid

1. usually approved
2. undecided
3. usually not approved

64. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-II-DF

Other people generally believe that deaf persons ought:

65. To be allowed to drive a car

1. usually approved
2. not sure
3. usually not approved

66. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

67. To be desirable as friends

1. not usually approved
2. not sure
3. usually approved

68. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

69. To be regarded as having sex appeal

1. not usually so
2. not sure
3. usually so

70. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

71. To be regarded as dangerous

1. usually so regarded
2. not sure
3. not usually regarded so

72. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

73. To be allowed to operate machinery

1. usually not approved
2. not sure
3. usually approved

74. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

75. To be able to obtain auto insurance

1. not usually so
2. not sure
3. usually so

76. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

77. To work at jobs he can do even if he has almost no speech

1. not usually so
2. not sure
3. usually so

78. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

79. To be forced to totally provide for themselves

1. usually
2. not sure
3. not usually

80. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-III-DF

Directions: Section III

This section contains statements of the "right" or "moral" way of acting toward people. You are asked to indicate whether you yourself agree or disagree with each statement according to how you personally believe you ought to behave toward deaf persons. You should then indicate how sure you feel about your answer.

In respect to people who are deaf, do you believe that it is usually right or usually wrong:

81. To take a deaf child on a camping trip with normal children

1. usually wrong
2. undecided
3. usually right

82. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

83. To permit a deaf child to go to the movies with children who are not deaf

1. usually wrong
2. undecided
3. usually right

84. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

85. To allow a deaf child to visit overnight with a child who is not deaf

1. usually wrong
2. undecided
3. usually right

86. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

87. To take a deaf child to a party with children who are not deaf

1. usually wrong
2. undecided
3. usually right

88. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

89. For the government to pay part of the cost of elementary education for deaf children

1. usually wrong
2. undecided
3. usually right

90. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-III-DF

In respect to people who are deaf, do you believe that it is usually right or usually wrong:

91. For the government to pay the full cost of elementary education for deaf children

1. usually wrong
2. undecided
3. usually right

92. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

93. For the government to pay the full cost of a high school education for deaf children

1. usually wrong
2. undecided
3. usually right

94. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

95. For the government to pay part of the medical costs related to the disability

1. usually wrong
2. undecided
3. usually right

96. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

97. For the government to pay all of the medical costs related to the disability

1. usually wrong
2. undecided
3. usually right

98. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

99. To be given money for food and clothing by the government

1. usually wrong
2. undecided
3. usually right

100. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

101. To mix freely with people who are not deaf at parties

1. usually wrong
2. undecided
3. usually right

102. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-III-DF

In respect to people who are deaf, do you believe that it is usually right or usually wrong:

103. To go on dates with someone who is not deaf

1. usually wrong
2. undecided
3. usually right

104. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

105. To go to the movies with someone who is not deaf

1. usually wrong
2. undecided
3. usually right

106. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

107. To marry someone who is not deaf

1. usually wrong
2. undecided
3. usually right

108. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

109. To be a soldier in the army

1. usually wrong
2. undecided
3. usually right

110. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

111. To provide special laws for their protection

1. usually wrong
2. undecided
3. usually right

112. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

113. To provide special help to get around the city

1. usually wrong
2. not sure
3. usually right

114. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

115. To be fitted with hearing aids

1. usually right
2. not sure
3. usually wrong

116. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-III-DF

In respect to people who are deaf, do you believe that it is usually right or usually wrong:

117. To put all deaf in separate classes, away from normal children

1. usually right
2. not sure
3. usually wrong

118. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

119. To reserve certain jobs for the deaf

1. usually wrong
2. not sure
3. usually right

120. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-IV-DF

Directions: Section IV

This section contains statements of ways in which people sometimes act toward other people. You are asked to indicate for each of these statements whether you personally would act toward deaf people according to the statement. You should then indicate how sure you feel about the answer.

In respect to a deaf person, would you:

121. Share a seat on a train for a long trip

1. no
2. don't know
3. yes

122. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

123. Have such a person as a fellow worker

1. no
2. don't know
3. yes

124. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

125. Have such a person working for you

1. no
2. don't know
3. yes

126. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

127. Live in the next-door house or apartment

1. no
2. don't know
3. yes

128. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

129. Extend an invitation to a party at your house

1. no
2. don't know
3. yes

130. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

131. Accept a dinner invitation at his house

1. no
2. don't know
3. yes

132. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-IV-DF

In respect to a deaf person, would you:

133. Go to the movies together

1. no
2. don't know
3. yes

134. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

135. Go together on a date

1. no
2. don't know
3. yes

136. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

137. Permit a son or daughter to date this person

1. no
2. don't know
3. yes

138. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

139. Permit a son or daughter to marry this person

1. no
2. don't know
3. yes

140. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

141. Feel sexually comfortable together

1. no
2. don't know
3. yes

142. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

143. Enjoy working with the deaf

1. no
2. don't know
3. yes

144. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

145. Enjoy working with the deaf as much as other handicapped

1. no
2. don't know
3. yes

146. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

147. Enjoy working with deaf who also have emotional problems

1. no
2. don't know
3. yes

148. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-IV-DF

In respect to a deaf person, would you:

149. Hire the deaf if you were an employer

1. no
2. don't know
3. yes

150. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

151. Want the deaf in your class if you were a teacher

1. no
2. don't know
3. yes

152. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

153. Allow a deaf person to drive a car

1. yes
2. don't know
3. no

154. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

155. Separate the deaf from the rest of society if you were in control

1. yes
2. don't know
3. no

156. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

157. Believe that the care of the deaf is an evidence of national social development

1. no
2. don't know
3. yes

158. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

159. Provide, if you could, special classes for the deaf in regular school

1. no
2. don't know
3. yes

160. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-V-DF

Directions: Section V

This section contains statements of actual feelings that people may hold toward the deaf. You are asked to indicate how you feel toward people who are deaf compared to people who are not deaf. You should then indicate how sure you feel of your answer.

How do you actually feel toward persons who are deaf compared to others who are not deaf:

1. Disliking

   1. more
   2. about the same
   3. less

2. How sure are you of this answer?

   1. not sure
   2. fairly sure
   3. sure

3. Fearful

   1. more
   2. about the same
   3. less

4. How sure are you of this answer?

   1. not sure
   2. fairly sure
   3. sure

5. Horrified

   1. more
   2. about the same
   3. less

6. How sure are you of this answer?

   1. not sure
   2. fairly sure
   3. sure

7. Loathing

   1. more
   2. about the same
   3. less

8. How sure are you of this answer?

   1. not sure
   2. fairly sure
   3. sure

9. Dismay

   1. more
   2. about the same
   3. less

10. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

11. Hating

    1. more
    2. about the same
    3. less

12. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

13. Revulsion

    1. more
    2. about the same
    3. less

14. How sure are you of this answer?

    1. not sure
    2. fairly sure
    3. sure

ABS-V-DF

How do you actually feel toward persons who are deaf compared to others who are not deaf:

15. Contemptful

1. more
2. about the same
3. less

16. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

17. Distaste

1. more
2. about the same
3. less

18. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

19. Sickened

1. more
2. about the same
3. less

20. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

21. Confused

1. more
2. about the same
3. less

22. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

23. Negative

1. more
2. about the same
3. less

24. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

25. At ease

1. less
2. about the same
3. more

26. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

27. Restless

1. more
2. about the same
3. less

28. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

29. Uncomfortable

1. more
2. about the same
3. less

30. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

ABS-V-DF

How do you actually feel toward persons who are deaf compared to others who are not deaf:

31. Relaxed

1. less
2. about the same
3. more

32. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

33. Tense

1. more
2. about the same
3. less

34. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

35. Bad

1. more
2. about the same
3. less

36. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

37. Calm

1. less
2. about the same
3. more

38. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

39. Happy

1. less
2. about the same
3. more

40. How sure are you of this answer?

1. not sure
2. fairly sure
3. sure

Directions: Section VI

This section contains statements of different kinds of actual experiences you have had with deaf persons. If the statement applies to you, circle yes. If not, you should circle no.

Experiences or contacts with the deaf:

41. Shared a seat on a bus, train, or plane
    1. no
    2. uncertain
    3. yes

42. Has this experience been mostly pleasant or unpleasant?
    1. no such experiences
    2. unpleasant
    3. in between
    4. pleasant

43. Eaten at the same table together in a restaurant
    1. no
    2. uncertain
    3. yes

44. Has this experience been mostly pleasant or unpleasant?
    1. no such experience
    2. unpleasant
    3. in between
    4. pleasant

45. Lived in the same neighborhood
    1. no
    2. uncertain
    3. yes

46. Has this experience been mostly pleasant or unpleasant?
    1. no such experience
    2. unpleasant
    3. in between
    4. pleasant

47. Worked in the same place
    1. no
    2. uncertain
    3. yes

48. Has this experience been mostly pleasant or unpleasant?
    1. no such experience
    2. unpleasant
    3. in between
    4. pleasant

49. Had such a person as my boss or employer
    1. no
    2. uncertain
    3. yes

50. Has this experience been mostly pleasant or unpleasant?
    1. no such experience
    2. unpleasant
    3. in between
    4. pleasant

51. Worked to help such people without being paid for it
    1. no
    2. uncertain
    3. yes

52. Has this experience been mostly pleasant or unpleasant?
    1. no such experience
    2. unpleasant
    3. in between
    4. pleasant

53. Have acquaintance like this
    1. no
    2. uncertain
    3. yes

54. Has this experience been mostly pleasant or unpleasant?
    1. no such experience
    2. unpleasant
    3. in between
    4. pleasant

ABS-VI-DF

Experiences or contacts with the deaf:

55. Have good friends like this

1. no
2. uncertain
3. yes

56. Has this experience been mostly pleasant or unpleasant
1. no such experience
2. unpleasant
3. in between
4. pleasant

57. Donated money, clothes, etc., for people like this
1. no
2. uncertain
3. yes

58. Has this experience been mostly pleasant or unpleasant?
1. no such experience
2. unpleasant
3. in between
4. pleasant

59. Have a husband (or wife) like this

1. no
2. uncertain
3. yes

60. Has this experience been mostly pleasant or unpleasant?
1. no such experience
2. unpleasant
3. in between
4. pleasant

61. I am like this, myself

1. no
2. uncertain
3. yes

62. Has this experience been mostly unpleasant or pleasant?
1. no such experience
2. unpleasant
3. in between
4. pleasant

63. My best friend is like this

1. no
2. uncertain
3. yes

64. Has this experience been mostly pleasant or unpleasant?
1. no such experience
2. unpleasant
3. in between
4. pleasant

65. Received pay for working with people like this
1. yes
2. uncertain
3. no

66. Has this experience been mostly pleasant or unpleasant?
1. no such experience
2. unpleasant
3. in between
4. pleasant

67. My children have played with children like this
1. no
2. uncertain
3. yes

68. Has this experience been mostly pleasant or unpleasant?
1. no such experience
2. unpleasant
3. in between
4. pleasant

ABS-VI-DF

Experiences or contacts with the deaf:

69. My children have attended school with children like this

1. no
2. uncertain
3. yes

70. Has this experience been mostly pleasant or unpleasant?

1. no such experience
2. unpleasant
3. in between
4. pleasant

71. Voted for extra taxes for their education

1. no
2. not certain
3. yes

72. Has this experience been mostly pleasant or unpleasant?

1. no such experience
2. unpleasant
3. in between
4. pleasant

73. Worked to get jobs for them

1. no
2. not certain
3. yes

74. Has this experience been mostly pleasant or unpleasant?

1. no such experience
2. unpleasant
3. in between
4. pleasant

75. Have you sexually enjoyed such people

1. no
2. no answer
3. yes

76. Has this experience been mostly pleasant or unpleasant?

1. no such experience
2. unpleasant
3. in between
4. pleasant

77. Studied about such people

1. no
2. uncertain
3. yes

78. Has this experience been mostly pleasant or unpleasant?

1. no such experience
2. unpleasant
3. in between
4. pleasant

79. Have worked as a teacher with such people

1. no
2. uncertain
3. yes

80. Has this experience been mostly pleasant or unpleasant?

1. no such experience
2. unpleasant
3. in between
4. pleasant

ABS-DF-D

This part of the booklet deals with many things. For the purpose of this study, the answers of all persons are important.

Part of the questionnaire has to do with personal information about you. Since the questionnaire is completely anonymous or confidential, you may answer all of the questions freely without any concern about being identified. It is important to the study to obtain your answer to every question. Please read each question carefully and do not omit any questions. Please answer by circling the answer you choose.

81. Please indicate your age as follows:

1. Under 20 years of age
2. 21-30
3. 31-40
4. 41-50
5. 50-over

82. About how important is your religion to you in your daily life?

1. I prefer not to answer
2. I have no religion
3. Not very important
4. Fairly important
5. Very important

83. About how much education do you have?

1. 6 years of school or less
2. 7-9 years of school
3. 10-12 years of school
4. Some college or university
5. A college or university degree

ABS-DF-D

84. Some people are more set in their ways than others. How would you rate yourself.

1. I find it difficult to change
2. I find it slightly difficult to change
3. I find it somewhat easy to change
4. I find it very easy to change my ways

85. Some people feel that in bringing up children, new ways and methods should be tried whenever possible. Others feel that trying out new methods is dangerous. What is your feeling about the following statement?

"New methods of raising children should be tried out whenever possible."

1. Strongly disagree
2. Slightly disagree
3. Slightly agree
4. Strongly agree

86. Family planning on birth control has been discussed by many people. What is your feeling about a married couple practicing birth control? Do you think they are doing something good or bad? If you had to decide, would you say that they are doing wrong, or that they are doing right?

1. It is always wrong
2. It is usually wrong
3. It i probably all right
4. It is always right

87. People have different ideas about what should be done concerning automation and other new ways of doing things. How do <u>you feel</u> about the following statement?

"Automation and similar new procedures should be encouraged (in government, business, and industry) since eventually they create new jobs and raise the standard of living."

1. Strongly disagree
2. Slightly disagree
3. Slightly agree
4. Strongly agree

ABS-DF-D

88. Running a village, city, town, or any governmental organization is an important job. What is your feeling on the following statement?

"Political leaders should be changed regularly, even if they are doing a good job."

1. Strongly disagree
2. Slightly disagree
3. Slightly agree
4. Strongly agree

89. Some people believe that more local government income should be used for education even if doing so means raising the amount you pay in taxes. What are your feelings on this?

1. Strongly disagree
2. Slightly disagree
3. Slightly agree
4. Strongly agree

90. Some people believe that more federal government income should be used for education even if doing so means raising the amount you pay in taxes. What are your feelings on this?

1. Strongly disagree
2. Slightly disagree
3. Slightly agree
4. Strongly agree

91. People have different ideas about planning for education in their nation. Which one of the following do you believe is the best way?

1. Educational planning should be primarily directed by the church
2. Planning for education should be left entirely to the parents
3. Educational planning should be primarily directed by the individual city or other local governmental unit
4. Educational planning should be primarily directed by the national government

92. In respect to your religion, about to what extent do you observe the rules and regulations of your religion?

1. I prefer not to answer
2. I have no religion
3. Sometimes
4. Usually
5. Almost always

ABS-DF-D

93. I find it easier to follow rules than to do things on my own.

1. Agree strongly
2. Agree slightly
3. Disagree slightly
4. Disagree strongly

QUESTIONNAIRE: DEAF PERSONS

This part of the questionnaire deals with your experiences or contacts with deaf persons. Perhaps you have had much contact with deaf persons, or you may have studied about them. On the other hand, you may have had little or no contact with deaf persons, and may have never thought much about them at all.

94. Considering all of the times you have talked, worked, or in some other way had personal contact with deaf persons, about how many times has it been altogether.

1. Less than 10 occasions
2. Between 10 an 50 occasions
3. Between 50 and 100 occasions
4. Between 100 and 500 occasions
5. More than 500 occasions

95. When you have been in contact with deaf persons how easy for you, in general, would it have been to have avoided being with these handicapped persons?

1. No experience
2. I could generally have avoided these personal contacts only at great cost of difficulty
3. I could generally have avoided these personal contacts only with considerable difficulty
4. I could generally have avoided these personal contacts but with some inconvenience
5. I could generally have avoided these personal contacts without any difficulty or inconvenience

96. During your contact with deaf persons, did you gain materially in any way through these contacts, such as being paid, or gaining academic credit, or some such gain?

1. no, I have never received money, credit, or any other material gain
2. yes, I have been paid for working with deaf persons
3. yes, I have received academic credit or other material gain
4. yes, I have both been paid and received academic credit

ABS-DF-D

97. If you have been paid for working with deaf persons, about what percent of your income was derived from contact with deaf persons during the actual period when working with them?

1. No work experience
2. Less than 25%
3. Between 26% and 50%
4. Between 51% and 75%
5. More than 76%

98. If you have ever worked with deaf persons for personal gain (for example, for money or some other gain), what opportunities did you have (or do you have) to work at something else instead; that is, something else that was (or is) acceptable to you as a job?

1. No such experience
2. No other job was available
3. Other jobs available were not at all acceptable to me
4. Other jobs available were not quite acceptable to me
5. Other jobs available were fully acceptable to me

99. How have you generally felt about your experiences with deaf persons?

1. No experience
2. I definitely disliked it
3. I did not like it very much
4. I liked it somewhat
5. I definitely enjoyed it

ABS-DF-D

LIFE SITUATIONS

This section of the booklet deals with how people feel about several aspects of life or life situations. Please indicate how you feel about each situation by circling the answer you choose.

100. It should be possible to eliminate war once and for all
1. Strongly disagree
2. disagree
3. agree
4. strongly agree

101. How sure do you feel about your answer?
1. not sure at all
2. not very sure
3. fairly sure
4. very sure

102. Success depends to a large part on luck and fate.
1. strongly agree
2. agree
3. disagree
4. strongly disagree

103. How sure do you feel about your answer?
1. not sure at all
2. not very sure
3. fairly sure
4. very sure

104. Some day most of the mysteries of the world will be revealed by science
1.strongly disagree
2.disagree
3.agree
4.strongly agree

105. How sure do you feel about your answer?
1. not sure at all
2. not very sure
3. fairly sure
4. very sure

106. By improving industrial and agricultural methods, poverty can be eliminated in the world.

1. strongly disagree
2. disagree
3. agree
4. strongly agree

107. How sure ado you feel about your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

108. With increased medical knowledge it should be possible to lengthen the average life span to 100 years or more

1. strongly disagree
2. disagree
3. agree
4. strongly agree

109. How sure do you feel about your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

ABS-DF-D

110. Someday the deserts will be converted int good farming land by the application of engineering and science.

1. strongly disagree
2. disagree
3. agree
4. strongly agree

111. How sure do you feel about your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

112. Education can only help people develop their natural abilities; it cannot change people in any fundamental way.

1. strongly agree
2. agree
3. disagree
4. strongly disagree

113. How sure do you feel about your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

114. With hard work anyone can succeed.

1. strongly disagree
2. disagree
3. agree
4. strongly agree

115. How sure are you of your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

116. Almost every present human problem will be solved in the future.

1. strongly disagree
2. disagree
3. agree
4. strongly agree

117. How sure are you of your answer?

1. not sure at all
2. not very sure
3. fairly sure
4. very sure

ABS-DF-D

This section of the questionnaire deals with information about deafness. Please circle your answer.

118. A perennial controversy in education of the deaf involves:

1. method of instruction
2. choice of textbooks
3. disability definitions
4. licensing of teachers

119. The criticism of the manual method of teaching the deaf is that:

1. it is too difficult to learn
2. it is difficult for these pupils to communicate with hearing people
3. few teachers know the method
4. it is too symbolic

120. The major goal of educating the deaf is:

1. social adequacy
2. academic proficiency
3. occupational adequacy
4. occupational adjustment

121. Normal children reject deaf children because:

1. of their poor communication skills
2. of unacceptable behavior
3. they are usually dirty and poor
4. they do not "catch on"

122. The emotional needs of deaf are:

1. stronger than normal children
2. the same as normal children
3. not as strong as normal children
4. nothing to be particularly concerned with

123. The criterion used for placement of a child in a class for the deaf is:

1. speech development, intelligence and hearing loss
2. disease causing the loss and intelligence
3. speech development alone
4. hearing loss alone.

ABS-DF-D

124. The oral method of teaching the deaf refers to:

1. teaching by means of speech and lip reading
2. only by auditory training
3. developing visual skills
4. teaching of arithmetic and reading

125. Educating and rehabilitating the hard-of-hearing is primarily:

1. developing language
2. fitting hearing aids
3. giving audiometric tests
4. teaching lip reading and speech correction and auditory training

126. Pre-school training of deaf children results in:

1. the child's hearing acuity being increased 20 decibels
2. better school achievement through the grades
3. any beneficial changes being noticed at the end of the pre-school period
4. no beneficial changes to the child

127. The development and organization of a comprehensive educational program for the deaf is dependent upon:

1. adequate diagnoses
2. proper educational facilities
3. an audiologist
4. parent-teacher organization

128. The deaf, deafened, and hard-of-hearing are different categories based mainly on:

1. degree of hearing loss
2. speech development
3. lip reading ability
4. amount of hearing loss and age of onset

129. The deaf child:

1. looks quite different from other children
2. is in need of an educational program especially designed for his needs and characteristics
3. can never be self-supporting
4. cannot benefit from any educational program

ABS-DF-D

130. The employment possibilities of a deaf person on the whole are:

1. dependent on his training
2. dependent on his hearing loss
3. dependent on his ability to use a hearing aid
4. unemployable

131. Hard-of-hearing children usually have a decibel loss of:

1. 0-15
2. 20-60
3. 70-90
4. 90-100

132. The congenital deaf child will probably display:

1. articulatory errors
2. voice abnormalities
3. retarded language growth
4. all of the above

133. The reaction of the public toward the deaf child seems to be:

1. rejecting
2. somewhat understanding but not completely accepting
3. accepting
4. express feelings of acceptance but really feel rejection

ABS-DF-D

Following are some general questions. Please answer all of them.

134. Please indicate your sex.

1. female
2. male

135. Below are listed several different kinds of schools or educational divisions. In respect to these various kinds or levels of education, which one have you had the most professional or work experience with, or do you have the most knowledge about? This does not refer to your own education, but to your professional work or related experiences with education.

1. I have had no such experience
2. elementary school (grade school)
3. secondary school (high school)
4. college or university
5. other types

136. What is your marital status?

1. married
2. single
3. divorced
4. widowed
5. separated

137. What is your religion?

1. I prefer not to answer
2. Catholic
3. Protestant
4. Jewish
5. Other or none

APPENDIX B

STATISTICAL MATERIAL

TABLE 30.--N's, means, and standard deviations for ABS-DF samples.

Variable	Range of Means	TDF[1] (N=51)		RST[2] (N-58)		MDF[3] (N=50)	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
Attitude Content							
1. Stereotype	20-60	37.24	4.78	44.91	5.15	43.82	5.42
2. Normative	20-60	41.63	7.19	45.62	7.85	43.08	6.40
3. Moral Evaluation	20-60	45.14	3.70	46.24	5.36	45.96	3.94
4. Hypothetical	20-60	54.22	3.20	50.88	6.75	54.10	2.96
5. Feeling	20-60	41.45	6.09	38.74	5.60	41.28	5.49
6. Action	20-57	39.24	4.90	30.29	4.82	37.02	5.77
Attitude Intensity							
7. Stereotype	20-80	38.78	6.97	38.50	7.26	40.14	6.87
8. Normative	20-80	44.45	7.69	44.78	7.73	44.32	7.86
9. Moral Eval.	20-80	53.08	6.08	49.41	7.95	49.86	7.39
10. Hypothetical	20-80	55.86	3.53	52.35	8.25	52.82	5.51
11. Feeling	20-80	56.53	5.51	50.22	9.12	50.84	8.37
12. Action	20-80	50.49	7.38	31.81	7.25	40.16	8.28
Value							
13. Efficacy--Cont.	9-36	24.04	3.24	23.31	3.03	23.72	2.47
14. Efficacy--Int.	9-36	29.49	3.31	29.26	3.70	27.32	4.36
15. Df Knowledge	0-16	11.63	1.44	9.83	1.84	9.64	1.85
Contact							
16. Df Amount	1-5	4.90	0.30	2.03	1.34	4.18	1.29
17. Df Avoid.	1-5	3.39	1.46	3.62	1.59	3.16	1.46
18. Df Income	1-5	4.75	0.82	1.19	0.78	1.02	0.14
19. Df Alter.	1-5	4.43	0.94	1.19	0.83	1.00	0.00
20. Df Enjoy	1-5	4.14	1.10	4.09	0.78	4.42	1.14
Demographic							
21. Age	1-5	3.06	1.12	2.91	1.17	3.14	0.73
22. Educ. Amount	1-5	4.96	0.20	4.98	0.13	3.18	0.66
23. Religion Impor.	1-5	4.43	0.92	4.16	0.75	4.08	1.16
24. Religion Adher.	1-5	4.14	1.10	4.09	0.78	4.42	1.14
Change Orientation							
25. Self Change	1-4	2.75	0.63	2.67	0.57	2.74	0.80
26. Child Rearing	1-4	3.14	0.80	2.83	0.82	2.92	0.78
27. Birth Control	1-4	3.41	0.57	3.33	0.51	3.38	0.57
28. Automation	1-4	3.22	0.88	3.28	0.81	3.16	0.79
29. Political Lead.	1-4	2.67	0.92	2.22	1.01	2.58	1.03
30. Rule Adher.	1-4	2.77	0.76	2.75	0.81	2.28	0.78
Education							
31. Local Aid	1-4	2.78	0.95	2.98	0.98	2.82	0.85
32. Federal Aid	1-4	2.84	0.89	2.72	1.04	2.60	0.86
33. Ed. Planning	1-4	3.24	0.59	3.12	0.56	2.98	0.69

[1]Teachers of the deaf.

[2]Regular school teachers

[3]Mothers of deaf children.

[4]Managers-executives.

MAN[4] (N=55)		MND[5] (N=50)		M[6] (N=74)		F[7] (N=190)		T[8] (N=264)	
Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
45.09	5.87	32.48	4.16	44.57	5.80	39.48	7.10	40.91	7.13
42.87	6.88	40.22	3.91	43.14	7.47	42.63	6.58	42.77	6.83
42.62	5.96	43.84	4.59	43.65	5.94	45.20	4.51	44.77	4.99
50.07	5.52	45.34	6.17	50.69	5.63	51.01	6.25	50.92	6.07
39.04	5.72	45.30	4.36	39.15	5.45	41.79	5.96	41.05	5.93
33.64	5.67	52.30	4.58	33.04	5.78	40.15	9.38	38.16	9.10
37.42	7.04	26.66	6.34	37.87	7.46	35.83	8.65	36.40	8.37
42.51	8.85	45.46	4.76	43.51	8.65	44.58	7.07	44.28	7.55
47.85	9.27	41.06	9.77	49.23	8.78	47.93	9.12	48.30	9.03
51.51	7.77	38.74	9.98	52.50	7.28	49.53	9.94	50.36	9.36
49.40	9.21	47.16	9.03	50.31	8.87	51.00	8.90	50.81	8.88
36.55	8.99	50.36	6.99	36.30	9.45	43.53	10.66	41.50	10.82
23.98	3.04	19.62	2.75	23.72	3.21	22.68	3.35	22.97	3.34
29.24	4.18	23.38	4.49	29.78	4.05	27.05	4.59	27.82	4.60
9.22	1.80	4.14	2.17	9.37	1.90	8.80	3.85	8.95	3.04
2.60	1.27	1.92	1.19	2.58	1.37	3.29	1.71	3.09	1.65
3.74	1.39	3.32	1.79	3.71	1.43	3.36	1.58	3.46	1.55
1.18	0.43	1.06	0.24	1.35	0.96	2.00	1.68	1.82	1.54
1.36	1.03	1.20	0.81	1.49	1.25	1.95	1.60	1.82	1.52
4.00	1.07	3.28	1.68	3.96	1.15	3.93	1.53	3.94	1.44
4.13	0.92	3.24	0.85	3.76	1.14	3.13	0.99	3.30	1.07
4.16	0.79	3.94	0.82	4.38	0.77	4.23	0.94	4.27	0.89
4.11	0.76	4.14	0.81	4.08	0.75	4.22	0.93	4.18	0.89
4.02	0.73	3.78	1.09	4.05	0.76	3.97	1.06	4.00	0.98
2.55	0.81	2.58	0.73	2.59	0.76	2.68	0.69	2.66	0.71
2.91	0.82	3.02	0.77	2.92	0.84	2.97	0.78	2.96	0.80
3.29	0.60	3.50	0.58	3.31	0.57	3.41	0.36	3.38	0.57
3.62	0.73	3.02	0.96	3.61	0.68	3.13	0.88	3.27	0.85
2.75	1.09	2.40	1.05	2.68	1.07	2.46	1.02	2.52	1.04
2.64	0.93	2.38	0.64	2.74	0.91	2.50	0.76	2.57	0.81
2.95	0.97	2.86	0.99	3.00	0.97	2.84	0.94	2.88	0.95
2.67	1.07	2.64	1.03	2.65	1.10	2.72	0.93	2.70	0.98
2.93	0.66	3.16	0.51	2.99	0.65	3.12	0.59	3.08	0.61

[5]Mothers of non-deaf children.

[6]Males.

[7]Females.

[8]Total.

APPENDIX C

GLOSSARY

GLOSSARY[1]

Approximation--see "simplex approximation."

Attitude--"Delimited totality of behavior with respect to something" (Guttman, 1950, p. 51).

Content--situation (action, feeling, comparison, circumstances) indicated in an attitude item; generally corresponds to "lateral struction."

Definitional statement--specification of characteristics proper to an item of a given level member, typically stated in phrase or clause form.

Definitional system--ordered group of definitional statements or of the corresponding level members;typically either the group constituting a "semantic path" or the complete group of 12 level members in the "semantic map."

Directionality--characteristic of an item, sometimes called positive or negative, determining agreement with the item as indicating favorableness or unfavorableness toward the attitude object.

Element--one of two or more ways in which a facet may be expressed; in the present system, all joint facets are dichotomous, expressed in one.

Facet--one of several semantic units distinguishable in the verbal expression of an attitude; in the present system, five dichotomous facets are noted within the joint struction.

Facet profile--see "struction profile."

Joint struction--see also "struction," "lateral struction"--"operationally defined as the ordered sets of . . . five facets from low to high across all five facets simultaneously" (Jordan, 1968a, p. 76); that part of the semantic structure of attitude items which can be determined independently of specific response situations.

---

[1]Credit is given to Maierle (1969) for most of the work in developing this glossary.

Lateral struction--see also "struction," "joint struction"--that part of the semantic structure of attitude items which is directly dependent on specification of situation and object; a more precise term than "content."

Level--degree of attitude strength specified by the number of strong and weak facets in the member(s) of that level; in the present system, six ordered levels are identified: level 1 is characterized by the unique member having five weak facets; level 2, by members having four weak and one strong facet . . . level 6, by the unique member having five strong facets.

Level member--one of one or more permutation(s) of strong and weak facets which are common to a given level; in the present system, 12 level members have been identified: three on level 2, four on level 3, two on level 4, and one each on levels 1, 5, and 6.

Map--see "semantic map."

Member--see "level member."

Path--see "semantic path."

Profile--see "struction profile."

Reversal--change in a specified order of levels or of correlations, involving only the two indicated levels or correlations.

Semantic--pertaining to or arising from the varying meanings, grammatical forms, or stylistic emphasis of words, phrases, or clauses.

Semantic map--two dimensional representation of hypothesized relationships among six levels and among 12 level members.

Semantic path--ordered set of level members, typically six, such that each member has one more strong facet than the immediately preceding member and one less strong facet than the immediately following member.

Semantic possibility analysis--linguistic discussion of the implications of the five dichotomous joint facets identified in the present system; of 32 permutations, only 12 are considered logically consistent.

Simplex--specific form of (correlation) matrix, diagonally dominated and decreasing in magnitude away from the main diagonal; see Table 8 for comparison of equally spaced and unequally-spaced diagonals.

Simplex approximation--matrix which approaches more or less perfectly the simplex form; existing tests (Kaiser, 1962; Mukherjee, 1966) reflects both ordering of individual entries and sizes of differences between entries and between diagonals.

Strong(er)--opposite of weak(er)--term functionally assigned to one of two elements, to a facet expressed by its strong element, or to a level member characterized by more strong facets than another level member; the strong-weak continuum is presently examined as undimensional.

Struction--see also "joint struction," "lateral struction"--semantic pattern identifiable in any attitude item, or the system of such identifications.

Struction profile--specification, typically indicated by small letters and numerical subscripts, of the permutation(s) of weak and strong elements or facets in a level member or a set of level members; or of permutations of lateral elements or facets.

Transposition--change in a specified order of levels or or correlations involving a change in position of one level or correlation and the corresponding one-place shift in the position of following or preceding levels or correlations.

Weak--opposite of "strong" (see "strong").