

ADOLESCENT DEPRESSION AND INTERPERSONAL BEHAVIOR

by

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## ABSTRACT

## ADOLESCENT DEPRESSION AND INTERPERSONAL BEHAVIOR

Margery D. Furnell

Adolescents may be particularly vulnerable to depression. Yet Public health nurses working with large groups of adolescents are often unable to recognize depressed youths due to the lack of simple, reliable screening tools. This exploratory study was undertaken in order to gain information that could be used to develop such a tool. Specifically, the following question was posed: 'Are there modes of relating interpersonally that can be used to distinguish the highly and moderately depressed adolescent from the non-depressed adolescent?' The answer was sought from information obtained from adolescent self-reports on Beck's Depression Inventory and an adapted and pre-tested form of McNair and Lorr's Interpersonal Behavior Inventory. These inventories were administered to twenty-five adolescents who attended a treatment centre for adolescents with emotional problems and seventy seven randomly selected adolescents who attended four Catholic high schools in Greater Vancouver.

Adolescents were classified as non-depressed, moderately depressed and highly depressed on the basis of their scores on Beck's Depression Inventory.

An analysis of variance was carried out to discover if there was a significant difference in interpersonal behavior scores of non-depressed, moderately depressed and highly depressed adolescents. A simple regression analysis and a multiple step-wise regression analysis was done to see if there was a significant correlation between any interpersonal behavior categories

that could distinguish between the non-depressed, moderately depressed, and highly depressed adolescent.

The findings supported the overall conclusion: adolescents who exhibit mistrust, competition and detachment most of the time or all of the time and exhibit dominance only some of the time or not all all, may be moderately or highly depressed adolescents.

The findings did not support the generally held thesis that suppressed hostility is an important factor in the depressed person.

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(Thesis Chairman)

## TABLE OF CONTENTS

CHAPTER	PAGE
I INTRODUCTION	1
The Problem	1
Purpose of the Study	4
Hypothesis	4
Assumptions	5
Limitations	5
Definitions	7
II REVIEW OF THE LITERATURE	9
Introduction	9
Adolescence	9
Depression	16
Cause of Depression	18
Adolescence: A Time of Loss	20
Identification of the Depressed Person	21
Interpersonal Behaviors	23
Studies of Adolescent Interpersonal Behavior	26
Studies of Patient's Interpersonal Behavior	26
A Study of Depressed Women's Interpersonal Behavior	27
Summary	27
III METHODOLOGY	29
Study Population	29
Selection of Population from the Treatment Centre	29
Selection of Population from the High Schools	30
Instruments	33
Beck's Depression Inventory	33
McNair and Lorr's Interpersonal Behavior Inventory	35
Pre-tests by the Researcher	36
Adapted Interpersonal Behavior Inventory (AIBI)	37
Administration of the Inventories	37
IV ANALYSES OF DATA	39
Identification of Non-Depressed, Moderately Depressed, and Highly Depressed Adolescents Using a Depression Inventory	39
Interpersonal Behavior Correlates of Depression	44
Simple Regression Analysis	44
Multiple Step-Wise Regression Analysis	47
Interpersonal Behavior Categories that Distinguish Between Non-Depressed, Moderately Depressed, and Highly Depressed Adolescents	50

CHAPTER	PAGE
IV ANALYSES OF DATA cont'd	39
Discussion	57
Mistrust	57
Competition	58
Dominance	59
Succorance	61
Inhibition and Aggression	63
V SUMMARY, CONCLUSION, IMPLICATIONS, AND RECOMMENDATIONS	64
Summary	64
Conclusions	67
Implications and Recommendations	69
VI SOURCES CONSULTED	71
VII APPENDIX	78
A. Philosophy of British Columbia Youth Development Centre	79
B. Consent Letter	85
C. Materials Pertaining to Beck's Depression Inventory	87
Pre-tests	88
Value of Statements on Beck's Depression Inventory	89
Beck's Depression Inventory	91
Inventory Analyses Tables	98
D. Materials Pertaining to the Interpersonal Behavior Inventory	103
Pre-tests	104
Behavior Categories and Corresponding Questions	107
Adapted Interpersonal Behavior Inventory	108
Inventory Analyses	117

## LIST OF TABLES

TABLE	PAGE
1. Methods of Delineating Disease Entries Under the Classification of Depression	17
2. Number of Adolescents Classified as Non-Depressed, Moderately Depressed, Highly Depressed	40
3. Scores of Non-Depressed, Moderately Depressed and Highly Depressed Adolescents on 15 Interpersonal Behavior Categories	41
4. Analysis of Variance: Interpersonal Behavior Categories of Non-Depressed, Moderately Depressed and Highly Depressed Adolescents	43
5. Simple Regression Analysis: Significant Predictors	45
6. Simple Regression Analysis: Non-Significant Predictors	46
7. Multiple Regression Analysis: Correlation Between Interpersonal Behavior Categories	48
8. Multiple Stepwise Regression Analysis: Significant Predictors	49
9. Multiple Stepwise Regression Analysis: Non-Significant Predictors	51
10. Discriminant Analysis: Variables to Include as Discriminants	52
11. Discriminant Analysis: Variables to Exclude as Discriminators	54
12. Discriminant Analysis: Stepwise Selection of Variables to be Entered	55
13. Discriminant Analysis: Goodness of Classification into Non-Depressed, Moderately Depressed and Highly Depressed Groups	56
14. Value of Statements on Beck's Depression Inventory	89
15. Beck's Depression Inventory: Descriptive Data	94
16. Beck's Depression Inventory: Goodness of Fit of Depression Scores	96
17. Beck's Depression Inventory: Sources of Variance	97
18. Item Analysis of Depression Scores	98

TABLE	PAGE
19. Interpersonal Behavior Inventory, Behavior Categories and Corresponding Questions	107
20. Sources of Variation of AIBI Scores	117
21. Sources of Variation of Dominance Scores	118
22. Sources of Variation of Competition Scores	119
23. Sources of Variation of Aggression Scores	120
24. Sources of Variation of Mistrust Scores	121
25. Sources of Variation of Detachment Scores	122
26. Sources of Variation of Inhibition Scores	123
27. Sources of Variation of Submissiveness Scores	124
28. Sources of Variation of Succorance Scores	125
29. Sources of Variation of Abasement Scores	126
30. Sources of Variation of Deference Scores	127
31. Sources of Variation of Agreeableness Scores	128
32. Sources of Variation of Nurturance Scores	129
33. Sources of Variation of Affection Scores	130
34. Sources of Variation of Sociability Scores	131
35. Sources of Variation of Exhibition Scores	132
36. Item Analysis of Dominance Questions	148
37. Item Analysis of Competition Questions	150
38. Item Analysis of Aggression Questions	152
39. Item Analysis of Mistrust Questions	154
40. Item Analysis of Detachment Questions	156
41. Item Analysis of Inhibition Questions	158
42. Item Analysis of Submissiveness Questions	160
43. Item Analysis of Succorance Questions	162
44. Item Analysis of Abasement Questions	164
45. Item Analysis of Deference Questions	166



TABLE	PAGE
46. Item Analysis of Agreeableness Questions	168
47. Item Analysis of Nurturance Questions	170
48. Item Analysis of Affection Questions	172
49. Item Analysis of Sociability Questions	174
50. Item Analysis of Exhibition Questions	176

## LIST OF FIGURES

FIGURE	PAGE
1. Selection of the Population from the Treatment Centre November 14, 1972 to February 1, 1973	31
2. Selection of the Population from Randomly Selected Catholic School Students January 15, 1973 to March 14, 1973	32
3. Frequency Distribution of Depression Scores	95
4. Frequency Distribution of Dominance Scores	133
5. Frequency Distribution of Competition Scores	134
6. Frequency Distribution of Aggression Scores	135
7. Frequency Distribution of Mistrust Scores	136
8. Frequency Distribution of Detachment Scores	137
9. Frequency Distribution of Inhibition Scores	138
10. Frequency Distribution of Submissiveness Scores	139
11. Frequency Distribution of Succorance Scores	140
12. Frequency Distribution of Abasement Scores	141
13. Frequency Distribution of Deference Scores	142
14. Frequency Distribution of Agreeableness Scores	143
15. Frequency Distribution of Nurturance Scores	144
16. Frequency Distribution of Affection Scores	145
17. Frequency Distribution of Sociability Scores	146
18. Frequency Distribution of Exhibition Scores	147

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Although each investigator cannot consider all aspects of a problem, we can overcome this limitation by complementarity of investigators and theorists - that is investigation of many facets of a problem by many individuals and pooling their results.

G. Allport

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CHAPTER I  
INTRODUCTION

The Problem

Theory and recent reports on the incidence of mental illness suggest that adolescents may be particularly vulnerable to depression. Yet adults working with adolescents have had great difficulty in recognizing the youth suffering from this emotional disorder.

Specific numbers of adolescents who are depressed cannot be ascertained from national or provincial vital statistics. However, there are studies which suggest that their numbers may be large and on the increase. The Celdic Report, undertaken in Canada in 1970, studied children under the age of twenty and consulted with professional people who worked with them, as well as with parents of these children. The report estimated that a minimum of a million children in Canada suffered from an emotional or learning disorder.<sup>1</sup> The American report Action for Mental Health, written in 1960, reported that their child population with emotional problems numbered in the millions.<sup>2</sup> Other research revealed that there has been a rapid gain in total number of patients with depression admitted to state hospitals, and that much of that increase could be accounted for by an increase in the admission of depressed adolescents and young people

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<sup>1</sup> The Commission on Emotional and Learning Disorders in Children, The Celdic Report (Toronto: Leonard Crawford publisher, 1970), p. 5.

<sup>2</sup> The Joint Commission on Mental Illness and Health, Action for Mental Health (New York: John Wiley and Sons, Inc., 1961), p. 114.

in their twenties.<sup>3,4,5,6</sup> Dunlop wrote that depression was second only to schizophrenia as the cause for first and second admissions to mental hospitals in the United States and that the prevalence of depression outside of hospital was approximately five times greater than schizophrenia.<sup>7</sup> Beck stated:

Depression ranks as one of the major health problems of today. Millions of patients suffering from some form of this disorder crowd the psychiatric and general hospitals, the out-patient clinics, and the offices of private practitioners. Depression may appear as a primary disorder or it may accompany a variety of other psychiatric or medical disorders. Not only is depression a prominent cause of human misery but its by-product, suicide, is a leading cause of death in certain age groups.<sup>8</sup>

In Canada, in 1970, the number of completed suicides for the age group of ten to nineteen was 2.83 per 100,000.<sup>9</sup> In British Columbia,

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<sup>3</sup> Saul Rosenthal, "Changes in a Population of Hospitalized Patients with Affective Disorders", American Journal of Psychiatry, 123: 671-675, 1966.

<sup>4</sup> J. Oltman and S. Friedman, "Trends in Admissions to a State Hospital, 1942-1964", Archives of General Psychiatry, 13: 549, 1965.

<sup>5</sup> W.J. Turner, F. O'Neil, and S. Merlis, "The Treatment of Depression in Hospitalized Patients Before and Since the Introduction of Anti-Depressant Drugs", American Journal of Psychiatry, 119: 421, 1962.

<sup>6</sup> A.P. Bay, "Discussion of the Treatment of Depression in Hospitalized Patients Before and Since the Introduction of Anti-Depressant Drugs", American Journal of Psychiatry, 119: 425, 1962.

<sup>7</sup> E. Dunlop, "The Use of Antidepressants and Stimulants", Modern Treatments, 2: 543-568, 1965.

<sup>8</sup> A. Beck, Depression (New York: Harper and Row, 1967), p. xiii.

<sup>9</sup> Dominion of Canada, Bureau of Statistics, Causes of Death (Ottawa: Statistics Canada, 1970), p. 135.

in 1970, it was 5.3 per 100,000 - the third leading cause of death for this age group.<sup>10</sup> Some authorities believe that the actual rate of suicide is three to four times as great as the official rate, and the number of attempted suicides is believed to be seven or eight times the number of successful suicides.<sup>11</sup>

The Celdic Report states that "in any other field, a problem of this magnitude would be heralded as an acute epidemic or national disaster and major resources would be poured into the search for a solution".<sup>12</sup> Prevention through early identification of problems, and mobilization of help must become a high priority for people working with children.<sup>13</sup> Public health nurses are in a particularly advantageous position to contribute to preventative programs. They work with children of all ages in clinics and schools; they have ready access to families in their homes; they have professional contacts.

The Public health nurse is, however, hampered in carrying out effective prevention of emotional disorders in children, by a variety of factors. Specifically, she is hampered in assisting in the prevention of severe depression in adolescents by the paucity of reference material

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<sup>10</sup> Province of British Columbia, Department of Health Services and Hospital Insurance, Vital Statistics (British Columbia: K.M. McDonald printer, 1970), p. 50.

<sup>11</sup> E. Stengel, "Recent Research into Suicide and Attempted Suicide", American Journal of Psychiatry, 118: 725, 1962.

<sup>12</sup> The Commission on Emotional and Learning Disorders in Children, The Celdic Report (Toronto: Leonard Crainford publisher, 1970), p. 393.

<sup>13</sup> Ibid., pp. 9-10.

available for understanding the phenomena and by the lack of diagnostic tools suitable to identify a depressed adolescent in need of help, in a large student population.

### Purpose

The purpose of this study was to answer the question, 'Are there modes of relating interpersonally that can be used to distinguish the moderately depressed and high depressed adolescent, from the non-depressed adolescent?' The answer to this question was sought by comparing the interpersonal behaviors of non-depressed, moderately depressed and highly depressed adolescents. The levels of depression were measured by Beck's Depression Inventory and the modes of interpersonal behavior were ascertained from an adapted form of McNair and Lorr's Interpersonal Behavior Inventory.

### Hypotheses

The hypotheses guiding this study were:

1. there is no significant difference in the interpersonal behavior categories of non-depressed, moderately depressed and highly depressed adolescents;
2. there are no interpersonal behavior categories that significantly correlate with depression;
3. there are no interpersonal behavior categories that can distinguish between non-depressed, moderately depressed, and highly depressed adolescents.



### Assumption

A specific assumption basic to this study was that each adolescent participating in the study was aware of his own feelings and characteristic interpersonal behaviors, such that he was able to choose from a list of descriptive statements the one that most accurately described his feelings or behavior. Elaboration on this is contained in Chapter III under 'Instruments'.

### Limitations

1. The population was limited in the following way:

- a) 102 subjects were drawn from one treatment centre and four Catholic high schools in Metropolitan Vancouver;
- b) the population from the treatment centre consisted of only those adolescents who chose to participate in the study between November fourteen, 1972 and February one, 1973;
- c) the population from the Catholic high schools consisted of those randomly selected students who chose to participate in the study and who had a guardian's written consent on the day the inventories were administered in their high school.

Care must therefore be taken in generalizing the findings of this group of adolescents to a different or larger group.

2. Information gathered for this research was limited to how adolescents reported they felt and interacted with others, on the day the research took place. Considering the limitations of this type of report as discussed in Chapter II under 'Interpersonal Behavior' and in Chapter III under 'Instruments' the findings of this study are not sufficient to lay the

sole groundwork for a tool to identify the depressed adolescent. Further research using the 'other person' as the rater of behavior should be completed to discover if enough similar overt behavior is commonly perceived by both adolescent and 'other' to warrant the use of this behavior in a screening tool.

## Definition of Terms Used in the Study

- Adolescent                      Any male or female youth between the age of thirteen and seventeen, inclusive.
- Non-depressed                  Any adolescent whose score was equal to or less than thirteen, on the Beck Depression Inventory.
- Moderately depressed                  Any adolescent whose score was equal to or less than fourteen to twenty-four, on the Beck Depression Inventory.
- Highly depressed              Any adolescent whose score was equal to or greater than twenty-five on the Beck Depression Inventory.
- Interpersonal behavior                  Any audible or observable interaction between two or more persons, that indicated how one individual thought and felt about another person; how he perceived him and what he did to him; what he expected him to do or think, and how he reacted to the actions of the other; the other may or may not be physically present.
- Interpersonal behavior category                  A mode of relating interpersonally. The modes used in this study were:
- Dominance - the tendency to lead, direct, influence and control others.
  - Competition - the tendency to seek recognition and status.
  - Aggression - the tendency to criticize, ridicule or be punitive toward others.
  - Mistrust - the tendency to doubt or support the attitudes, feelings and intentions of others.
  - Detachment - the tendency to be aloof, withdrawn, and seclusive.
  - Inhibition - the tendency to be shy and to withdraw from the attention of others.
  - Abasement - the tendency to take blame, belittle oneself, and apologize.

- Submissiveness - the tendency to be passive, docile, and comply to the directions of others.
- Succorance - the tendency to seek help, support, sympathy, and guidance.
- Deference - the tendency to be involved in the support and service of a leader or superior.
- Agreeableness - the tendency to be co-operative, helpful and considerate.
- Nurturance - the tendency to offer help, support, sympathy and counsel to others.
- Affection - the tendency to express liking, warmth, and friendliness towards others.
- Sociability - the tendency to join groups, to be included with others, and to be gregarious.
- Exhibition - the tendency to act in attention-seeking, and self-dramatizing ways.

## CHAPTER 2

### REVIEW OF THE LITERATURE

The paucity of specific relevant literature pertaining to both the concept of depression and the area of interpersonal relations in adolescence has been lamented by several authors. Coleman has remarked that:

The field of adolescent development contains a number of areas which have so far remained largely in the area of speculation. . . . No where is this more true than in the area of interpersonal relations.

Krakowski has written that the concept of depression in childhood including adolescence is unpopular and insufficiently understood.<sup>2</sup>

Recourse has thus been made to the general fields of Adolescence, Depression, and Interpersonal Behavior. This background of theory and research has been used for the following purposes:

- 1) defining the developmental stage of adolescence and identifying its unique characteristics;
- 2) defining depression, identifying possible causes of depression and methods of detection;
- 3) hypothesising that adolescence is a period vulnerable to depression;
- 4) defining interpersonal behavior and delineating the ways that it has been studied.

#### Adolescence

The philosophical question of whether man develops in stages, each with its unique characteristics, has both gained and lost support

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<sup>1</sup> A. Krakowski, "Depressive Reactions of Children and Adolescents", Psychosomatics, 11: 431, 1970.

<sup>2</sup> J.C. Coleman, "The Perception of Interpersonal relationships During Adolescence", British Journal of Educational Psychology, 40: 253, 1970.

through those years.<sup>3</sup>

Historically, Aristotle may have been the first to have delineated adolescence as a stage of development. He defined it as a period beginning with puberty and ending at age twenty-one. He believed that ability to make independent choices was the unique task for youth to achieve during this stage. The characteristic behaviors of youth were: indiscriminant satisfaction of strong feelings; changeable, fickle behavior; affront at being slighted.<sup>4</sup>

During the Middle Ages, the church repudiated the belief that man developed in unique stages. Man was viewed as having instantaneous creation, thus he came into the world as a miniature adult, different only in quantity not quality.<sup>5</sup>

Rousseau challenged these teachings. He stated that adolescence could be delineated into two age groups: one from age twelve to fifteen, the other from age fourteen to twenty. The former period represented the time when youth had to develop his self consciousness, his rational functions, and his curiosity. The latter period required the youth to develop an interest in other people and a need for affection.<sup>6</sup>

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<sup>3</sup> R.E. Muus, Theories of Adolescence (New York: Random House, 1968) p. 10.

<sup>4</sup> Aristotle, The Work of Aristotle Translated to English, XI, trans. Rhys Roberts (Oxford: Clarendon Press, 1959), p. 1389a.

<sup>5</sup> R.E. Muus, op, cit., pp. 18-21.

<sup>6</sup> Ibid., pp. 21-31.

In the nineteenth century, Stanley Hall gave the period of adolescence considerable emphasis. He saw adolescence as a turbulent transitional state similar to a period in time when society was in a chaotic transition between primitive times and cultured times. This comparison of man's life cycle to a recapitulation of societies' growth was based on Darwin's theory of evolution.<sup>7</sup>

Current theorists in the field of human development have continued to support the belief that man passes through a distinct period called adolescence during his growth to old age. They vary, however, in what they believe constitutes the uniqueness of that period.

Erikson has viewed adolescence as a time during which youth has to establish his independence and identity. Adulthood cannot be reached until these tasks have been met.<sup>8</sup>

Havinghurst defined adolescence as a time when specific biologically and culturally defined tasks must be mastered. The biologically based tasks are:

- 1) acceptance of physique and appropriate sex role
- 2) acquisition of friends of both sexes
- 3) preparation for marriage and family
- 4) attainment of independence from parents and other adults
- 5) selection and preparation for an occupation
- 6) development of intellectual skills and formulation of concepts to contribute to society

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<sup>7</sup> Ibid, pp. 31-35.

<sup>8</sup> E. Erikson, Identity Youth and Crises (New York, W.W. Norton and Co., Inc., 1968), pp. 128-135.

The culturally based tasks for the North American youth are:

- 1) attainment of economic independence
- 2) achievement of socially responsible behavior
- 3) formulation of values that are in harmony with the scientific world.<sup>9</sup>

Like Erikson and Havinghurst, Strom has recognized the need for adolescents to gain independence but he has given an added emphasis to youth's need to build peer relations.<sup>10</sup>

Piaget's writings have differed from these writers primarily in their emphasis on the function of the maturation of the nervous system, interaction with the physical world, and influences from the social environment as the causative forces in producing this unique stage. He described the adolescent as a person who is capable of abstract thinking, that is, at the beginning of this period the youth can make only cumbersome approaches to formal operations but by the end of the period he can make laws and generalizations and support them with proofs.<sup>11</sup>

The idea of adolescence as a specific period in man's life cycle has also been supported by social theorists like Lewin, Sebal, and Ausubel.

Lewin wrote that the child belonged to a specific group and the adult to another but the adolescent was a person who held a social position between and overlapping the adult and child groups. Because of this lack of 'belongingness' the adolescent was similar to a marginal member of an

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<sup>9</sup> R.J. Havinghurst, Developmental Tasks and Education (New York: Longmans Green, 1951, pp. 30-35.

<sup>10</sup> M. Strom, Needs of Adolescent Youth (Danville, Illinois: Interstate Printers and Publishers, Inc., 1963), pp. 77-140.

<sup>11</sup> I. Inhelder and J. Piaget, The Growth of Logical Thinking (New York: Basic Books, 1952), p. 334-350.



underprivileged minority group and demonstrated similar behaviors of emotional instability and sensitivity. Lewin also believed that when an individual moved from an old region to a new one, that is, from one group to another unfamiliar one, he could be expected to demonstrate indecisive and often contradictory behavior until he became familiar with the behavior which would best meet his needs in that new setting. He believed that the adolescent was in such a transitional position.<sup>12</sup>

Like Piaget, Ausubel has written that adolescence is a transitional period. He has stated that in North America, this transitional period is prolonged to the point where we have developed a group of anxious adolescents who have lost both their status and the self-esteem that goes with it.<sup>13</sup>

Hans Sebald has contended that in North America there is a wide gap between the adolescent and his parent. This gap has resulted from: a rapidly changing society where values held by many parents are not those held by society and are therefore inappropriate to pass on to their children; a technically advancing society where work ethics are no longer relevant from one generation to the next; an upwardly mobile society where lower class parental mores may not be appropriate for the upward mobile children.<sup>14</sup>

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<sup>12</sup> K. Lewin, Field Theory in Social Science (London: Tavistock Publications Ltd., 1952), pp. 135-145.

<sup>13</sup> D.A. Ausubel, Theories and Problems of Adolescent Behavior (New York: Grune and Stratton, 1954), pp. 57-67.

<sup>14</sup> H. Sebald, Adolescence: A Sociological Analysis (New York: Appleton-Century Crofts, 1968).

Kenniston has argued that youth finds it most difficult to adapt to a changing society.

They have outlived the social definition of childhood and not yet fully located in the world of commitments and are most immediately torn between the pulls of the past and the future.<sup>15</sup>

Research by Coleman and the Sherifs has tended to support the theory that adolescents are distinctively different from adults in terms of their value system. J. Coleman studied the values of adolescents across the United States and found that adolescents valued the star athlete while their parents valued the scholar.<sup>16</sup> The Sherifs observed that adolescent groups formulated rules and value systems different from adult standards. It was to these group norms that the adolescent was committed.<sup>17</sup>

In contrast, in a Canadian study by Elkin and Westley and in an American study by Hollingshead little difference was found between the value system of adolescents and their parents. These researchers have, therefore, questioned if in fact adolescence does represent a unique period.<sup>18,19</sup>

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<sup>15</sup> K. Kenniston, "Social Change and Youth in America", Youth: Change and Challenge, ed. E. Erikson (New York: Basic Books Inc., 1968), p. 169.

<sup>16</sup> J.C. Coleman, "The Adolescent Subculture and Academic Achievement", American Journal of Sociology, 65: 337-347, 1960.

<sup>17</sup> M. Sherif and C. Sherif, Reference Groups: Exploration into Conformity and Deviation of Adolescents (New York: Harper and Row publishers, 1961).

<sup>18</sup> F. Elkin and W. Westley, "The Myth of Adolescent Culture", American Sociological Review, 20: 680-684, 1955.

<sup>19</sup> A. Hollingshead, Elmtown's Youth (New York: John Wiley and Sons, 1949), p. 443.

Clay Brittain's study clarified this dilemma, to some degree. He found that adolescents sought their parents' values when they faced a difficult choice or one that pertained to their future. Adolescents conformed more to their peers' values when the choice involved social morés that were in cultural transitions, and when immediate consequences were anticipated. If, however, there were cross pressures, adolescents tried to avoid holding noticeably different views from their peers.<sup>20</sup>

Some doubt has also been cast on the theory that adolescence is a period of turmoil and a time for a painful breaking away from adults to gain independence. Elkin and Westley found that their youth population had close and open relationships with their parents.<sup>21</sup> Offer, Marcus, and Offer showed that adolescents felt a satisfaction with both themselves and their parents, independence was achieved gradually and with little or no disruption.<sup>22</sup> Bandura and Walker showed that none of their data supported the theory that adolescence was a time of 'storm and stress'.<sup>23</sup>

Eisenburg wrote about the adolescent in the following way:

In his effort he examines his parents from a more critical perspective and leans more to peer groups for his sense of belonging. If his relations with his parents have been soundly constructed during earlier years, and if they meet his doubt and criticism with sympathetic understanding, this temporary unsettling of his prior role as a child leads to a re-synthesis of his relations with them

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<sup>20</sup> C. Brittain, "Adolescent Choices and Parent-Peer Cross Pressures", American Sociological Review, 28: 385-391, 1963.

<sup>21</sup> F. Elkin and W. Westley, op, cit.

<sup>22</sup> D. Offer, D. Marcus and J. Offer. "A Longitudinal Study of Normal Adolescent Boys", American Journal of Psychiatry, 126: 921-924, 1970.

<sup>23</sup> A. Bandura, "The Stormy Decade: Fact or Fiction?", Psychology in the Schools, 1: 224, 1964.

on a firm and lasting basis. . . .Where the parent child relationship has been one of excessive hostility, the turmoil of adolescence may be prolonged and lead to failure of emancipation, rejection or isolation.<sup>24</sup>

### Depression

Descriptions of the clinical symptoms of depression have been used since the time of Hyppocrates, in the fourth century B.C.<sup>25</sup>

In the second century A.D., Plutarch described the depressed patient in the following manner:

He looks on himself as a man whom the Gods hate and pursue with their anger. A far worse lot is before him; he dares not employ any means of averting or of remedying the evil, lest he be found fighting against the Gods. The physicians, the consoling friend are driven away.<sup>26</sup>

In the nineteenth century Pinel offered the following description:

The symptoms generally comprehended by the term melancholia are taciturnity, a thoughtful pensive air, gloomy suspicions, and a love of solitude. Those traits, indeed, appear to distinguish the characters of some men otherwise in good health and frequently in prosperous circumstances. Nothing, however, can be more hideous than the melancholic brooding over his imaginary misfortunes.<sup>27</sup>

Much more recently, Beck portrayed the depressed person as having the following attributes:

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<sup>24</sup> L. Eisenburg, "A Developmental Approach", Children, 12: 135, 1965.

<sup>25</sup> A. Beck, Depression (New York: Harper and Row, 1967), pp. 3-4.

<sup>26</sup> I. Zilboorg, A History of Medical Psychology (New York: Norton and Co. Inc., 1941), p. 67.

<sup>27</sup> A. Beck, op. cit., p. 5.

- 1) A specific alteration of mood: sadness, loneliness, apathy.
- 2) A negative self-concept associated with self reproaches and self-blame.
- 3) Regressive and self-punitive wishes: desires to escape, hide or die.
- 4) Vegetative changes: anorexia, insomnia, loss of libido.
- 5) Changes in activity level: retardation or agitation.<sup>28</sup>

The use of the term depression has differed amongst authors. Some have used it to encompass a feeling state that the average person experiences at some stage in his life, a symptom of a disease, a disease itself, or a classification for disease entities.<sup>29</sup>

When the term depression has been used as a classification heading for other diseases no consensus has been reached as to what diseases should be placed under the term.<sup>30,31</sup>

TABLE I<sup>32</sup>  
METHODS OF DELINEATING DISEASE ENTITIES  
UNDER THE CLASSIFICATION OF DEPRESSION

DELINEATING FACTORS	DISEASE ENTITIES
1. internal or external cause	1. a) exogenous depression b) endogenous depression
2. reaction or lack of reaction to external events	2. a) reactive depression b) autonomous depression
3. predominant activity level	3. a) agitated depression b) retarded depression
4. reality orientation or lack	4. a) neurotic depression b) psychotic depression

<sup>28</sup> Ibid, p. 6.

<sup>29</sup> Ibid, p. 7.

<sup>30</sup> Ibid, p. 8.

<sup>31</sup> Ibid, p. 63.

<sup>32</sup> Ibid.

Some authors have viewed depression as a single clinical disorder. They have seen it as a continuum where a feeling state common to most people lies at the one end of the continuum and an incapacitating disease stage lies at the other end. With this viewpoint it becomes legitimate to talk of the momentary feeling of sadness as depression as well as the prolonged period of grief that prevents the individual from meeting his needs, or leads to his suicidal act. Persons supporting this theory have said that the difference in the depression is the degree to which it affects the individual thus the cause can be the same for all levels. Intervention is not required until the individual draws close to the end of the continuum.<sup>33</sup>

#### Causes of Depression

According to existentialists the depressed person is born with a pre-morbid personality that gives him the potential to develop depression. The pre-morbid personality values orderliness, and tries to meet his obligations in an exacting manner but is also very sensitive to guilt. Depression results when he feels he has fallen behind in his obligations or aspirations.<sup>34</sup>

Other theorists believe that family environment predisposes the individual to become manic-depressive. If the mother is the head of the family and the father is weak or is made to look so, and if the child is made responsible for gaining family prestige, the situation is ripe for that child to develop depression. These theorists have said that the interpersonal behavior of such a person is structured by the

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<sup>33</sup> Ibid

<sup>34</sup> H. Tallenbach, Melancholia (West Berlin: Springer, 1961) cited by A Beck, Depression (New York: Harper and Row, 1967), pp. 251-252.

belief that other people are either good or bad; no middle ground exists.<sup>35</sup>

Numerous studies have been carried out to identify a biological substrate of depression. Few of their findings have been replicated. Positive findings have, however, been consistently associated with sodium retention, changes in sleep electroencephalograms, and excessive levels of steroids. The latter has, however, been shown to be non-specific to depression.<sup>36</sup> Further biochemical studies have shown that a depletion in active norepinephrine at central adrenergic receptor sites results in depressed states of animals.<sup>37</sup>

For psychoanalytic theorists, depression is a reaction to loss of a real or perceived loved object - a person, a possession, a highly valued expectation, a previous state of self, role, or status. The loss is considered to deprive the ego, therefore, hostility towards the lost object results. If this hostility is not recognized and worked through it turns inward on the self and depression results.<sup>38,39,40</sup>

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<sup>35</sup> M.B. Cohen, G. Baker, R.A. Cohen, F. Fromm-Reichman, and E.V. Weigert, "An Intensive Study of Twelve Cases of Manic-Depressive Psychosis", Psychiatry, 17: 103, 1954.

<sup>36</sup> A. Beck, op, cit., pp. 125-153.

<sup>37</sup> J. Schildkraut, "The Catecholamine Hypothesis of Affective Disorders: A Review of Supporting Evidence", American Journal of Psychiatry, 122: 509-522, 1965.

<sup>38</sup> G.L. Engel, Psychological Development on Health and Disease (Philadelphia: Saunders, 1960), p. 274.

<sup>39</sup> J. Bowlby, "Grief and Mourning in Infancy and Early Childhood", Psycho-analytical Study of the Child, XV (New York: International Universities Press, 1960), p. 9.

<sup>40</sup> S. Freud, "Mourning and Melancholia", Collected Papers, XIV Standard Edition (Longon: Hogarth, 1949), pp. 152-173.

## Adolescence, a Time of Loss

Some authors have used the concept of loss to describe what happens to the adolescent and explain why he is vulnerable to depression.

Anna Freud has written that during adolescence, youth has to detach himself from his parents and his infantile objects, and displace these feelings to other persons and interests. This represents object loss and requires the work of mourning. If the youth does not work through the mourning, if he does not overtly express his feelings, if he turns his hostile feelings toward the lost object in on himself then depression may ensue.<sup>41</sup>

Kenniston has also accorded an important place to the idea of loss in adolescence. He sees the adolescent losing the warmth, love, spontaneity and imagination of childhood and being unable to replace these benefits or to foresee their replacements with any equal benefits in adolescence or adulthood.<sup>42</sup>

Mitchell has described the dilemma in a similar manner. Adulthood is a time when it is difficult to find work, or if work is available, it is not a reflection of the individual's creativity or motivation. The adolescent can therefore keenly experience the loss of childhood and see little replacement value for its joys and privileges, in adulthood.<sup>43</sup>

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<sup>41</sup> A. Freud, "Adolescence", The Psychoanalytical Study of the Child, XIII (New York: International Universities Press, 1958), p. 255.

<sup>42</sup> K. Kenniston, "Social Change and Youth in America", Youth: Change and Challenge, ed. E. Erickson (New York: Basic Books, Inc., 1968), p. 176.

<sup>43</sup> J. Mitchell, Adolescence: Some Critical Issues (Toronto: Rinehart and Winston of Canada, 1971), pp. 45-74.



Lindemann wrote that loss always leads to grief but does not, of necessity lead to depression. If the individual works through his grief, no pathology results. If significant others help the individual face the reality of the loss and supports him as he works through a realistic acceptance of the loss, his work is less difficult. If, however, the individual avoids or is unable to attain interaction with others, his ability to work through his grief is more difficult and depression can result.<sup>44</sup> Therefore, it may be said that an individual must have adequate skills in interpersonal relations to attain support during a time of loss.

#### Identification of the Depressed Person

Observation has usually been the first step in the diagnostic process. Although it may be considered the simplest and quickest method of screening a large group of people, objectivity and validity have been problematic. The question has been asked whether the observing and thus evaluating person has known what behavior to watch for, that is, what behavior was significant, and what behavior could be overlooked.<sup>45</sup> In trying to distinguish the depressed adolescent, people have usually looked for clinical signs and symptoms of depression but as Dr. Krakowski has warned, the depressed adolescent makes it difficult for others to observe his depression by masking the usual signs with a façade of jocularity.<sup>46</sup>

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<sup>44</sup> E. Lindemann, "Symptomatology and Management of Acute Grief", American Journal of Psychiatry, 101: 141-144, 1944.

<sup>45</sup> W.A. Mehrens and I.J. Lehmann, Measurement and Evaluation in Educational Psychology, (New York: Holt, Rinehardt and Winston, Inc., 1973) p. 519.

<sup>46</sup> A. Krakowski, "Depressive Reactions of Children and Adolescents", Psychosomatics, 11: 431, 1970.

In the past if a person's behavior suggested that he was maladjusted, a trained professional usually interviewed him and/or gave him psychological tests. Interviews, however, have been notoriously dependent on the theoretical background or personal beliefs of the interviewer.<sup>47,48,49</sup>

If projective tests such as the Rorschach or Thematic Apperception Test were used, highly qualified professionals were needed to both administer and interpret the tests; even then the reliability of such tests has been questioned. Certainly the cost of time to both the testor and the testee has been recognized.<sup>50,51</sup>

The Minnesota Multi-Phasic Inventory's D Scale has also been used to identify the depressed person. Although the subject rates his own behavior, the format of the test is such that a qualified person is needed to administer and score it. To benefit from the reported reliability of the test, the complete MMPI has to be administered. Researchers have found this cumbersome. Evaluators of the MMPI have also suggested that it is sensitive to response sets.<sup>52</sup>

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<sup>47</sup> A. Beck, op, cit., pp. 173-175

<sup>48</sup> W.A. Mehrens and I.J. Lehman, Measurement and Evaluation in Educational Psychology (New York: Holt, Rinehardt and Winston, Inc., 1973), p. 519.

<sup>49</sup> O.K. Buro (Ed.) The Seventh Mental Measurement's Yearbook, Vol. 1 (Highland Park, New Jersey: The Gryphen Press, 1972).

<sup>50</sup> Ibid, pp. 422-449.

<sup>51</sup> Ibid, pp. 452-462.

<sup>52</sup> Ibid., pp. 223-266.

Less time has been required to administer, complete and score structural self-rating inventories of depression. Less skilled persons have been used to administer them but, the reliability and validity of these tests has varied. Examples of these types of tests are as follows: Jung's Self-Rating Depression Scale, Depression Adjective Check List, Beck's Inventory of Depression.<sup>53,54,55</sup>

### Interpersonal Behavior

Fritz Heider has described interpersonal behavior as consisting of how man feels or thinks about another person, how he perceives the other person and what he does to him, what he expects the other person to do or think, and how he reacts to the actions of the other person.<sup>56</sup>

Leary has defined it as behavior that is related overtly, ethically, or symbolically to another human being, real, collective, or imaginary. He felt that interpersonal behavior was the unique human aspect of man.<sup>57</sup>

Studies of man's interpersonal behavior have been done since early times according to Heider. He wrote that myth, folk-lore,

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<sup>53</sup> A. Beck, Depression (New York: Harper and Row, publisher, 1967), pp. 188-190.

<sup>54</sup> O.K. Buro (ed.) The Seventh Mental Measurement's Yearbook, Vol. 1 (Highland Park, New Jersey: The Gryphen Press, 1972), pp. 320-321.

<sup>55</sup> Ibid., pp. 132-134.

<sup>56</sup> Ibid., pp. 15-19.

<sup>57</sup> F. Leary, Interpersonal Diagnosis of Personality (New York: The Ronald Press Co., 1967), p. 4.

novels, poems and plays have been some of the best recordings of man's interpersonal behavior to date.<sup>58</sup> He also stated that there is a need to study man's interaction more scientifically and that to do this in a comprehensive manner the following areas need to be analyzed:

1. a person's life space,
2. his perception of his environment and the other person in it,
3. his ability to cause change,
4. his actual attempt to cause change,
5. his wish to cause change,
6. his sufferings from the effect of environmental change,
7. his feelings towards the other person,
8. the effect of the other person's allegiance to other person's or things,
9. his feelings of ought or should.<sup>59</sup>

Leary has asserted that the functional core of human behavior is interpersonal and that personality concepts have to be defined along an adjustment continuum which includes both normal and abnormal reactions.<sup>60</sup> To understand interpersonal behavior attention must be given to four areas:

1. perceived behavior,
2. reaction of other people to the individual's behavior,
3. behavior of the individual over time,
4. cultural and environmental influences on the individual's behavior.

Leary has explained that perceived behavior should be studied at five levels. The basic level is that of public communication which consists of the interpersonal impact of the subject's overt behavior on others, as rated by others. The second level, conscious description, is how the subject chooses to present himself and his views of the world;

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<sup>58</sup> F. Heider, The Psychology of Interpersonal Behavior (New York: John Wiley and Sons, Inc., 1958), pp. 2-3.

<sup>59</sup> Ibid., pp. 15-19.

<sup>60</sup> Ibid., p. 56.

because it is his interpretation of his behavior, consensual accuracy has no bearing on the rating; information on the third level, private symbolization, can be sought from projective tests and indirect fantasy materials; the unexpressed unconscious is the next level and it consists of the significantly-avoided patterns of behavior of the subject. The fifth level called values, is defined by the subject's choice of interpersonal traits that he holds to be good, proper and right.<sup>61</sup>

Leary maintained that all interpersonal behavior involves more than one person, thus the second area of study should include (a) the reflex way people tailor their responses to others, (b) the automatic ways they force others to react to them.<sup>62</sup> He has also suggested that there are inconsistencies in the same level of behavior over a period of time, interpersonal behavior should thus be measured over a period of time to gain a more accurate analysis of the behavior.<sup>63</sup> The fourth area of study Leary has been concerned with is the effect of cultural and environmental factors on a person's interpersonal behaviors, thus research should identify the environment in which the subjects act and the person with whom the subject is interacting, as this can alter the subject's interpersonal behavior.<sup>64</sup>

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<sup>61</sup> Ibid, pp. 76-81.

<sup>62</sup> Ibid., p. 83.

<sup>63</sup> Ibid, p. 243.

<sup>64</sup> Ibid.

## Studies of Adolescent Interpersonal Behavior

A number of studies of the interpersonal behavior of adolescents have been done recently. In 1965 Meisner used the direct question method to gain data on the interaction of adolescents with their parents.<sup>65</sup> In the following year, also using direct questioning, Douvan and Adelson studied the interpersonal behavior of adolescent girls and concluded that girls' development in the interpersonal sphere was the basis for their adolescent behavior.<sup>66</sup> In 1970 Coleman studied the development of interpersonal behavior in adolescents using the result of projective tests. He found that there were changes in behavior at different ages within the adolescent period.<sup>67</sup>

## Studies of Patient's Interpersonal Behavior

Early in the history of psychiatry, H.S. Sullivan used the interview method to study the interpersonal behavior of emotionally ill patients. He concentrated on discovering what the unique interpersonal behavior patterns of patients suffering from a variety of personality disorders were. He believed that scientific study had to be the study of interpersonal behavior.<sup>68</sup>

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<sup>65</sup> W.W. Meisner, "Parental Interaction of the Adolescent Boy", Journal of Genetic Psychology, 107: 225, 1965.

<sup>66</sup> E. Douvan and J. Adelson, The Adolescent Experience (New York: John Wiley and Sons, Inc., 1966).

<sup>67</sup> J.C. Coleman, "The Perception of Interpersonal Relationships During Adolescence", British Journal of Educational Psychology, 40: 253, 1970.

<sup>68</sup> H.S. Sullivan, "Tensions Interpersonal and International: A Psychiatrist's View". in Tensions that Cause Woe, ed., H. Cantril (Urbana, Illinois: University of Illinois Press, 1950), p. 92.

In 1967 a disciple of Sullivan's, P. Mullahy wrote that anxiety was the central cause of various kinds or categories of mental illness, and that anxiety originated and operated only in the interpersonal context, it "could not occur in the absence of inadequate interpersonal relations".<sup>69</sup> He believed, therefore, that psychiatry was circumscribed by the processes which involve or go on between people.<sup>70</sup>

#### A Study of Depressed Women's Interpersonal Behavior

In 1970 Paykel et al were looking for a reliable means of identifying improvement in the depressed state of women patients. Using a semi-structured interview based on a developed rating scale they found that five dimensions of social adjustment could identify improvement in their patients. One dimension measured the work performance of the patient, the other four dimensions measured various aspects of their interpersonal relations - interpersonal friction, inhibited communication, submissive dependency and family attachments.

#### Summary

The literature has suggested that adolescents may be particularly vulnerable to depression. Adolescence has been represented as a period during which youth has lost his status and privileges of childhood. This loss results in grief, and grief unless worked through to a realistic

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<sup>69</sup> P. Mullahy, A Study of Interpersonal Relations (New York: Science House, 1967), p. xx.

<sup>70</sup> Ibid.

acceptance becomes depression. The adolescent could work through his grief with the help of friends or family; the person without this help, however, would find it more difficult to do so. The adolescent who finds it difficult to relate with others may be more prone to depression. Yet, interpersonal behavior patterns have not been used as a means of detecting depression in adolescents.



## CHAPTER 3

### METHODOLOGY

#### Study Population

The study population consisted of one hundred and two adolescents drawn from a residential centre and four Catholic high schools in Greater Vancouver.

Adolescents at the treatment centre represented an available population of adolescents with emotional problems. It was postulated that among this group there would be a high potential for some adolescents to be depressed.

The remaining adolescent population was made up of randomly selected youths in four Catholic high schools. Data were collected in these high schools as their administrators were amenable to having this type of research done in their schools. Four schools out of a possible eight were sampled to gain a total population of over one hundred. On suggestion of the school administration, high schools in Burnaby, North Vancouver, East Vancouver and Point Grey were used in order that most socio-economic groups would be represented. It was recognized that the very poor child had less likelihood of attending a Catholic school in British Columbia as tuition fees are required.

#### Selection of Population from the Treatment Centre

Thirty-nine adolescents attended the treatment centre during the period of November fourteen, 1972 to February one, 1973 when the research took place; of those, twenty-five participated in the study. Written consent had been obtained from the acting administrator of the treatment centre to ask each of the 39 students to be part of the research project.

Thirty seven were approached to participate in the project. Two were ruled out on the grounds that they had previously participated in the pre-test. Nine adolescents chose not to take part in the study. Three adolescents were unable to complete the inventories as they were unable to concentrate for the required period of time.

See Appendix A for information on the philosophy of the Treatment Centre.

### Selection of the Population from the High Schools

A total of ninety-two adolescents were randomly selected from the alphabetical school lists of four high schools and asked to participate in the study; of those seventy-five took part in the final study. Written consent had been obtained from the Catholic School administration to approach the principals of the Catholic high schools in Greater Vancouver to ask if their students might participate in the study. Four principals were visited and the research was explained to them. Although one principal asked that his students not participate, another principal whose school was in the same area consented. The randomly selected students were approached about participating. One student refused. Parental or guardian consent was sought for the ninety-one students, who indicated a willingness to participate in the study. (A copy of the consent letter is found in Appendix B). Nine consent letters were not returned by the day the inventories were scheduled to be answered. Five adolescents who had written consent were absent on the day the research took place in their high school.

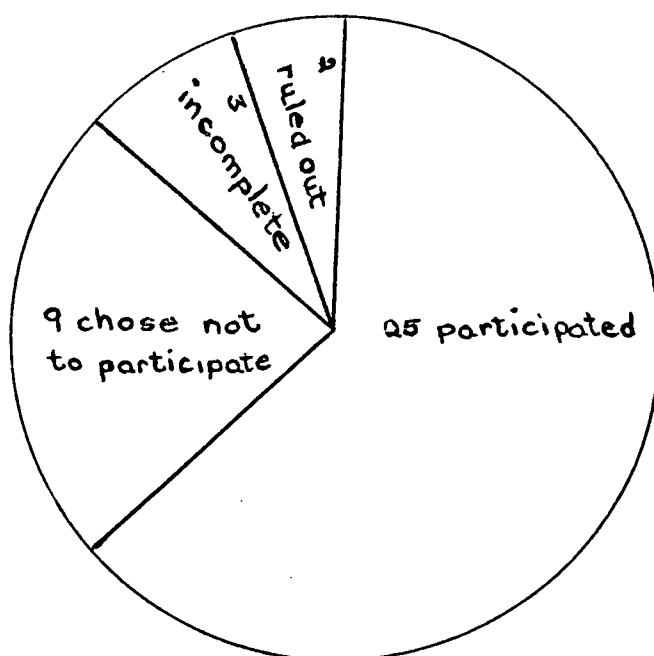


FIGURE 1

SELECTION OF THE POPULATION FROM THE TREATMENT CENTRE

NOVEMBER 14, 1972 - FEBRUARY 1, 1973

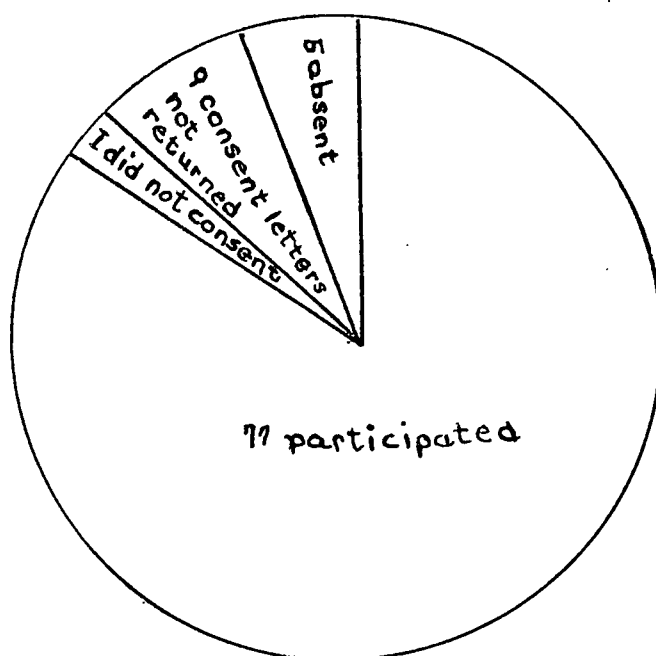


FIGURE 2

SELECTION OF THE POPULATION FROM RANDOMLY SELECTED CATHOLIC HIGH SCHOOL STUDENTS JANUARY 15, 1973 to MARCH 14, 1973

## Instruments

In this study self report inventories were used to obtain information on adolescents' feelings and interpersonal behaviors. The instruments used were Beck's Depression Inventory and McNair and Lorr's Interpersonal Behavior Inventory, adapted by the researcher for an adolescent population. These tools were selected on the grounds that they seemed well suited to the purpose of the study; they offered a means of collecting data in a standardized way; and they could be administered by someone less qualified than a clinical psychiatrist or psychologist. Scoring could be done and normative values might be available with which to make valid comparisons between the subjects of this research and those of others. Moreover, information could be quickly obtained from a large number of respondents.

### Beck's Depression Inventory

This inventory consists of items drawn from systematic observations and recordings of attitudes and symptoms of depressed patients that are consistent with descriptions of depression found in the literature. It was designed to identify the depressed person. Normative scores were established to distinguish between low, moderate and high levels of depression. These were 0-13, 14-25, and 25 and over, respectively.

In the inventory characteristic attitudes and symptoms were grouped into twenty-one categories: sadness, pessimism, sense of failure, dissatisfaction, guilt, expectation of punishment, self-dislike, self-accusation, suicidal ideas, crying, irritability, social withdrawal, indecisiveness, body image change, work retardation, insomnia, fatigability,

anorexia, weight loss, somatic pre-occupation, loss of libido. These categories became questions one through to twenty-one, respectively. Each question then consisted of a graded series of four to five self-evaluative statements. Numerical values from zero to three were assigned to each statement to indicate the level of severity of the symptom. In many questions there were two alternative statements of equal value presented. Details of the inventory can be found in Appendix C.

In developing the test Beck subjected it to various statistical checks. An item analysis of 606 cases showed that the categories of depression correlated positively with the total depression score (range .31-.68). These were all significant at the .001 level. Pearson's  $r$  between the odd and even categories was computed and yielded a reliability coefficient of .86; with a Spearman Brown Correction, this coefficient rose to .93. The test was administered to thirty-eight patients at two different times. Each time a clinical estimate of the depth of depression was made by a psychiatrist. The change in the scores on the inventory paralleled the changes in clinical ratings of the depth of depression. The Kruskal-Wallis One-Way Analysis of Variance by Ranks was used to evaluate the statistical significance of the differences between the mean scores of each level of depression. The  $p$ -value of these differences was  $< 0.001$ .<sup>1</sup>

Similar results were found when the inventory was used in England by Metcalfe and Goldman. Correlations between scores on the Depression Inventory and clinical judgments concerning depth of depression was significant at the 0.001 level in studies done by Beck and replicated by Metcalfe. A

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<sup>1</sup> A. Beck, Depression (New York: Harper and Row, 1967), pp. 193-200.

higher correlation existed between the Depression Inventory score and clinical ratings of depression, than existed between the clinical ratings and scores on the D scale of the MMPI. When the Depression Inventory scores were correlated with other tests for depression the following correlations were found:

1. Depression Inventory with MMPI D Scale  $r = .75$
2.       "               "       with Hamilton Rating Scale  $r = .75$
3.       "               "       with Lubins Depression Adjective Check List  $r = .66$ .<sup>2</sup>

#### McNair and Lorr's Interpersonal Behavior Inventory

The final revised edition of this inventory consists of 140 statements covering fifteen behavior categories that were selected from the literature: dominance, competition, aggression, mistrust, detachment, inhibition, submissiveness, succorance, abasement, deference, agreeableness, nurturance, affection, sociability, exhibition. Each statement is rated according to the frequency that it's behavior is exhibited; not at all, occasionally, usually, and very often. Three experiments were designed and multiple factor analysis was done to test if these behavior categories existed. In the first experiment 163 psychologists and psychiatrists in private and public practice used the inventory to describe a total of 346 patients as well as 86 normal individuals. It was then used by 254 seniors and graduates in psychology to describe 290 normal men and women. Finally, a group of therapists employed the inventory to rate the behavior

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<sup>2</sup> Ibid.

of sixty neurotic patients. The hypotheses was supported.<sup>3,4,5</sup>

#### Pre-tests by the Researcher

The purpose of the pre-tests was two-fold:

1. to determine whether adolescents aged thirteen to seventeen could use the inventories to rate their own feelings and behavior,
2. to gain expertise in administering the inventories.

It was discovered that no changes were required in Beck's Depression Inventory but modifications were needed in the wording of McNair and Lorr's Interpersonal Behavior Inventory and the grouping of questions. Adaptations to the inventory were made and pre-tested until the inventory could be understood and used by the youngest adolescent in the study. Details of these pre-tests are in Appendix C and D.

A split half, odd-even check for reliability using Pearson's Product Coefficient of Correlation, was used to discover the reliability of the finally adapted interpersonal behavior inventory. It revealed a correlation of .96.

This adapted form of McNair and Lorr's Interpersonal Behavior Inventory was then sent to Dr. Lorr. He wrote:

Your revisions seem very plausible and reasonable. The major questions one might have is whether your subjects will tend to answer in a socially desirable direction, otherwise you have converted the statements in a commendable way.<sup>6</sup>

<sup>3</sup> M. Lorr and D. McNair, "An Interpersonal Behavior Circle", Journal of Abnormal and Social Psychology, 67: 68-75, 1963.

<sup>4</sup> M. Lorr and D. McNair, "Expansion of the Interpersonal Behavior Circle", Journal of Personality and Social Psychology, 2: 823-883, 1965.

<sup>5</sup> M. Lorr and A. Suziedelis, "The Interpersonal Behavior Inventory", British Journal of Social and Clinical Psychology, 8: 124: 132, 1969.

<sup>6</sup> Based on personal correspondence between Dr. C.M. Lorr, Professor, Department of Psychology, Catholic University and the writer.



It was decided that for the purpose of this study the possibility of biased answers due to self-report would be a limitation of the study.

#### Adapted Interpersonal Behavior Inventory AIBI

The AIBI resulted from changes made in McNair and Lorr's Interpersonal Behavior Inventory. The AIBI contains three sections: A, B, and C. Sections A and B contain fifty statements; Section C contains forty. Each statement can be rated as: not all, all, occasionally, usually, all the time. The values for these replies are one to four respectively. Details of the AIBI can be found in Appendix D.

#### Administration of the Inventories

Two-hour periods were scheduled for the researcher to administer the inventories to groups of adolescents in both the treatment centre and the high schools.

Data were collected from the treatment centre during five two-hour periods. Four periods were allotted for completion of the inventories by students in each of the four residences in the treatment centre; a fifth period was established to allow later admissions to the centre, the opportunity to participate in the research.

Data from the high schools were collected in one two-hour period spent in each of the four high schools.

It was explained to each group that during the next two hours there were two inventories to be answered; one concerning how they felt and one about how they thought they usually acted towards other people. They were told that the answers to these questions might be useful in helping in the early treatment of teenagers with problems. They were reminded that

their answers were confidential and that they were free to withdraw from the study at any time. Inability to complete the questionnaires would not be reported to the teachers; it would simply mean that their set of incomplete answers would not be used for the study. A set of four coded O.M.R. computer cards and a medium soft pencil with eraser were distributed to each student. Instructions on how to use the cards were given and this was then demonstrated. The researcher was available to assist with problems using these cards, as they arose.

First the Beck's Depression Inventory was distributed to each student. Directions were given on how to answer the inventory and demonstrated. When it was completed the Adapted Interpersonal Behavior Inventory was handed out and the same procedure of explanation and demonstration followed. To minimize the possibility that subjects would answer in a socially desirable way, they were ensured that their answers were anonymous. To further motivate the subjects to answer truthfully, they were told that little had been written about how adolescents viewed their own feelings, and interactions with others and that it was hoped that by finding out this information, nurses could help other teenagers with problems in these areas.

Exactly the same procedure was followed in the high school groups as was used with the treatment centre groups.

The researcher was the only person who gave the directions and answered questions in all the groups.

## CHAPTER 4

### DATA ANALYSIS AND RESULTS

Data was analyzed to: categorize adolescents into three groups; determine differences in interpersonal behavior group mean scores; discover interpersonal behavioral correlates of depression; identify interpersonal behavior categories that can distinguish the highly depressed, moderately depressed and non-depressed adolescent.

#### Identification of Non-Depressed, Moderately Depressed and Highly Depressed Adolescents Using a Depression Inventory

The first step in the treatment of the data was to categorize adolescents into three groups on the basis of their depression inventory scores: non-depressed, moderately depressed, high depressed. A value for each reply on the Depression Inventory was obtained by using a specifically designed computer program SCALER (See Appendix C for values). These values were aggregated to obtain a score for each subject. Those with scores in the range of 0-3 were called non-depressed, those in the range of 14-24 were called moderately depressed and those who gained 25 or above were identified as highly depressed (Table 2).

#### Differences in Interpersonal Behavior Scores of Non-Depressed, Moderately Depressed, Highly Depressed Adolescents

A value for each reply on the AIBI was obtained using an extension of the SCALER program (see Appendix D for values). A score was then computed for each subject, for each of the fifteen behavior categories in the AIBI. Next, the UBC program ANALYSIS OF VARIANCE was used to calculate mean scores and standard deviations (Table 3). Analysis of variance was

TABLE 2  
 NUMBER OF ADOLESCENTS CLASSIFIED AS  
 NON-DEPRESSED, MODERATELY DEPRESSED, HIGHLY DEPRESSED

	NON-DEPRESSED 0-13	MODERATELY DEPRESSED 14-24	HIGHLY DEPRESSED 25 +
n =	48	38	16
total =	102		

TABLE 3  
 SCORES OF NON DEPRESSED, MODERATELY DEPRESSED AND HIGHLY DEPRESSED GROUPS  
 ON 15 INTERPERSONAL BEHAVIOR CATEGORIES

INTERPERSONAL BEHAVIORS	NON-DEPRESSED		MODERATELY DEPRESSED		HIGHLY DEPRESSED	
	Mean Score	STRD Dev.	Mean Score	STRD Dev.	Mean Score	STRD. Dev.
Dominance	18.250	2.7637	18.947	3.2378	16.375	2.9637
Competition	19.812	4.0720	22.158	4.0305	22.250	4.7539
Aggression	17.979	3.5639	19.684	3.9600	22.437	5.6800
Mistrust	17.625	3.6532	20.816	3.8484	24.375	4.2249
Detachment	20.625	3.6063	21.395	4.2141	28.313	6.7796
Inhibition	15.208	3.3260	16.105	3.9235	21.062	5.9830
Submission	20.375	3.2917	21.026	3.6279	24.312	5.4738
Succorance	19.917	3.5719	22.263	4.1374	23.688	2.1515
Abasement	17.021	3.3294	18.237	4.2199	21.062	4.2185
Deference	24.979	3.6987	23.553	3.6517	23.000	7.1461
Agreeableness	24.375	3.2592	23.132	2.5698	21.750	3.8210
Nurturance	26.813	4.0668	25.974	4.0100	26.312	4.6147
Affection	19.583	3.7634	18.211	2.5697	17.313	4.3162
Sociability	24.833	4.6646	26.184	4.5432	22.00	5.0200
Exhibition	15.167	3.8278	17.263	3.5082	14.812	3.2087

N = 102

df = 101

then carried out to discover if there was a difference in the interpersonal behavior category mean scores of non-depressed, moderately depressed and highly depressed adolescents that was greater than chance.

It was found that non-depressed, moderately depressed, and highly depressed adolescents had significantly different mean scores in thirteen out of fifteen interpersonal behavior categories, namely:

dominance	succorance
aggression	abasement
mistrust	agreeableness
competition	affection
detachment	sociability
inhibition	exhibition
submission	

In all thirteen cases the F ratio was greater than 3.09 which was the critical value of F at .05 with two degrees of freedom for the greater mean square and one hundred degrees of freedom for the lesser mean square. The F ratio was highly significant for: mistrust, detachment, inhibition. The chance probability of obtaining the observed F value for the thirteen interpersonal behavior categories was less than .05.

Non-depressed, moderately depressed and highly depressed adolescents did not have significantly different mean scores on: deference, nurturance. For these categories the F ratio was less than 3.09 and the F probability was greater than .05 (Table 4).

This analysis rejects the null hypothesis number one and shows that there is a significant difference between the interpersonal behavior scores of non-depressed, moderately depressed and highly depressed adolescents. This suggests that non-depressed, moderately depressed, and highly depressed adolescents may interact differently with others in thirteen areas: dominance, competition, mistrust, aggression, detachment, inhibition, submission, succorance, abasement, agreeableness, affection, sociability, exhibition.

TABLE 4  
ANALYSIS OF VARIANCE  
INTERPERSONAL BEHAVIOR CATEGORIES OF NON, MODERATELY DEPRESSED  
AND HIGHLY DEPRESSED ADOLESCENTS

BEHAVIOR CATEGORIES	F RATIO $\bar{c}$ D.F = 2/99	CHANCE PROBABILITY OF F
Dominance	4.2033	.0175
Competition	4.1213	.0188
Aggression	7.3554	.0012
Mistrust	20.6336	.0000
Detachment	18.7309	.0000
Inhibition	12.7495	.0000
Submission	6.4609	.0025
Succorance	8.2705	.0006
Abasement	6.7411	.0020
Deference	1.7616	.1750
Agreeableness	4.6748	.0115
Nurturance	0.4432	.6488
Affection	3.2184	.0431
Sociability	4.5154	.0132
Exhibition	4.3970	.0147

N = 102

df = 2,99

Critical value of F at .05 level = 3.09

## Interpersonal Behavior Correlates of Depression

To discover if there were interpersonal behavior categories that significantly correlated with depression (Hypothesis II) simple regression analysis and multiple stepwise regression analysis was carried out using UBC computer program TRIP, subroutines INMSDC, SIMREG and STPREG.

### Simple Regression Analysis

This was computed to discover if there was a zero correlation between depression scores and each of the interpersonal behavior category scores. If a zero correlation existed between the two variables it was interpreted to mean that no systematic relation to each other existed.

It was found that a correlation significantly different from 0 existed between depression scores and scores on ten different interpersonal behavior categories. The F probability was less than .05 for all ten cases. High scores on the Depression Inventory significantly correlated with high scores on the following interpersonal behavior categories:

1. competition
2. aggression
3. mistrust
4. detachment
5. inhibition
6. submission
7. succorance
8. abasement (Table 5)

High scores on the depression inventory correlated with low scores on the interpersonal behavior categories:

9. agreeableness
10. affection

A correlation between depression scores and scores on five different interpersonal behavior categories was not significantly different from 0.

These were:

1. exhibition
2. dominance
3. sociability
4. exhibition
5. nurturance (Table 6)



TABLE 5  
SIMPLE REGRESSION ANALYSIS, SIGNIFICANT PREDICTORS

CRITERION VARIABLE	PREDICTORS	CORRELATION COEFFICIENT	F RATIO	F PROBABILITY
Depression	Mistrust	1.212	64.49	.0000
	Detachment	.8560	34.90	.0000
	Inhibition	.8790	26.07	.0000
	Succorance	.9913	24.29	.0000
	Submissiveness	.9310	22.76	.0000
	Aggression	.7997	19.00	.0001
	Abasement	.7991	15.02	.0003
	Competition	.5692	8.573	.0043
	Agreeableness	- .7208	7.714	.0065
	Affection	- .5835	5.980	.0155

TABLE 6  
SIMPLE REGRESSION ANALYSIS, NON SIGNIFICANT PREDICTORS

CRITERION VARIABLE	PREDICTORS	CORRELATION COEFFICIENT	F RATIO	F PROBABILITY
Depression	Dominance	- .3835	1.869	.1711
	Sociability	- .2221	1.597	.2139
	Deference	- .2344	1.437	.2316
	Exhibition	.1906	.6762	.4180
	Nurturance	- .1333	.3984	.5367

This analysis rejects the null hypothesis and shows that there is a significant correlation between depression scores and interpersonal behavior category scores on competition, aggression, mistrust, detachment, inhibition, submission, succorance, abasement, agreeableness and affection. This is a positive correlation for the first eight categories and a negative correlation for the remaining two.

The findings of the regression analysis, therefore predict that an adolescent who shows frequent interpersonal behaviors classified under competition, aggression, mistrust, detachment, inhibition, submission, succorance and abasement and rare interpersonal behavior classified under agreeableness and affection, may be depressed.

#### Multiple Regression Analysis

Given that the simple regression analysis indicated that there were interpersonal behavior categories significantly correlated with depression, the more sophisticated multiple step-wise regression analysis was carried out. This was computed to discover which predictors (interpersonal behavior categories) had a significantly different correlation than 0, with depression, when intercorrelation of the interpersonal behavior categories were considered (Table 7).

This analysis showed that there was a correlation significantly different from 0, between depression scores and four interpersonal behavior categories. There was a positive correlation between high scores in depression and high scores in: mistrust, competition, succorance. There was a negative correlation between high scores in depression and high scores in dominance. The F probability for these observations was less than .05 (Table 8).

TABLE 7  
MULTIPLE REGRESSION ANALYSIS  
CORRELATION BETWEEN INTERPERSONAL BEHAVIOR CATEGORIES

	DOMINANCE	COMPETITION	AGGRESSION	MISTRUST	DETACHMENT	INHIBITION	SUBMISSION	SUCCORANCE	ABASEMENT	DEFERENCE	AGREEABLENESS	NURTURANCE	AFFECTION	SOCIABILITY	EXHIBITION
Dominance	1.00														
Competition	+.592	1.00													
Aggression	+.424	.432	1.00												
Mistrust	+.137	.168	.366	1.00											
Detachment	-.807	.938	.240	.487	1.00										
Inhibition	-.273	-.184	-.225	.366	.583	1.00									
Submission	-.212	.552	-.965	.304	.410	.461	1.00								
Succorance	+.319	.346	.258	.366	.871	.674	.251	1.00							
Abasement	-.900	.180	-.106	.262	.184	.340	.507	-.368	1.00						
Deference	.144	.331	-.148	-.825	.235	.762	.448	.110	.447	1.00					
Agreeableness	-.406	.347	-.396	-.116	-.320	-.664	.156	-.411	.321	.501	1.00				
Nurturance	.208	-.966	-.226	.382	-.344	.198	.225	-.148	.432	.280	.523	1.00			
Affection	.279	.998	-.223	-.204	-.296	-.123	.178	.119	.309	.345	.555	.567	1.00		
Sociability	.205	.248	.464	-.119	-.425	-.436	-.561	.301	.144	.192	.359	.414	.545	1.00	
Exhibition	.520	.607	.409	.141	-.189	-.311	-.324	.448	.138	.130	.599	-.414	.249	.411	1.00

TABLE 8  
MULTIPLE STEP-WISE REGRESSION ANALYSIS  
SIGNIFICANT PREDICATORS

INDEPENDENT VARIABLES	CORRELATION COEFFICIENT	F RATIO	F PROB
Mistrust	.9210	32.2510	.0000
Dominance	-.9519	15.0191	.0003
Competition	.5233	7.8903	.0060
Succorance	.4209	4.5941	.0322

The addition of the other eleven interpersonal behavior category scores did not significantly improve the prediction of the depression scores. That is, when the correlations between mistrust, competition, succorance, dominance and the eleven remaining interpersonal behavior categories was eliminated, the F probability was greater than .05 (Table 9).

This analysis rejects the null hypothesis number two and shows that there is a significant correlation between depression and four interpersonal behavior categories. It suggests that we may be able to predict that an adolescent is depressed if he portrays frequent interpersonal behavior classified as mistrust, competition, succorance, and rare interpersonal behavior classified as dominance.

#### Interpersonal Behavior Categories that Distinguish Between Non-Depressed, Moderately Depressed and Highly Depressed Adolescents

To discover and isolate the interpersonal behavior categories which best distinguish between whether an adolescent is non-depressed, moderately depressed or highly depressed, the UBC computer program STEP-WISE DISCRIMINANT ANALYSIS was used.

This program performs a multiple discriminant analysis in a step-wise manner. At each step, one variable is entered into the set of discriminating variables. The variable entered is selected because it holds the least F probability value. Only variables with an F probability less than .05 are entered as discriminators.

Four variables (ie. four interpersonal behavior categories) were selected that could classify adolescents as non-depressed, moderately depressed and highly depressed. They were: mistrust, detachment, dominance, competition (Table 10).

TABLE 9  
MULTIPLE STEP-WISE REGRESSION ANALYSIS  
NON-SIGNIFICANT PREDICATORS

INDEPENDENT VARIABLES	PARTIAL CORRELATION WITH SIGNIFICANT PREDICATORS	UNEXPLAINED VARIANCE	F PROB
Detachment	.1799	.6123	.0727
Aggression	.1604	.6274	.1104
Inhibition	.1595	.6293	.1125
Agreeableness	.1412	.9322	.1616
Affection	.1325	.8749	.1900
Submission	.0972	.6836	.3436
Deference	.0964	.8705	.3475
Exhibition	.0866	.5223	.4011
Nurturance	.0267	.9759	.7830
Sociability	.0180	.8707	.8373
Abasement	.0122	.7147	.8723

TABLE 10  
DISCRIMINANT ANALYSIS  
VARIABLES TO INCLUDE AS DISCRIMINATORS

VARIABLES	F PROB
Mistrust	.0006
Detachment	.0043
Competition	.0281
Dominance	.0052



The other eleven categories of interpersonal behavior did not significantly increase the likelihood of classifying the adolescents correctly (Table 11). Once mistrust, detachment, dominance and competition had been selected, their F probability was greater than .05 (Table 12).

When only the four behavior categories were used, 58.8% of the adolescents could be correctly classified as non-depressed, moderately depressed or highly depressed (Table 13).

This analysis rejected the null hypotheses and showed that mistrust, detachment, dominance and competition can be used to distinguish if an adolescent is non-depressed, moderately depressed or highly depressed. Difficulty arose in the distinction of adolescents whos Depression Inventory or AIBI scores neared the cut off score between groups. Two factors may explain this. A standard error of measurement existed for both the Depression Inventory scores and each of the Interpersonal Behavior Category scores as shown in Appendix C and D. The other explanation complementary to this was that the scores tended to flow on a continuum thus scores close to any cut off point were naturally difficult to differentiate from one another. These findings, therefore, tend to support the theoretical assumption that depression falls along a continuum.

TABLE 11  
DISCRIMINANT ANALYSIS  
VARIABLES TO EXCLUDE AS DISCRIMINATORS

VARIABLES	F PROB
Aggression	.2210
Inhibition	.7273
Submission	.8953
Succorance	.2432
Abasement	.6670
Deference	.0732
Agreeableness	.1490
Nurturance	.6942
Affection	.3017
Sociability	.6825
Exhibition	.5946

TABLE 12  
DISCRIMINANT ANALYSIS  
STEP-WISE SELECTION OF  
VARIABLES TO BE ENTERED

VARIABLE	F PROBE BEFORE VARIABLES SELECTED	F PROB AFTER 1 VARIABLE SELECTED	F PROB AFTER 2 VARIABLES SELECTED	F PROB AFTER 3 VARIABLES SELECTED	F PROB AFTER 4 VARIABLES SELECTED
Donimance	.0175	.0078	.0329	----	----
Competition	.0188	.1904	.1918	.0281	----
Aggression	.0012	.3834	.5415	.0909	.2210
Mistrust	.0000	----	----	----	----
Detachment	.0000	.0007	----	----	----
Inhibition	.0000	.0120	.4983	.8997	.7273
Submission	.0025	.1587	.8069	.9863	.8953
Succorance	.0006	.2505	.2193	.0854	.2432
Abasement	.0020	.1827	.3111	.3811	.6670
Deference	.1755	.5006	.1894	.3637	.0732
Agreeableness	.0115	.1540	.1526	.1715	.1490
Nurturance	.6480	.6076	.5753	.5760	.6942
Affection	.0431	.5538	.4324	.4160	.3017
Sociability	.0132	.0268+	.3829	.4685	.6825
Exhibition	.0147	.0157	.1535	.2009	.5946

VARIABLES ELIGIBLE FOR ENTRY WHEN F PROB < .05

TABLE 13  
 DISCRIMINANT ANALYSIS  
 GOODNESS OF CLASSIFICATION INTO  
 NON-DEPRESSED, MODERATELY DEPRESSED  
 AND HIGHLY DEPRESSED GROUPS

DEPRESSION INVENTORY GROUPS	N	DISCRIMINANT FUNCTION GROUPS		
		Non-Depressed	Mod. Depressed	Highly Depressed
Non-Depressed	48	30	16	2
Moderately Depressed	38	13	19	6
Highly Depressed	<u>16</u>	1	4	11
	102			

## Discussion

The behavioral factors which emerged as significant in this study of depression in adolescents were: mistrust, competition, dominance, detachment, succurance.

These same factors have been singled out as important in the more recent literature concerning depression. However, the suppressed hostility so frequently mentioned by the schools of psychoanalytic thought, was not supported.

### Mistrust

The most significant factor in distinguishing between the non-depressed, moderately depressed, and highly depressed adolescent was mistrust. Analyses showed that as depression increased, so did the frequency of this type of behavior.

E. Erikson has written that adults who withdraw into habitual states of depression have a weakness in basic trust. They have therefore, failed to master the first task of childhood; they have not learned to rely on a certain continuity of care from others, nor on their own sensations or beliefs.<sup>1</sup>

Cohen et al wrote that the depressed person manipulates others for his own benefit. The depressed person also sees his own behavior as fraudulent because he knows he tends to undersell himself. This split between portrayed behavior and actual ability must lead the depressed person to be suspicious of the feedback others give him regarding his overt behavior.<sup>2</sup>

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<sup>1</sup> E. Erikson, Childhood and Society (New York: W.W. Norton and Co., 1963) pp. 247-251.

<sup>2</sup> M. Cohen, G. Baker, R.A. Cohen, F. Fromm-Reichman, and E. Weigert, "An Intensive Study of Twelve Cases of Manic-Depressive Psychosis", Psychiatry, 17: 121, 1954.

Questions on the AIBI that were concerned with mistrust

were:

1. When people are kind to me, I look to see if they are doing it so they can get something from me.
2. I mistrust or question indications of affection from others.
3. When I do something, people think I am doing it for a different reason than why I am really doing it.
4. I am not given the credit due me for my accomplishments.
5. People criticize or blame me unjustly.
6. I feel others are pulling jokes on me or don't really mean what they are saying.
7. I show reluctance to trust or confide in others.
8. I express my suspicion when someone is especially nice to me.
9. I accuse others of prying into my affairs.<sup>3</sup>
10. I misinterpret minor comments by others as unfavourable towards myself.

#### Competition

This interpersonal behavior category was the second most significant factor in identifying the depressed adolescent. As with mistrust, analysis showed that this behavior was exhibited more frequently the more depressed the adolescent was.

Cohen et al wrote that the depressed person is extremely sensitive to envy and competition. He often grows up in a minority group family who sees a need to maintain and raise the prestige of the family before an adverse world. This particular child is often singled out to take the responsibility of obtaining this prestige for the family.<sup>4</sup>

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<sup>3</sup> Item analysis shows that this question does not contribute well to the distinction between non-depressed, moderately depressed and highly depressed adolescents. Appendix D.

<sup>4</sup> Ibid., pp. 118-119.

Questions pertinent to this behavior category were:

1. I compete and try to do better than other kids.
2. I avoid sharing credit for achievement with others.
3. I volunteer for jobs that gain me the attention of others.
4. I like to win games even at parties.
5. I would rather do well myself than work for a team to do well.
6. I set goals for myself and try to achieve them.
7. I direct the attention of others toward my accomplishments.
8. I work for things that give me status and superiority to others.
9. I contrast unfavourably the accomplishments of others with my own.
10. I seek membership in clubs and associations which have high prestige, reputation.

#### Dominance

Dominance was a significant interpersonal behavior category in identifying the depressed adolescent. Depressed adolescents reported that they exhibited little of this behavior.

This is congruent with Cohen et al's article that said that the depressed person tends to undersell his own abilities in order to promote other persons and their abilities. Cohen et al believed that he did this in order to avoid feelings of envy. They believed that the depressed person had become sensitized to envy as a child when he was expected to improve the families' status, but then had to contend with the accompanying envy of others as well as his siblings and even his parents.<sup>5</sup>

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<sup>5</sup> Ibid., p. 119.

AIBI questions that referred to this interpersonal behavior category were:

1. I make decisions like what to do or where to go when I'm with another friend.
2. I dominate conversations, interrupt, "talk others down".
3. I boss my friends and associates around.
4. I use someone who isn't as smart as I am to make me look good or get me something I want.
5. I volunteer advice and information when people have decisions to make.
6. I talk my friends into doing what I would like.
7. I take opportunities to instruct or explain things to others.
8. I take charge of things when I'm with people.
9. I direct the activities of one or more clubs or associations to which I belong.<sup>6</sup>

#### Detachment

This behavior category helped to distinguish between the non-depressed, moderately depressed, and highly depressed adolescent. Highly depressed adolescents were found to exhibit this type of behavior most of the time or all of the time. Moderately depressed adolescents exhibited it only some of the time and non-depressed adolescents never exhibited it.

This finding was similar to that of Paykel et al in their research with depressed women. They found that depressed women rated highly on diminished contacts with friends, diminished social interaction, diminished dating, withdrawal, lack of involvement, inhibited communication and family attachment.<sup>7</sup>

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<sup>6</sup> Item analysis shows that this question does not contribute well to the distinction between highly depressed adolescents, and moderately and non-depressed adolescents. Appendix D.

<sup>7</sup> E. Paykel, M. Weissman, B. Prusoff, and C. Tonks, "Dimensions of Social Adjustment in Depressed Women", Journal of Nervous and Mental Diseases, 152: 163, 1971.



Questions on the AIBI that were related to this behavior category were:

1. I avoid people who try to become close or personal with me.
2. I do things on my own and amuse myself.<sup>8</sup>
3. I act business-like and impersonal with fellow classmates.
4. I turn down invitations to social events.
5. I find it difficult to mix with others.
6. I avoid discussion of my personal affairs with friends or fellow students.
7. I keep aloof or apart from my neighbours.
8. I stay away from social affairs where I will have to meet new people.
9. I act cool and distant towards others.
10. I avoid involvement or participating in group efforts.
11. I spend my free evenings at home with a hobby, book or T.V. program.<sup>9</sup>

#### Succorance

The analysis of variance, and regression analysis showed that adolescents who were highly depressed reported that they exhibited succorance behavior most of the time or all of the time; moderately depressed adolescents said that they exhibited it less often, and non-depressed adolescents still less.

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<sup>8</sup> Item analysis shows that these questions help distinguish the non-depressed and moderately depressed adolescent from the highly depressed, but not the non-depressed from the moderately depressed. Appendix D.

<sup>9</sup> Op. cit.

It was interesting to note that Cohen et al wrote that the depressed person is exceptionally helpful to siblings and others.<sup>10</sup> The results from this research suggest that the reverse is true, the depressed adolescent expects this type of behavior from others for himself. This is more in keeping with Cohen et al's other belief that the depressed person has one or a very few very dependent relationships in which he is very demanding toward the person -- demanding of his attention, love, service and possessions.<sup>11</sup>

Beck wrote that the depressed person sees himself in negative terms -- inept, inadequate and undesirable. He tends to overestimate the problems in normal living and expects everything to turn out badly. He therefore, yearns for some strong person to take care of him and help him with his problems.<sup>12</sup> This study suggests that depressed adolescents overtly seek this out.

AIBI questions pertinent to succorance were:

1. I try to get others to make decisions for me.
2. I avoid or refuse to take the lead even when I should.
3. I go to others for help and reassurance when in difficulty.<sup>13</sup>
4. I seek out people who show concern and sympathy for me.
5. I borrow money and things of value from friends.
6. I dump my troubles and problems on others.
7. I ask for help on jobs I could handle myself.
8. I ask others to look after my interests.
9. I seek favours from friends even when I can't return them.
10. I seek to have others choose or select for me clothes, food, and even recreation.

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<sup>10</sup> Cohen, op. cit., p. 119.

<sup>11</sup> Ibid.

<sup>12</sup> A. Beck, Depression, (New York: Harper and Row, 1967) p. 265.

<sup>13</sup> Item analysis shows that this question contributes very little towards the distinction between groups. Appendix D.

## Inhibition and Aggression

Considering the emphasis psychoanalytical theorists have given the phenomena of suppressed hostility, it was surprising to discover that it did not appear significant in identifying the depressed adolescent from the non-depressed adolescent. In reflecting on the other reasons for this finding, three possibilities can be suggested. The inventory has only two categories, inhibition and aggression that might reflect suppressed hostility. In step-wise regression analysis and discriminant analysis these factors may get lost due to their correlation with other factors. The third possibility is that suppressed hostility may not be as important a factor as it has generally been acknowledged. Support for this possibility is given by Cohen et al who wrote that hostility in the depressed person has been over-stressed.<sup>14</sup> A still different finding was reported by Paykel et al. Suppressed hostility was not found to be the norm but overt hostility was in their population of depressed patients.<sup>15</sup>

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<sup>14</sup> Cohen op. cit. p. 121.

<sup>15</sup> Paytel op cit., pp. 163-168.

## CHAPTER 5

## SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Summary

Adolescents may be particularly vulnerable to depression. Yet public health nurses working with large groups of adolescents are often unable to recognize depressed adolescents due to the lack of simple, reliable screening tools. This exploratory study was undertaken in order to gain information that could be used to develop such a tool. The specific purpose of the study was to answer the question, 'Are there modes of relating interpersonally that can be used to distinguish the highly depressed and moderately depressed adolescent from the non-depressed adolescent?'

In order to answer this question three null hypothesis were posed:

1. There is no significant difference between the interpersonal behavior scores of non-depressed, moderately depressed and highly depressed adolescents.
2. There is no significant correlations between any interpersonal behavior category and depression.
3. There are no interpersonal behavior categories that can distinguish between the non-depressed, moderately depressed and highly depressed adolescent.

One hundred and two adolescents between the age of thirteen to seventeen living in Greater Vancouver were studied. Twenty-five of those adolescents were from a treatment centre for adolescents with emotional problems; the remaining seventy-seven adolescents were randomly selected students from four Catholic high schools.

Each adolescent was given two self-rating inventories to complete, Beck's Depression Inventory and an adapted form of McNair and Lorr's Interpersonal Behavior Inventory.

On the basis of their scores on the depression inventory sixteen adolescents were found to be highly depressed, thirty-eight moderately

depressed and forty-eight non-depressed.

An analysis of variance was used to discover if there was a difference in the interpersonal behavior scores of these three groups of adolescents. It was found that non-depressed, moderately depressed, and highly depressed adolescents had different scores in thirteen interpersonal behavior categories.

These were:

1. dominance
2. aggression
3. mistrust
4. competition
5. detachment
6. inhibition
7. submissiveness
8. succorance
9. abasement
10. agreeableness
11. affection
12. sociability
13. exhibition

A simple regression analysis was done and it showed that there was a significant positive correlation between high depression scores and high scores on the following interpersonal behavior categories:

1. competition
2. aggression
3. mistrust
4. detachment
5. inhibition
6. submissiveness
7. succorance
8. abasement

There was a negative correlation between high depression scores and high scores on the following interpersonal behavior categories:

1. agreeableness
2. affection

A multiple step-wise regression analysis was carried out and it showed that mistrust, competition and succorance were significant and positively

correlated with high depression scores while high dominance scores were negatively correlated with the high depression scores. Stepwise discriminant was also carried out; mistrust, detachment, competition, dominance were selected as the interpersonal behavior categories that 58.6% of the time correctly distinguished non-depressed adolescents from moderately depressed and highly depressed adolescents.

Therefore, the null hypotheses were rejected.

## Conclusions

On the basis of the findings of this study the following conclusions were made:

1. there are modes of relating interpersonally that distinguish the highly depressed and moderately depressed adolescent from the non-depressed adolescent. Those who exhibit mistrust, competition and detachment most or all of the time and dominance only some of the time or not at all, may be highly or moderately depressed adolescents.
2. depression in adolescents appears to occur on a continuum with youths experiencing graduated degrees of it. When adolescents in this study were grouped as non-depressed, moderately depressed and highly depressed, it was difficult to distinguish between the adolescents whose depression scores fell near the cut off points between high depression and moderate depression, and between moderate depression and non-depression.
3. adolescence is a developmental stage vulnerable to depression. Fifty-four out of 102 adolescents in the study population showed that they were moderately or highly depressed.
4. adolescents experiencing high levels of depression can be found within the student population of high schools. Eight of the sixteen highly depressed youths were students from the high schools.
5. suppressed hostility is not as an important factor in depression as it has generally been believed. The two categories in which this phenomena might have been expressed in this study, were not significant.

On the basis of the item analysis of the questions the following conclusion was made: given the assurance of anonymity, adolescents have both the sensitivity and the willingness to accurately describe their own feelings and behavior via self-report inventories. Analysis of their answers showed

that they did not give their answers in a socially desirably manner nor in a manner that suggested guessing.

On the basis of administering the inventory, the following conclusions were made:

1. depression does not prevent the individual from undertaking and achieving a demanding task. Even the highly depressed adolescents were able to answer a total of 161 questions on computer cards.
2. willingness to assist and curiosity in research was the adolescent norm. Most adolescents in the treatment centre and the high schools were enthusiastic participants in the research and asked many questions concerning its implementation and purpose.



### Implications and Recommendations

The findings of this study imply that the majority of depressed adolescents can be identified through their modes of interpersonal behavior. Public health nurses and other persons working with adolescents should therefore be alerted to watch for the adolescent who frequently exhibits behavior that shows mistrust, competition and detachment, and rarely portrays behavior that is dominating.

The significant findings of this study suggest that further research be carried out to discover the following:

1. will the same interpersonal behavior categories distinguish the depressed adolescent if depression is defined by a different means than Beck's Depression Inventory, eg. by clinical psychiatric interviews, Rorachach, Thematic Apperception Tests, or the D-Scale of the MMPI.
2. do the significant interpersonal behavior categories distinguish only the depressed adolescents or do they distinguish any adolescent who has emotional problems, eg. hysteria, schizophrenia, personality disorder.
3. do the significant interpersonal behavior categories distinguish only the depressed adolescent or do they distinguish depressed adults as well.
4. if another person rated the adolescents' behavior would the findings be similar to when the adolescent rates his own behavior.

If further research supports the findings of this study a screening tool for public health nurses could be developed. Mistrust, competition, dominance and detachment could be used as the gross behavior areas to observe, while a check-list of more specific behaviors could be developed from the seven to eleven statements that are used in the inventory to describe the behavior categories; only those statements that proved useful in

the item analysis would be used.

Once such a tool is developed it is recommended that an experimental study be carried out to discover if public health nurses using the screening tool recognize more depressed adolescents than public health nurses who use their usual method of identification.

The findings of this study suggest that there is a significant correlation between depression and mistrust, competition, dominance and succorance. The findings do not show which factor(s) is the cause and which the result. It is therefore recommended that an experimental study be undertaken to discover if the level of depression in adolescents can be significantly decreased if they receive therapy concerned with changing their mode of relating interpersonally in the areas of mistrust, competition, dominance, succorance. Behavior modification may be an appropriate means of therapy.

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APPENDIX A

PHILOSOPHY OF  
BRITISH COLUMBIA YOUTH  
DEVELOPMENT CENTRE

### British Columbia Youth Development Centre

This Centre, called "The Maples" for convenience, was set up in 1968 by the Mental Health Branch of the Provincial Government of British Columbia to meet the treatment needs of emotionally disturbed children and adolescents.

A. The Family and Children's Clinic which was developed about 1956, Dr. Alan A. Cashmore has been the director since then, and has developed a multi-disciplinary team approach, providing out-patient services to children, adolescents and families.

B. The Psychological Education Clinic was developed by the Director, Dr. Denis C. Shalman, Clinical Psychologist, combining the psychology department with the school on the complex.

C. The Residential Unit is the latest addition to the complex and has been in operation since September, 1969. It consists of three cottages, each contain fifteen beds, and an Arts and Crafts Centre. Other facilities shared by all three clinics include swimming pool, gymnasium, outdoor play and sports areas. At present two cottages are being used for residential treatment, the third functions as a Day Clinic. Adolescent boys and girls from 13-17 years of age live together in a therapeutic community. Although the child's total need is carefully considered, preference is given to kids who are motivated to undertake a psychotherapeutic contract to help themselves, despite the suffering that personality change entails, are admitted.

The treatment philosophy is based upon: giving the kids acceptance for what they are now; giving a warm atmosphere where relationships are offered without a demand that they reciprocate; where communication is

very open and encouraged to be two-way; where feelings are freely shown and accepted; where physical contact is encouraged; though the group may set limits to the expression of aggression. The kids learn that they are worth-while, are important to us as people, that we listen, and care about their needs, and that their personal desires are valid. As they realize this, their self-esteem rises, and is reinforced by the satisfaction and achievement they experience in participating with the counsellors in learning and enjoying new skills in sports, arts and crafts, etc., and in human relationships.

There is a large measure of freedom given in the internal running of the cottages, although there are the reality-limitations of being an institution, under the Civil Service. The kids accept that freedom in the community must involve responsibility to that community so they accept the rules voluntarily and are involved in a democratic process of relative self-government. A community meeting is held daily in which young people and staff participate freely, with confrontations, appreciations, information giving, sensitivity techniques, etc., all intermingled. Freedom of choice, with responsibility for accepting the consequences of this, enable the kids to learn decision making and as their self-esteem and self-confidence grow, the kids initiative to help himself, and to fulfill his own personal needs, increases.

By voluntarily accepting personal responsibility for the results of his choice, the youngster begins to develop self-control and to realize that self-control serves a protective function, and should be reduced by the group, self-control and personal responsibility increase.

In addition to the community meetings, there are regular Gestalt Therapy Groups available to the kids. A staff member may also use these opportunities to work out a problem when feelings have come up strongly in the course of work. There is another group for staff each week. There are also talking groups, one a direct encounter-confrontation type, the other a non-directive, very relaxed informal group in which sensitivity techniques are freely used.

The Psychiatrist will see any youngster or counsellor on request, but he does not see them by rota. The initiative must be theirs, they come when their need is high, and usually "work" well in the interview, which is usually Gestalt Therapy.

Program often centers around the turn-on center, an educational project enriched by arts and crafts. One of our keywords is "participation". Counsellors enjoy "doing their thing" with the kids. Pottery, weaving, knitting, etc., tie dye and batik, photography, music, cooking, sewing, woodworking, sports, trampoline, sailing, skiing, camping and many other activities are warmly shared. These activities usually provide opportunities for greater contact and increased intimacy, and also for the working out of aggression. There is, of course, frequent wrestling and also fist fighting, using boxing gloves when the occasion demands.

The educational program aims at "turning on" kids who have experienced failure and disillusionment at school. School curriculum is completely eschewed, and instead the kids freely follow their own general interests, usually in bursts of enthusiasm lasting from a couple of hours to a couple of days. Gradually we focus on special interests, extended over a longer period and when curiosity and satisfaction in learning are

restored, then kids may elect to do correspondence courses, or have specific remedial teaching. The counsellors are expected to have a basic bachelor's degree, so are drawn from many different disciplines, including teachers, social workers, psychologists, etc., and so provide a rich and varied resource pose. They carry on all programs, whether educational or recreational or treatment under the Director's direction. The various resource persons who come in on a sessional basis are used to train counsellors, who have the real responsibility of caring for and helping the kid to grow.

An in-service training program is conducted to assist with counsellors' personal and professional development. The schedule and specific content of this changes from time to time, in keeping with the needs of the staff in relation to the Unit. Staff members attend training sessions on alternate weeks.

Included in the training are:

- (1) Attendance at a kid's case conference held in the cottage with all kids and Unit and "outside" social workers. (The conference report is prepared by the kid and a counsellor gives an evaluation of his progress. The report is retained in the files and a copy sent to the referring Social Agency or Psychiatrist.)
- (2) Skill training in arts and crafts, athletics, water safety, etc.
- (3) Personal growth through Gestalt Therapy, Sensitivity and Encounter Groups, and theory and practice in conducting various types of groups.
- (4) Sessions with full staff of each cottage only to deal with policy, administrative matters, treatment questions with regard to specific kids, and staff interpersonal relationships.

## Referrals

All manner of social psychological and learning problems can be referred as long as the identified patient has not reached his seventeenth birthday. A centralized intake service will screen referrals and selection of patients will be made on the basis of treatability. It is worth emphasizing that the Residential Unit is an active, intensive, comprehensive treatment unit and not a holding or emergency unit.

Referrals are made through the district offices of the Department of Rehabilitation and Social Improvement who forward the request through Special Placements or through the Children's Aid Society, the Catholic Children's Aid or the Victoria Family and Children's Clinic.

(Miss) M. Eileen Campbell, B.N.  
Acting Director  
Residential Treatment Unit

Peter Campbell, M.D.  
Psychiatrist

APPENDIX B  
CONSENT LETTER



## QUESTIONNAIRE 1:

Choose which statement best describes how you feel today:

I try to put off making decisions.

I have great difficulty making decisions.

I can't make any decisions any more.

I make decisions about as well as ever.

## QUESTIONNAIRE 11:

Rate the behavior that is most typical of you:

I do things on my own and amuse myself.

1. Not at all.

2. Occasionally.

3. Usually.

4. All the time.

I do favours for others without being asked.

1. Not at all.

2. Occasionally.

3. Usually.

4. All the time.

PLEASE REMEMBER THAT AT NO TIME WILL YOUR SON OR DAUGHTER PLACE HIS OR HER NAME ON ANY ANSWER SHEET.

## APPENDIX C

### MATERIALS PERTAINING TO BECK'S DEPRESSION INVENTORY

#### Pre-tests

Table 14 Value of Statements on Beck's Depression Inventory

Beck's Depression Inventory I

Inventory Analysis

## Pre-tests

The purpose of this pre-test was to answer the following: could thirteen year old youths and potentially depressed adolescents comprehend Beck's Depression Inventory; would they have difficulty following the instructions for the questionnaire; could they use the computer cards; how long did this population require to answer this inventory?

A copy of Beck's Depression Inventory was given to each of five thirteen year old boys. The researcher read aloud the first page of instructions and the first five statements grouped under question one, and demonstrated how to mark on the computer card the statement that they felt best explained how they felt at that moment. They were then asked to read carefully the remaining questions, for themselves, and use the computer cards to answer on. They were encouraged to ask the researcher whenever they were unsure of how to answer on the computer card or the meaning of a word or phrase used on the questionnaire.

This same procedure was followed with a group of eighteen adolescents in a treatment centre.

No adolescents asked questions concerning methodology or comprehension.

Adolescents requested erasers to change answers on their computer cards, otherwise they had no difficulty using them to answer on.

The longest time required to complete the inventory was one half hour.

TABLE 14  
VALUES OF STATEMENTS ON BECK'S DEPRESSION INVENTORY

QUESTION	STATEMENTS				
	1	2	3	4	5
1	3	2	2	0	1
2	2	0	3	2	1
3	1	0	2	2	3
4	3	2	0	1	1
5	3	0	2	2	1
6	1	3	0	3	2
7	1	3	0	3	2
8	1	2	3	0	
9	1	3	2	2	0
10	0	1	2	3	
11	1	2	0	3	
12	0	3	2	1	
13	1	3	0	2	
14	0	2	3	1	
15	1	2	3		
16	3	2	0	1	
17	3	0	2	1	
18	0	3	1	2	
19	3	1	2	0	
20	3	2	1	0	
21	0	1	2	3	

# INVENTORY I

On the questionnaire there are groups of statements.

Pick out the ONE statement in that group which best describes the way you feel today, that is RIGHT NOW.

- 1
  1. I am so sad or unhappy that I can't stand it.
  2. I am so sad or unhappy that it is quite painful.
  3. I am blue or sad all the time and I can't snap out of it.
  4. I do not feel sad.
  5. I feel blue or sad.
- 2
  1. I feel that I won't ever get over my troubles.
  2. I am not particularly pessimistic or discouraged about the future.
  3. I feel that the future is hopeless and that things can't improve.
  4. I feel that I have nothing to look forward to.
  5. I feel discouraged about the future.
- 3
  1. I feel that I have failed more than the average person.
  2. I do not feel like a failure.
  3. I feel I have accomplished very little that is worthwhile or that means anything.
  4. As I look back on my life all I can see is a lot of failures.
  5. I feel that I'm a complete failure as a person.
- 4
  1. I am dissatisfied with everything.
  2. I don't get satisfaction out of anything anymore.
  3. I am not particularly dissatisfied.
  4. I feel bored most of the time.
  5. I don't enjoy things the way I used to.
- 5
  1. I feel as though I am very bad or worthless.
  2. I don't feel particularly guilty.
  3. I feel quite guilty.
  4. I feel bad or unworthy practically all the time now.
  5. I feel bad or unworthy a good part of the time.
- 6
  1. I have a feeling that something bad may happen to me.
  2. I want to be punished.
  3. I don't feel I am being punished.
  4. I feel I deserve to be punished.
  5. I feel I am being punished or will be punished.
- 7
  1. I am disgusted with myself.
  2. I am disappointed in myself.
  3. I don't feel disappointed in myself.
  4. I don't like myself.
  5. I hate myself.
- 8
  1. I am critical of myself for my weaknesses or mistakes.
  2. I blame myself for my faults.
  3. I blame myself for everything bad that happens.
  4. I don't feel I am any worse than anybody else.

- 9
  1. I have thoughts of harming myself but I would never carry them out.
  2. I have definite plans about committing suicide.
  3. I feel I would be better off dead.
  4. I feel my family would be better off if I were dead.
  5. I don't have any thoughts of harming myself.
- 10
  1. I don't cry any more than usual.
  2. I cry more now than I used to.
  3. I cry all the time now. I can't stop it.
  4. I used to be able to cry but now I can't cry at all even though I want to.
- 11
  1. I get annoyed or irritated more easily than I used to.
  2. I feel irritated all the time.
  3. I am no more irritated now than I ever am.
  4. I don't get irritated at all at the things that used to irritate me.
- 12
  1. I have not lost interest in people.
  2. I have lost all my interest in other people and don't care about them.
  3. I have lost most of my interest in other people and have little feeling for them.
  4. I am less interested in other people now than I used to be.
- 13
  1. I try to put off making decisions.
  2. I can't make any decisions at all anymore.
  3. I make decisions about as well as ever.
  4. I have great difficulty in making decisions.
- 14
  1. I don't feel I look any worse than I used to.
  2. I feel that there are permanent changes in my appearance and they make me look unattractive.
  3. I feel that I am ugly or repulsive looking.
  4. I am worried that I am looking old or unattractive.
- 15
  1. I don't work as well as I used to.
  2. I have to push myself very hard to do anything.
  3. I can't do any work at all.
  4. I can work about as well as ever.
- 16
  1. I wake up early every day and can't get more than five hours sleep.
  2. I wake up one to two hours earlier than usual and find it hard to get back to sleep.
  3. I can sleep as well as usual.
  4. I wake up more tired in the morning than I used to.
- 17
  1. I get too tired to do anything.
  2. I don't get anymore tired than usual.
  3. I get tired from doing anything.
  4. I get tired more easily than I used to.

- 18 1. My appetite is no worse than usual.  
2. I have no appetite at all anymore.  
3. My appetite is not as good as it used to be.  
4. My appetite is much worse now.
- 19 1. I have lost more than 15 pounds.  
2. I have lost more than 5 pounds.  
3. I have lost more than 10 pounds.  
4. I haven't lost much weight, if any, lately.
- 20 1. I am completely absorbed in what I feel like.  
2. I am so concerned with how I feel or what I feel it's hard to think of much else.  
3. I am concerned about aches and pains or upset stomach or constipation.  
4. I am not more concerned about my health than usual.
- 21 1. I have not noticed any recent change in my interest in sex.  
2. I am less interested in sex than I used to be.  
3. I am much less interested in sex now.  
4. I have lost interest in sex completely.



TABLE 15  
DESCRIPTIVE DATA FOR SCORES ON BECK'S DEPRESSION INVENTORY

NUMBER OF INDIVIDUALS 102	HIGH SCORE 38	MEAN 14.8592
NUMBER OF ITEMS 21	LOW SCORE 0	STANDARD DEVIATION 8.69891

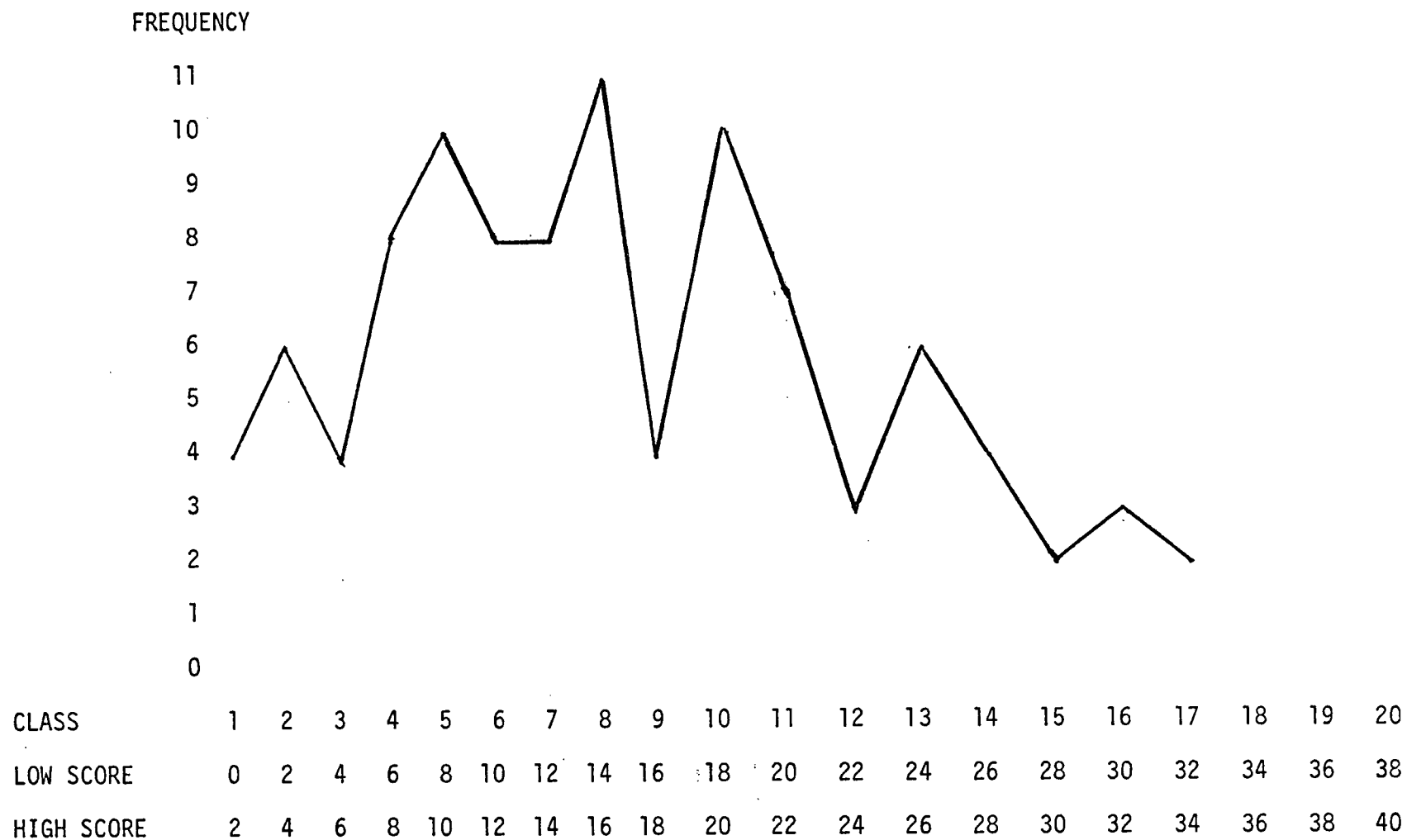


FIGURE 3  
DISTRIBUTION OF DEPRESSION INVENTORY SCORES

TABLE 16

## GOODNESS OF FIT DISTRIBUTION OF DEPRESSION SCORES

CLASS	MIDPOINT	FREQUENCY
0 - 2	1	4
2 - 4	3	6
4 - 6	5	4
6 - 8	7	8
8-10	9	10
10-12	11	8
12-14	13	8
14-16	15	11
16-18	17	4
18-20	19	10
20-22	21	7
22-24	23	3
24-26	25	6
26-28	27	4
28-30	29	2
30-32	31	3
32-34	33	2
34-36	35	1
36-38	37	0
38-40	39	1
DEGREES OF FREEDOM		7
CH 1 SQUARE		5.25193
CH 1 PROBABILITY		.62925
CRITICAL VALUE @ .05		14.07

TABLE 17  
SOURCES OF VARIATION, BECK'S DEPRESSION INVENTORY

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SQUARE OF MEAN SCORES
INDIVIDUALS	101	360.51	3.57
ITEMS	20	217.01	10.85
RESIDUAL	2020	1458.42	0.72
TOTAL	2141	2035.94	0.95
INTERNAL CONSISTENCY COEFFICIENT .80			
STANDARD ERROR OF MEASUREMENT 3.89			

TABLE 18  
ITEM ANALYSIS OF BECK'S DEPRESSION INVENTORY

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PER CENT WHO CHOSE ITEM	BI SERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	3	2	2.0	0.34	28.00
	2	2	2	2.0	0.29	26.00
	3	2	4	3.9	0.50	29.25
	4	0	78	76.5	-0.68	12.26
	5	1	16	15.7	0.37	20.50
2	1	2	7	6.9	0.2	19.29
	2	0	64	62.7	-0.67	11.28
	3	3	4	3.9	0.24	21.75
	4	2	8	7.8	0.23	19.62
	5	1	19	18.6	0.48	21.47
3	1	1	9	8.8	0.36	22.11
	2	0	67	65.7	-0.79	10.88
	3	2	13	12.7	0.36	20.92
	4	2	12	11.8	0.52	23.92
	5	3	1	1.0	0.14	22.00
4	1	3	0	0	0	0.0
	2	2	1	1.0	0.34	32.00
	3	0	60	58.8	-0.77	10.40
	4	1	16	15.7	0.55	23.25
	5	1	25	24.5	0.38	19.24

# ITEM ANALYSIS CON'T

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PER CENT WHO CHOSE ITEM	BI SERIAL CORRELATION COEFFICIENT	MEAN SCORE
5	1	3	3	2.9	0.39	27.67
	2	0	63	61.8	-0.81	10.41
	3	2	12	11.8	0.27	19.58
	4	2	4	3.9	0.49	29.00
	5	1	20	19.6	0.46	20.95
6	1	1	17	16.7	0.14	16.88
	2	3	0	0.0	0.0	0.0
	3	0	59	57.8	-0.55	11.56
	4	3	7	6.9	0.27	20.86
	5	2	19	18.6	0.43	20.74
7	1	1	3	2.9	0.27	23.67
	2	3	33	32.4	0.47	19.39
	3	0	52	51.0	-0.90	8.71
	4	3	12	11.8	0.53	24.17
	5	2	2	2.0	0.33	27.50
8	1	1	20	19.6	.31	18.95
	2	2	22	21.6	.05	15.45
	3	3	10	9.8	.64	27.10
	4	0	50	49.0	- .63	10.38

ITEM ANALYSIS CON'T

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PER CENT WHO CHOSE ITEM	BI SERIAL CORRELATION COEFFICIENT	MEAN SCORE
9	1	1	24	23.5	.33	18.83
	2	3	2	2.0	.32	27.00
	3	2	7	6.9	.54	27.00
	4	2	4	3.9	.15	19.25
	5	0	65	63.7	- .67	11.34
10	1	0	49	48.0	- .55	10.86
	2	1	21	20.6	.32	19.05
	3	2	5	4.9	.22	20.60
	4	3	27	26.5	.24	17.56
11	1	1	40	39.2	.16	16.17
	2	2	4	3.9	.30	23.50
	3	0	27	26.5	- .25	11.93
	4	3	31	30.4	- .04	14.39
12	1	0	84	82.4	- .38	13.62
	2	3	3	2.9	.10	18.00
	3	2	3	2.9	.22	22.00
	4	1	12	11.8	.32	20.42
13	1	1	19	18.6	.22	17.84
	2	3	2	2.0	.33	27.50
	3	0	50	49.0	- .77	9.90
	4	2	30	29.4	.51	20.17
	5	0	1	1.0	.00	15.00

ITEM ANALYSIS CON'T

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PER CENT WHO CHOSE ITEM	BI SERIAL CORRELATION COEFFICIENT	MEAN SCORE
14	1	0	66	64.7	- .62	11.65
	2	2	13	12.7	.15	17.38
	3	3	9	8.8	.34	21.67
	4	1	14	13.7	.49	22.79
15	1	1	21	20.6	.01	14.90
	2	2	30	29.4	.65	21.60
	3	3	2	2.0	.32	27.00
	4	0	49	48.0	- .66	10.08
16	1	3	3	2.9	.31	25.00
	2	2	7	6.9	- .12	12.00
	3	0	33	32.4	- .48	10.06
	4	1	59	57.8	.42	17.25
17	1	3	10	9.8	.34	21.30
	2	0	40	39.2	- .59	9.77
	3	2	7	6.9	.34	22.43
	4	1	45	44.1	.24	16.62
18	1	0	57	55.9	- .56	11.35
	2	3	7	6.9	.40	23.86
	3	1	25	24.5	.13	16.36
	4	2	13	12.7	1.42	22.00



ITEM ANALYSIS CON'T

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PER CENT WHO CHOSE ITEM	BI SERIAL CORRELATION COEFFICIENT	MEAN SCORE
19	1	3	2	2.0	.23	23.50
	2	1	12	11.8	.04	15.50
	3	2	5	4.9	.31	23.00
	4	0	83	81.4	- .25	13.99
20	1	3	12	11.8	.31	20.33
	2	2	11	10.8	.36	21.45
	3	1	17	16.7	.17	17.09
	4	0	61	59.8	- .53	11.84
	5	0	1	1.0	- .04	13.00
21	1	0	86	84.3	- .20	14.05
	2	1	11	10.8	.01	15.00
	3	2	4	3.9	.25	25.25
	4	3	1	1.0	.23	35.00

## APPENDIX D

Materials Pertaining to the Interpersonal Behavior Inventory

Pretests

Table 19, Behavior Categories and Corresponding Questions

Adapted Interpersonal Behavior Inventory (AIBI)

Inventory Analyses

### Pre-tests

The pre-test was undertaken to discover what form the inventory should take, in order that thirteen year old youths and potentially depressed adolescents could comprehend the questions on the inventory and follow the directions in answering it. It was also hoped to discover if adolescents could accurately answer the questions on OMR computer cards and to find the length of time adolescents required to complete the questionnaire. A second aspect of the pre-test was to see if adults working closely with adolescents could complete the inventory on a youth that they felt they knew well.

The level of comprehension for each word used in the questionnaire was compared with the level of words Thorndike and Lorge suggested was understandable at the thirteen year old level. Professors in Education and Nursing were consulted in order to change sophisticated and out-dated phrases to ones that might be more readily understood by today's adolescent.

This interpersonal behavior inventory was given to each of two thirteen year old boys. The first page of instruction and the first question was read to them, as well as the four possible answers to it. Verbal directions with demonstration were given on how to mark on a computer card the one answer to the question that best explained how the adolescent usually acted. The boys were asked to read each of the following questions carefully and choose the appropriate answers from the four statements at the top of the page. They were given three computer cards to answer 140 questions on. They were encouraged to ask verbally and immediately when they were unsure of the meaning of a word, an idea, or the method of answering. It

was emphasized that they could best help by finding questions that they or other youths might ask.

A new questionnaire was made, changing those words the boys had had difficulty understanding. As no other questions had arisen this questionnaire was given to twenty-eight thirteen year old girls using the same procedure.

Some of the girls had difficulty understanding words on the questionnaire and some had difficulty answering the first fifty questions on the first computer card, the next fifty questions on the next card and the remaining questions on the last card.

An adapted questionnaire was designed changing each word that any of the girls had asked the meaning of. The questionnaire was subdivided into three sections: part A, B and C. Part A contained fifty questions that could all be answered on a computer card that was coded number two, part B contained fifty questions that could be answered on a computer card coded number three, and part C consisted of forty questions to be answered on the first forty spaces of computer card four.

The newly adapted questionnaire was then given to five thirteen year old boys. The original procedure was used but the new format of the questionnaire was explained.

They had no difficulties answering the questionnaire. It took the slowest of the thirteen year old boys forty-five minutes to complete.

When the adapted questionnaire was given to two adolescents in the treatment centre who the child care counsellors thought were depressed, no questions were asked although they had been encouraged. This boy and girl

were timed. It took the slowest one hour and twenty minutes to complete.

A split-half, odd-even check for reliability was calculated on the five adolescent boys and two depressed adolescent scores, using Pearson's Product Moment Coefficient. A correlation of .96 was obtained.

Finally this adapted inventory was given to eighteen adolescents in a treatment centre as well as to their child care councillors. The adolescents answered the inventory while the researcher was present. A child care counsellor was to answer the inventory on an adolescent who had participated in the study, and who the counsellor knew well; they were to complete the inventory that day.

There was a minimal return of the questionnaires left for the counsellors to complete; those that attempted to answer the inventory reported that they had difficulty knowing the youth well enough to adequately complete it. For these reasons, it was decided that this level of data would not be sought. The level of data would be limited to that reported by the adolescents themselves.

TABLE 19  
ADAPTED INTERPERSONAL BEHAVIOR INVENTORY  
BEHAVIOR CATEGORIES AND CORRESPONDING QUESTIONS

BEHAVIOR CATEGORY	CORRESPONDING QUESTIONS		
	SECTION A	SECTION B	SECTION C
Dominance	1 16 31 46	11 26 41	6 19
Competition	2 17 32 47	12 27 42	7 20 30
Aggression	3 18 33 48	13 28 43	8 21 31
Mistrust	4 19 34 49	14 29 44	9 22 32
Detachment	5 20 35 50	15 30 45	10 23 33 39
Inhibition	6 21 36	1 16 31 46	
Submission	7 22 37	2 17 32 47	11 24 34
Succorance	8 23 38	3 18 33 48	13 26
Abasement	9 24 39	4 19 34 49	13 26
Deference	10 25 40	5 20 35 50	14 27 36
Agreeableness	11 26 41	6 21 36	1 15
Nurturance	12 27 42	7 22 37	2 16 28 37
Affection	13 28 43	8 23 38	3
Sociability	14 29 44	9 24 39	4 17 29 38
Exhibition	15 30 45	10 25 40	5 18

## A1B1

Base your ratings on the behavior you believe you show.

Rate the behavior that is most typical of you.

Don't try to answer questions the same way. People often show, for good reasons, behaviors that seem opposite.

Rate quickly by drawing a straight line through the appropriate number with a pencil.

Rate every statement. If you feel uncertain about a judgment, record your best guess.

## A

- |                 |                    |
|-----------------|--------------------|
| 1. Not At All   | 3. Usually         |
| 2. Occasionally | 4. All Of The Time |
- 

1. I make decisions like what to do or where to go when I'm with another friend.
2. I compete and try to do better than other kids.
3. I ridicule or run down others.
4. When people are kind to me, I look to see if they are doing it so they can get something from me.
5. I avoid people who try to become close or personal with me.
6. I show discomfort and nervousness when people watch me at work or play.
7. I let others take charge of things even though the responsibility is mine.
8. I try to get others to make my decisions for me.
9. I apologize when criticized or blamed regardless of who's fault it is.
10. I show respect for persons in authority by attitude and manner.
11. I contribute favourably as a member of a team or group.
12. I listen sympathetically to others talk about their troubles.
13. I exhibit an open trust and faith in others.
14. I go out of my way to be with people.
15. I draw attention to myself in a group by telling jokes and stories.
16. I dominate conversations, interrupt, "talk others down".
17. I avoid sharing credit for achievement with others.
18. I act as if I'm the underdog; as if I'm being picked on.
19. I mistrust or question indications of affection from others.
20. I do things on my own and amuse myself.



- |                 |                    |
|-----------------|--------------------|
| 1. Not At All   | 3. Usually         |
| 2. Occasionally | 4. All Of The Time |
- 

21. I show signs of self-consciousness with strangers.
22. I give way when someone insists on a point.
23. I avoid or refuse to take the lead even when I should.
24. I blame myself when disagreements occur with others.
25. I speak favourably of persons in charge or in authority over me.
26. I feel comfortable with other kids and they like me.
27. I give help or advice to people who are having difficulty.
28. I show affection and closeness to members of my family.
29. I take the first step such as saying hello first, when making new friends.
30. I take over conversations by talking about myself (illness, experiences, travel).
31. I boss my friends and associates around.
32. I volunteer for jobs that gain me the attention of others.
33. I put down or criticize the successes and strengths of others.
34. When I do something, people think I do it for a different reason than why I am really doing it.
35. I act business-like and impersonal with fellow classmates.
36. I keep silent when in a group.
37. Even when I have a good reason, I don't show other people I am irritable or angry with them.
38. I go to others for help and reassurance when in difficulty.
39. I apologize for not having done better when I complete a task.
40. I make myself useful to persons I admire or respect.

1. Not At All

3. Usually

2. Occasionally

4. All Of The Time

---

41. I relate to and treat people as equals.

42. I reassure and comfort others when they are feeling low.

43. I say something favourable about nearly everyone I mention.

44. I avoid activities in which I might be alone.

45. When I'm telling friends about what I've done on the weekend,  
I make it sound extra exciting.

46. I use someone who isn't as smart as I am to make me look good or  
to get me something I want.

47. I like to win games even at parties.

48. I criticize or defy persons in authority.

49. I am not given the credit due me for my accomplishments.

50. I turn down invitations to social affairs.

## B

1. Not At All

3. Usually

2. Occasionally

4. All of the Time

- 
1. I avoid actions in public which might make people notice me a lot.
  2. I go out of my way to avoid an argument.
  3. I seek out people who show concern and sympathy for me.
  4. I accept or take blame when things go wrong.
  5. I carry out orders of my superiors with eagerness.
  6. I carry out my share of common tasks or assignments.
  7. I lend things I value to my friends.
  8. I show a real liking and affection for people.
  9. I work hard at being popular and accepted.
  10. I make startling remarks that attract attention.
  11. I volunteer advice and information when people have decisions to make.
  12. I would rather do well myself than work for a team to do well.
  13. I show impatience and don't tolerate others' mistakes or weaknesses.
  14. People criticize or blame me unjustly.
  15. I find it difficult to mix with others.
  16. I show signs of discomfort or self-consciousness in the presence of authority figures.
  17. I am agreeable and try to reach agreement when differences arise.
  18. I get opinions from others for even minor decisions.
  19. I make a lot of apologies for my appearance or conduct.
  20. I choose friends who have greater popularity or greater prestige.
  21. I like to work with others on a project that we all want to do.

22. I put aside my own work or pleasure if someone asks for help.
23. I find it easy to like people on short acquaintance.
24. I encourage friends to drop in informally at my home.
25. I speak up at meetings whether I have anything to say or not.
26. I talk my friends into doing what I would like.
27. I set difficult goals for myself and try to achieve them.
28. I show anger or irritability in my dealing with others.
29. I feel others are pulling jokes on me or don't really mean what they are saying.
30. I avoid discussion of my personal affairs with friends or fellow students.
31. I keep shyly in the background in a social gathering.
32. I yield to the wishes and plans of others.
33. I borrow money and things of value from friends.
34. I talk at length about my faults and failures even in a group.
35. I copy the behavior of admired or successful persons.
36. I express my ideas so that they won't hurt other people's feelings.
37. I am obliging and cooperative when asked to perform little services or favours.
38. I act close and personal with people.
39. I invite friends and acquaintances to my home.
40. I turn conversations in the direction of my ideas, accomplishments, misfortunes.
41. I take opportunities to instruct or explain things to others.
42. I direct the attention of others toward my accomplishments.
43. I feel I'm above other kids my age.
44. I show reluctance to trust or confide in others.
45. I keep aloof or apart from my neighbours.

1. Not At All

3. Usually

2. Occasionally

4. All of the Time

---

46. I feel uncomfortable in close face-to-face individual contacts.

47. I give in rather than fight for my rights in a conflict.

48. I dump my troubles and problems on others.

49. I tell others I feel inferior to them.

50. I readily accept advice of superiors.

## C

- |                 |                    |
|-----------------|--------------------|
| 1. Not At All   | 3. Usually         |
| 2. Occasionally | 4. All of the Time |
- 

1. I consider the feelings and needs of others before speaking or acting.
2. I do favours for others without being asked.
3. I express affection openly and directly through words, gestures and contact.
4. I mix widely at a social gathering.
5. I act the clown or amuse others at a party.
6. I take charge of things when I'm with people.
7. I work for things that give me status and superiority to others.
8. I tell people "off" when they annoy me.
9. I express suspicion when someone is especially nice to me.
10. I stay away from social affairs where I will have to meet new people.
11. I yield without objection when my opinions are questioned or challenged.
12. I ask for help on jobs I could handle myself.
13. When I compare my skills and accomplishments with those of my friends, mine seem small and of little credit.
14. I try to obey and please people who are more powerful and skilled than I am.
15. I try to "fit in" and do what is expected.
16. I show a genuine interest in the problems of others.
17. I drop in to visit friends just to talk.
18. I openly describe my personal affairs even to casual acquaintances.
19. I direct the activities of one or more clubs or associations to which I belong.
20. I contrast unfavourably the accomplishments of others with my own.
21. I make unfavourable or hostile remarks about my equals.

1. Not At All

3. Usually

2. Occasionally

4. All of the Time

---

22. I accuse others of prying into my affairs.
23. I act cool and distant towards others.
24. I compromise to avoid unpleasantness.
25. I ask others to look after my interests.
26. I express a great deal of gratitude for help or favours.
27. I try to be helpful and agree with the teacher and other people who are in authority over me.
28. I respond to others' faults in a helpful, accepting manner.
29. I attend or help organize parties, dances, celebrations and reunions.
30. I seek membership in clubs and associations which have high prestige, reputation.
31. I use a sarcastic or biting type of humor.
32. I misinterpret minor comments by others as unfavourable towards myself.
33. I avoid involvement or participating in group efforts.
34. I let my friends push me around.
35. I seek favours from friends even when I can't return them.
36. I submit to the judgment of older individuals in making decisions.
37. I exhaust my energies being helpful to others.
38. I try to be included in most of my friends' activities.
39. I spend my free evenings at home with a hobby, book or T.V. program.
40. I seek to have others choose or select for me clothes, food, and even recreation.

TABLE 20  
SOURCES OF VARIATION  
A1B1 SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	320.21	3.17
ITEMS	34	491.61	14.46
RESIDUAL	3434	2262.80	.66
TOTAL	3569	3074.62	.86
INTERNAL CONSISTENCY COEFFICIENT			.79
STANDARD ERROR OF MEASUREMENT			4.80



TABLE 21

SOURCES OF VARIATION

DOMINANCE SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	105.92	1.05
ITEMS	8	140.89	17.61
RESIDUAL	808	360.67	0.45
TOTAL	917	607.48	.66
INTERNAL CONSISTENCY COEFFICIENT			.57
STANDARD ERROR OF MEASUREMENT			2.00

TABLE 22

SOURCE OF VARIATION

COMPETITION SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	186.25	1.84
ITEMS	9	129.38	14.38
RESIDUAL	909	561.72	.62
TOTAL	1019	877.36	.86
INTERNAL CONSISTENCY COEFFICIENT			.66
STANDARD ERROR OF MEASUREMENT			2.2/9

TABLE 23

SOURCE OF VARIATION  
AGGRESSION SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	190.88	1.89
ITEMS	9	41.35	4.59
RESIDUAL	909	451.05	0.50
TOTAL	1019	683.20	0.67
INTERNAL CONSISTENCY COEFFICIENT			.24
STANDARD ERROR OF MEASUREMENT			2.23

TABLE 24

SOURCE OF VARIATION

MISTRUST SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	204.13	2.02
ITEMS	9	25.45	2.83
RESIDUAL	909	457.25	.50
TOTALS	1019	686.84	.67
INTERNAL CONSISTENCY COEFFICIENT			.75
STANDARD ERROR OF MEASUREMENT			2.24

TABLE 25

SOURCE OF VARIATION

DETACHMENT SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	245.65	2.43
ITEMS	10	116.66	11.67
RESIDUAL	1010	646.44	.64
TOTALS	1121	1008.75	.90
INTERNAL CONSISTENCY COEFFICIENT			.24
STANDARD ERROR OF MEASUREMENT			2.65

TABLE 26

SOURCE OF VARIATION  
INHIBITION SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	250.51	2.48
ITEMS	6	28.16	4.69
RESIDUAL	606	368.99	.61
TOTALS	713	647.66	.91
INTERNAL CONSISTENCY COEFFICIENT			.75
STANDARD ERROR OF MEASUREMENT			2.06

TABLE 27

SOURCE OF VARIATION

SUBMISSIVENESS SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	164.68	1.63
ITEMS	9	157.21	17.47
RESIDUAL	909	510.30	.56
TOTAL	1019	832.18	.82
INTERNAL CONSISTENCY COEFFICIENT			.66
STANDARD ERROR OF MEASUREMENT			2.37

TABLE 28

SOURCE OF VARIATION

SUCCORANCE SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	138.19	1.37
ITEMS	10	76.69	7.67
RESIDUAL	1010	548.59	.54
TOTAL	1121	763.46	.68
INTERNAL CONSISTENCY COEFFICIENT			.60
STANDARD ERROR OF MEASUREMENT			2.44



TABLE 29  
SOURCE OF VARIANCE  
ABASEMENT SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	183.18	1.81
ITEMS	8	143.10	17.89
RESIDUAL	808	445.57	0.55
TOTALS	917	771.84	0.84
INTERNAL CONSISTENCY COEFFICIENT			.70
STANDARD ERROR OF MEASUREMENT			2.23

TABLE 30

SOURCE OF VARIANCE  
DEFERENCE SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	197.01	1.95
ITEMS	9	122.37	13.60
RESIDUAL	909	500.04	.55
TOTAL	1019	819.41	.80
INTERNAL CONSISTENCY COEFFICIENT			.72
STANDARD ERROR OF MEASUREMENT			2.35

TABLE 31

SOURCE OF VARIANCE

AGREEABLENESS

	DEGREE OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	131.69	1.30
ITEMS	7	12.86	1.84
RESIDUAL	707	435.26	.62
TOTAL	815	579.82	.71
INTERNAL CONSISTENCY COEFFICIENT			.53
STANDARD ERROR OF MEASUREMENT			2.22

TABLE 32

SOURCE OF VARIANCE  
NURTURANCE SCORES

	DEGREE OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUALS	101	170.69	1.69
ITEMS	9	97.44	10.83
RESIDUAL	909	410.27	.45
TOTAL	1019	678.39	.67
INTERNAL CONSISTENCY COEFFICIENT			.73
STANDARD MEASUREMENT OF ERROR			2.12

TABLE 33

SOURCE OF VARIATION

AFFECTION SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	180.96	1.79
ITEMS	6	28.31	4.72
RESIDUAL	606	311.70	.51
TOTAL	713	520.97	.73
INTERNAL CONSISTENCY COEFFICIENT			.71
STANDARD ERROR OF MEASUREMENT			1.90

TABLE 34

SOURCE OF VARIATION

SOCIABILITY SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SUM OF MEAN SCORES
INDIVIDUAL	101	236.18	2.34
ITEMS	9	24.30	2.70
RESIDUAL	909	646.40	.71
TOTAL	1019	906.89	.89
INTERNAL CONSISTENCY COEFFICIENT			.70
STANDARD ERROR OF MEASUREMENT			2.67

TABLE 35

SOURCE OF VARIATION

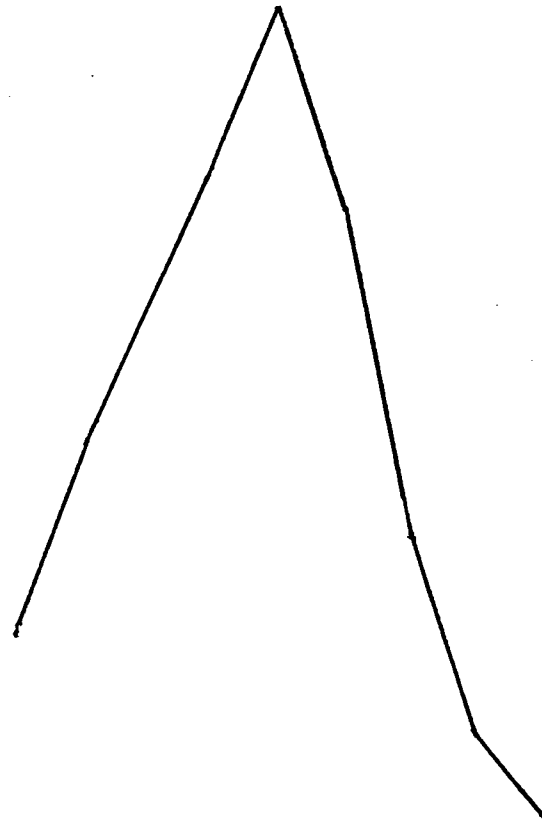
EXHIBITION SCORES

	DEGREES OF FREEDOM	SUM OF SQUARED SCORES	SQUARE OF MEAN SCORES
INDIVIDUAL	101	176.73	1.75
ITEMS	7	50.92	7.27
RESIDUAL	707	389.20	.55
TOTAL	815	616.85	.76
INTERNAL CONSISTENCY COEFFICIENT			.69
STANDARD ERROR OF MEASUREMENT			2.10

FREQUENCY

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N = 102

df = 3

Chi Square = 2.82241

Chi Prob = .72734

FIGURE 4

FREQUENCY DISTRIBUTION OF DOMINANCE SCORES AND GOODNESS OF FIT



FREQUENCY

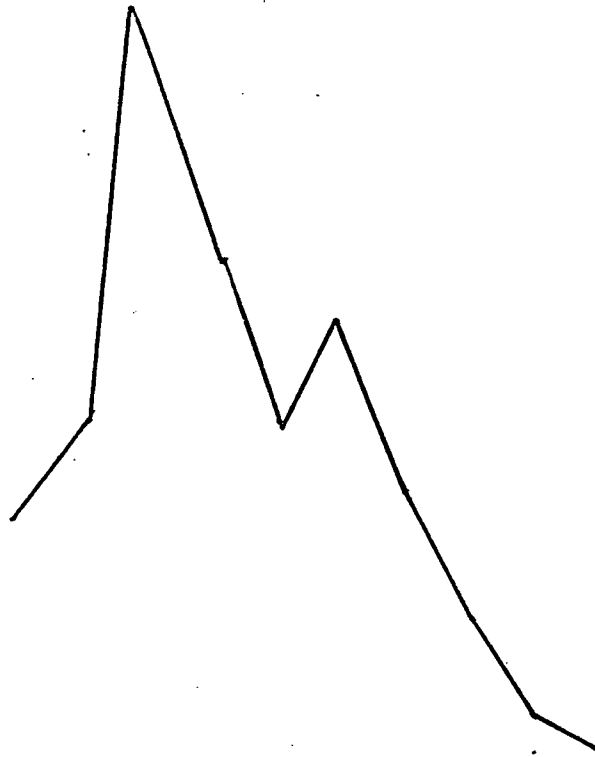
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4  
3  
2  
1

N = 102

df = 5

Chi Square = 10.75205

Chi Prob = .05652



CLASS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
LOW SCORE	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
HIGH SCORE	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40

FIGURE 5

FREQUENCY DISTRIBUTION OF COMPETITION SCORES AND GOODNESS OF FIT

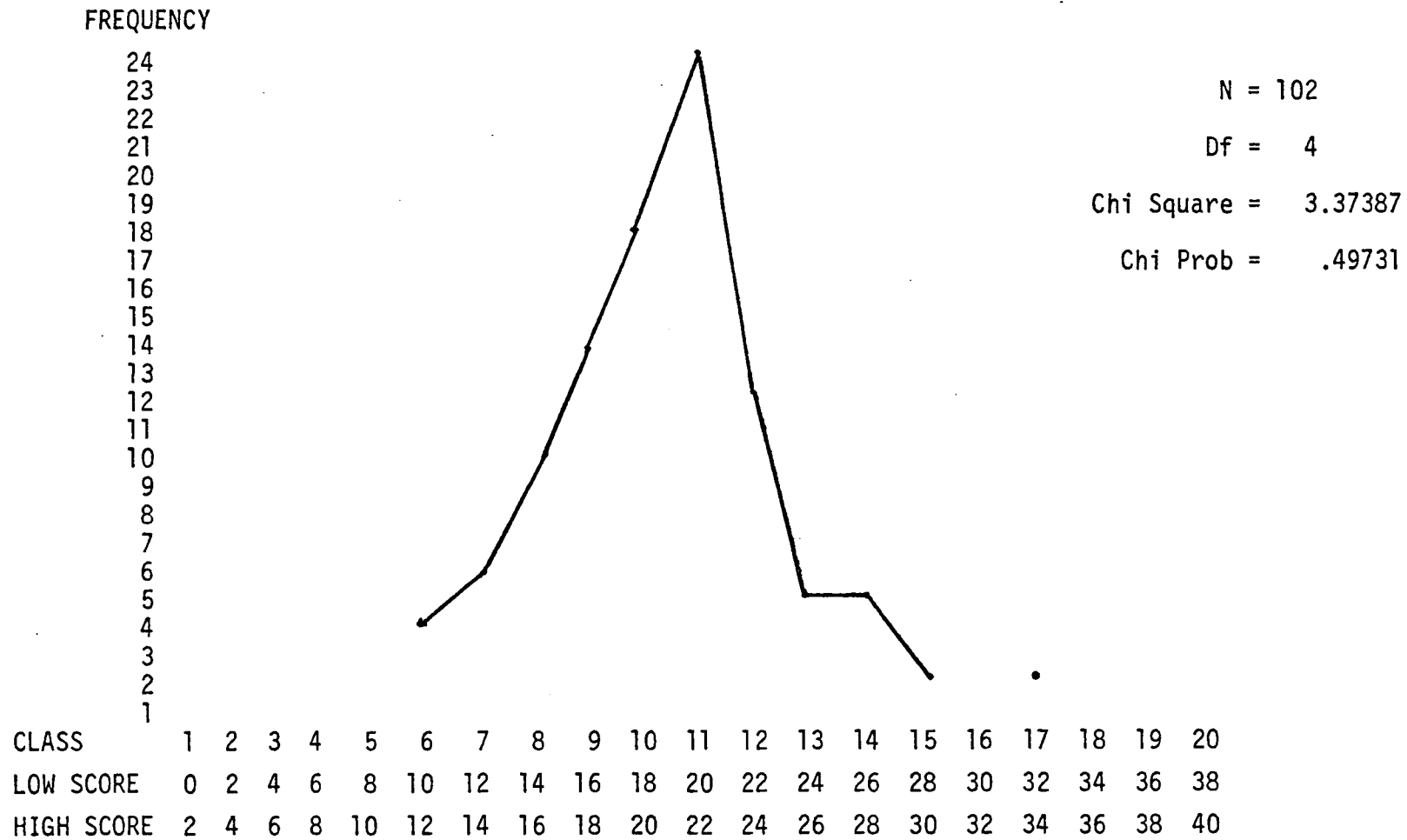
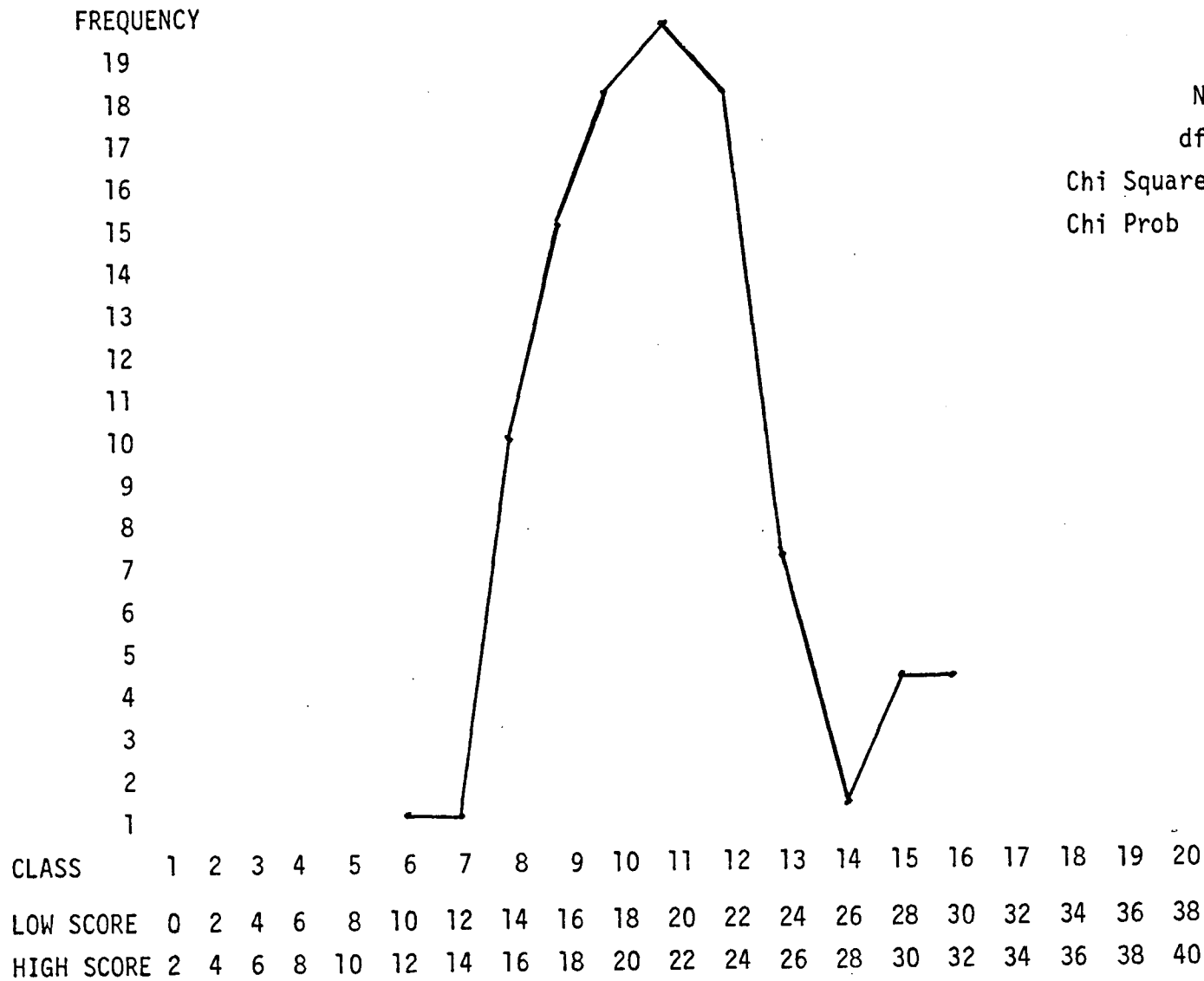
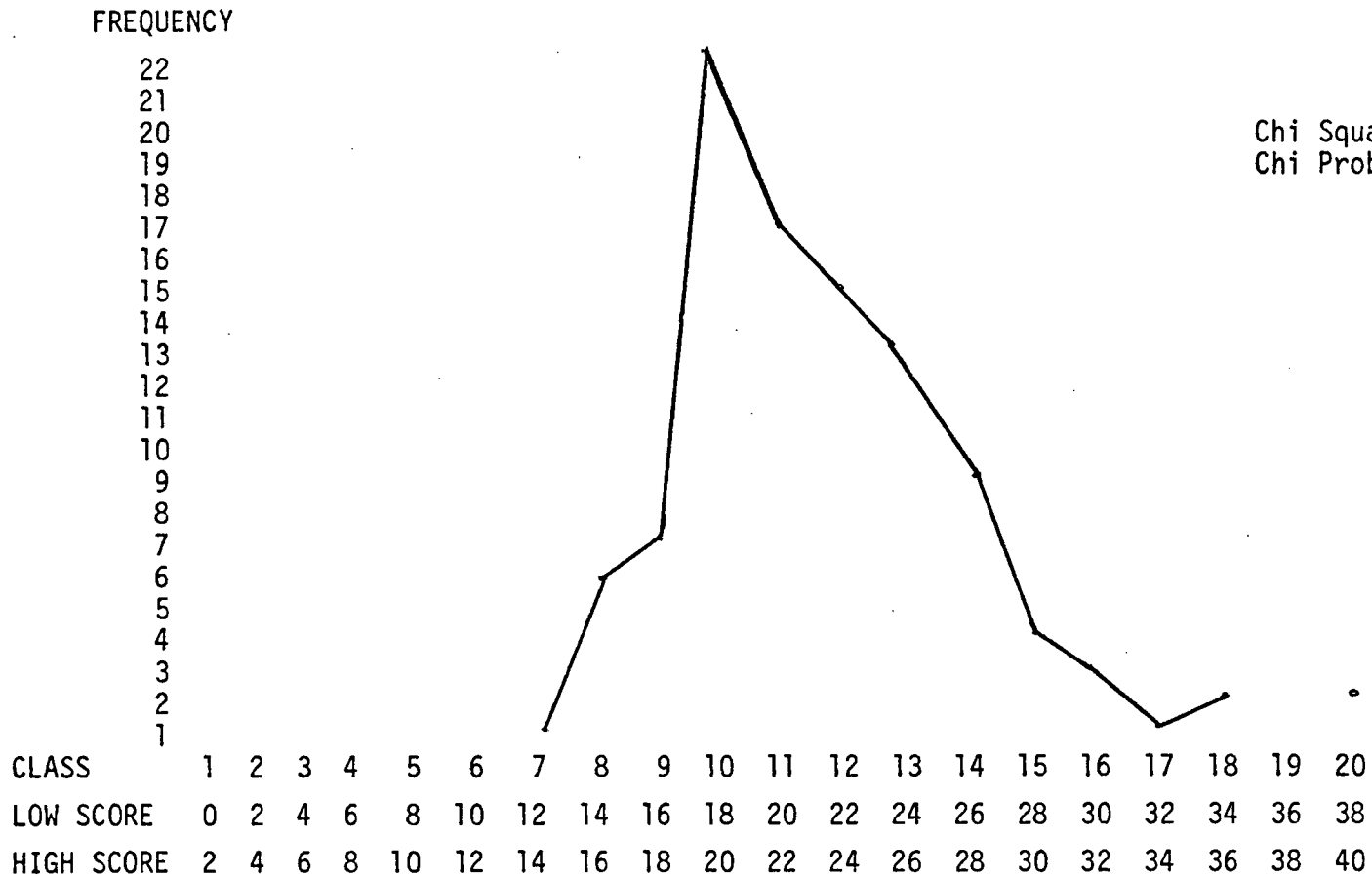


FIGURE 6  
FREQUENCY DISTRIBUTION OF AGGRESSION SCORES AND GOODNESS OF FIT



N = 102  
 df = 5  
 Chi Square = 3.30782  
 Chi Prob = .65264

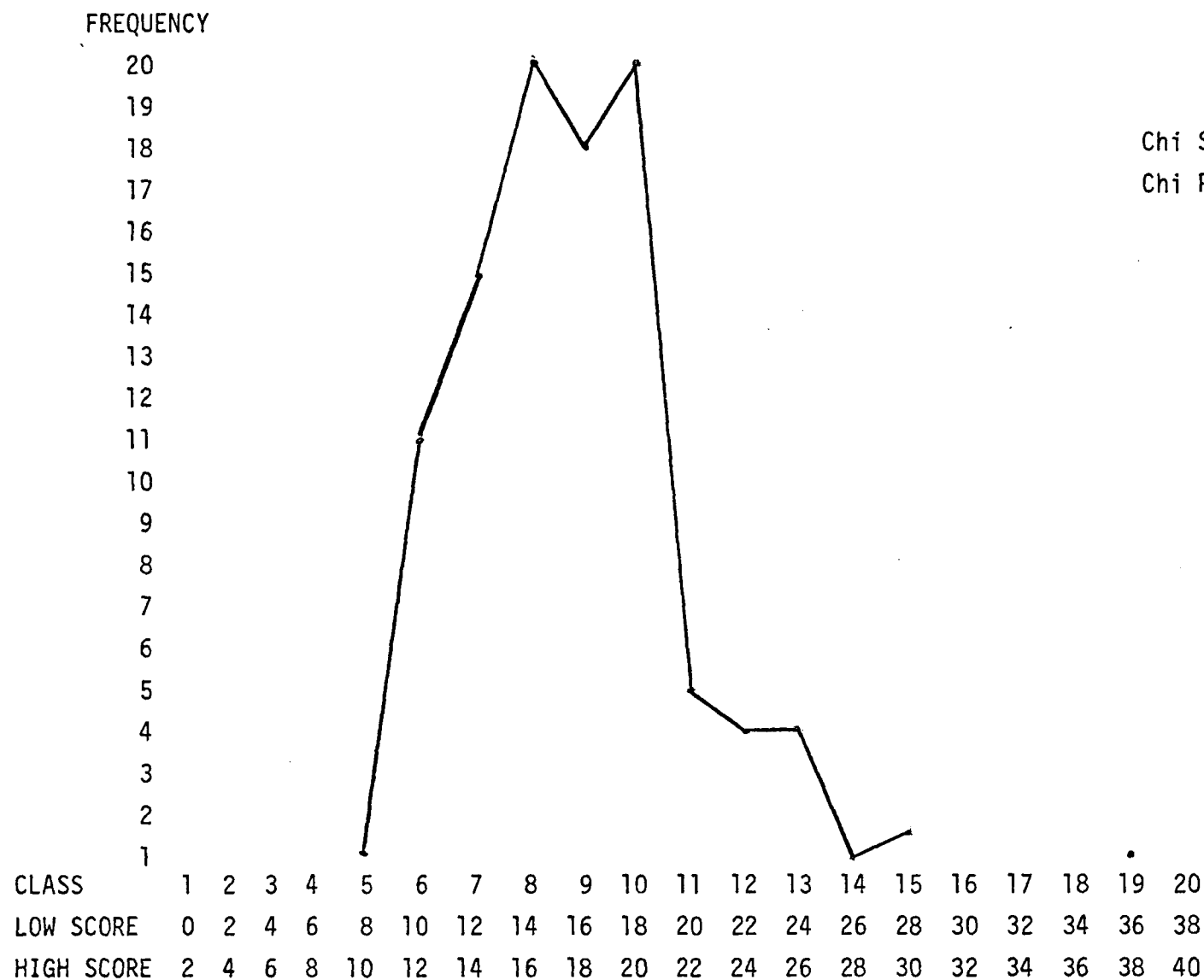
FIGURE 7  
 FREQUENCY DISTRIBUTION OF MISTRUST SCORES AND GOODNESS OF FIT



N = 102  
df = 6  
Chi Square = 11.33027  
Chi Prob = .07869

FIGURE 8

FREQUENCY DISTRIBUTION OF DETACHMENT SCORES AND GOODNESS OF FIT



$N = 102$   
 $df = 5$   
 $\text{Chi Square} = 11.81324$   
 $\text{Chi Prob} = .03744$

FIGURE 9

FREQUENCY DISTRIBUTION OF INHIBITION SCORES AND GOODNESS OF FIT

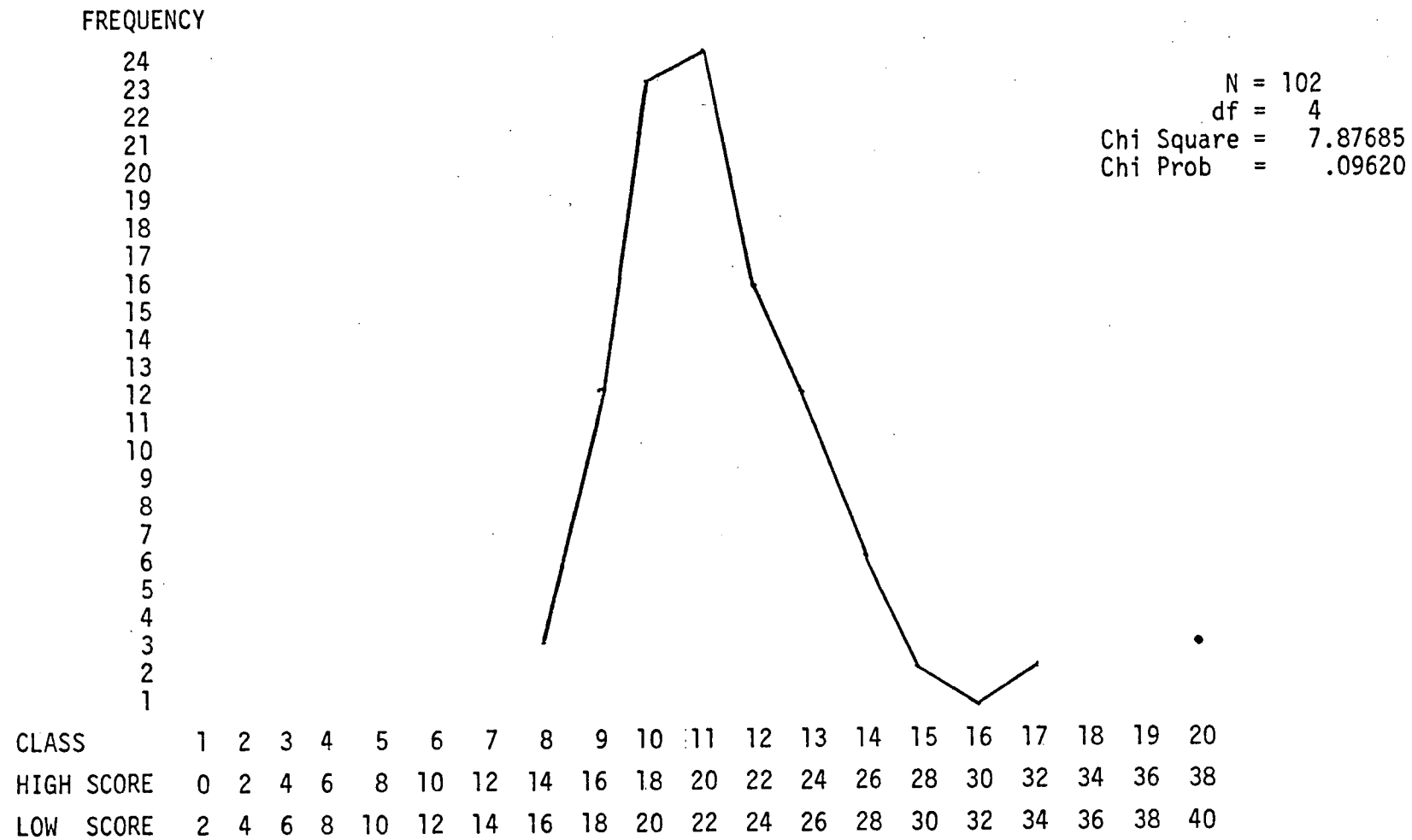


FIGURE 10

FREQUENCY DISTRIBUTION OF SUBMISSIVENESS SCORES AND GOODNESS OF FIT

FREQUENCY

27  
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6  
5  
4  
3  
2  
1

N = 102  
df = 4  
Chi Square = 6.40916  
Chi Prob = .17060

CLASS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
LOW SCORE	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
HIGH SCORE	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40

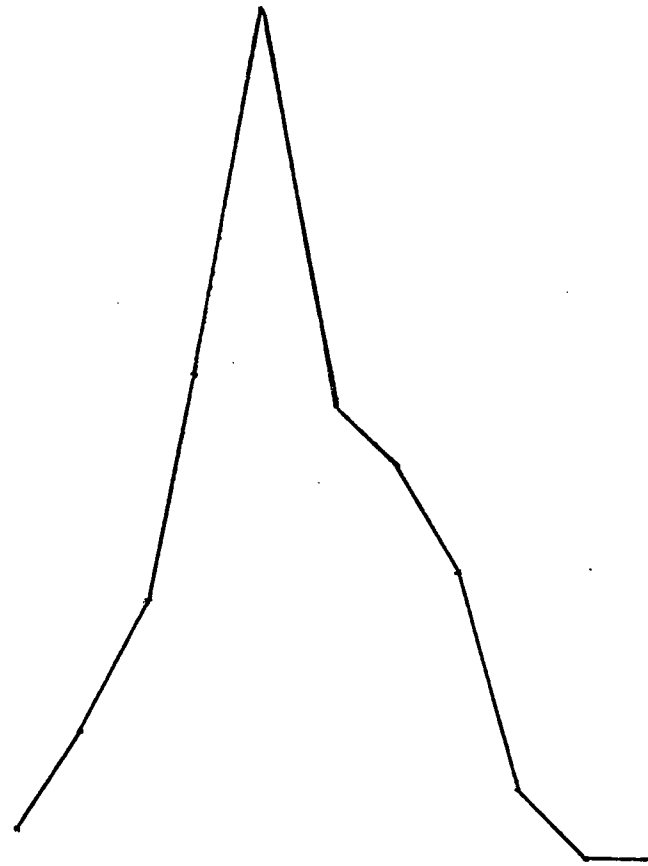


FIGURE 11

FREQUENCY DISTRIBUTION OF SUCCORANCE SCORES AND GOODNESS OF FIT

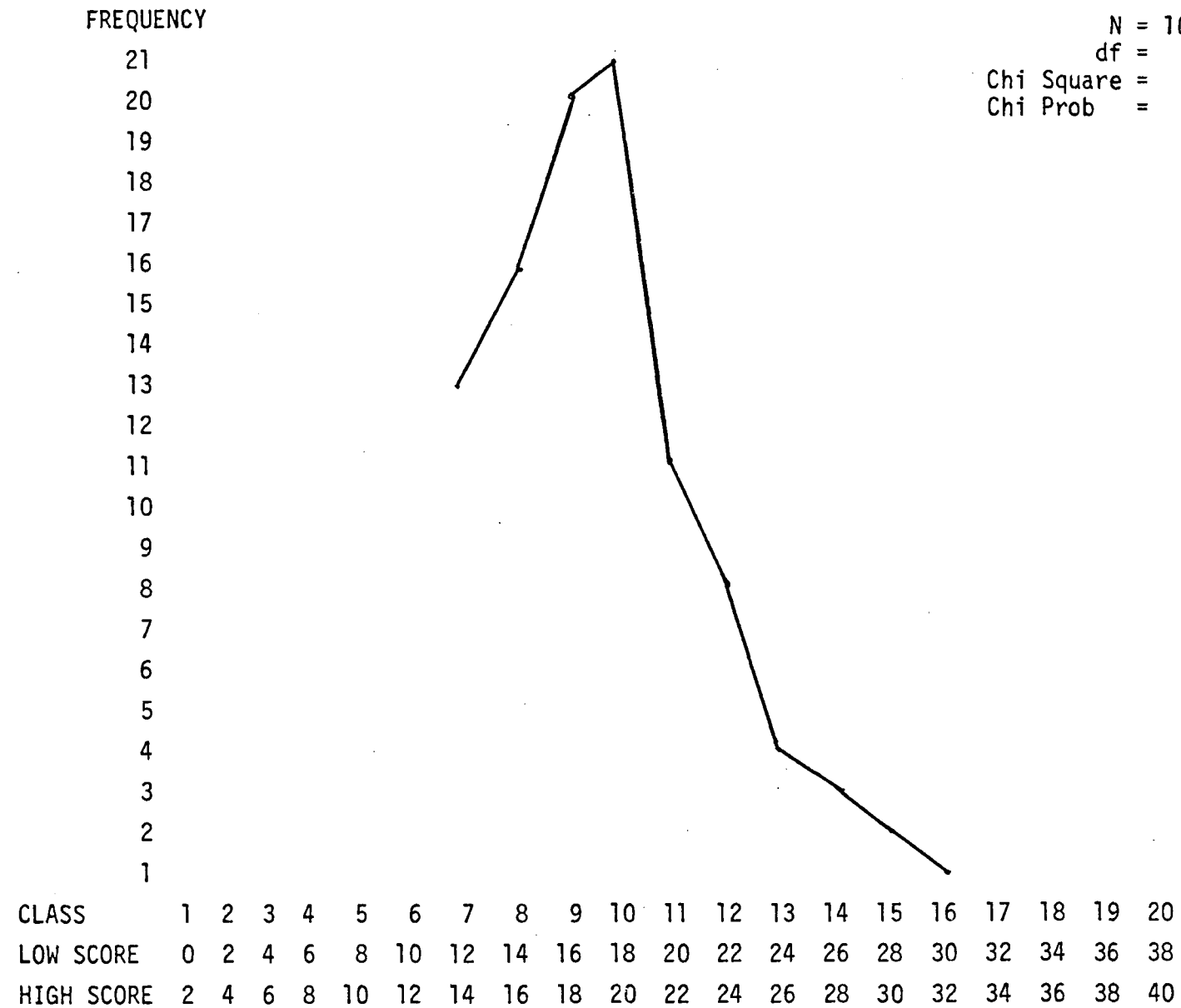
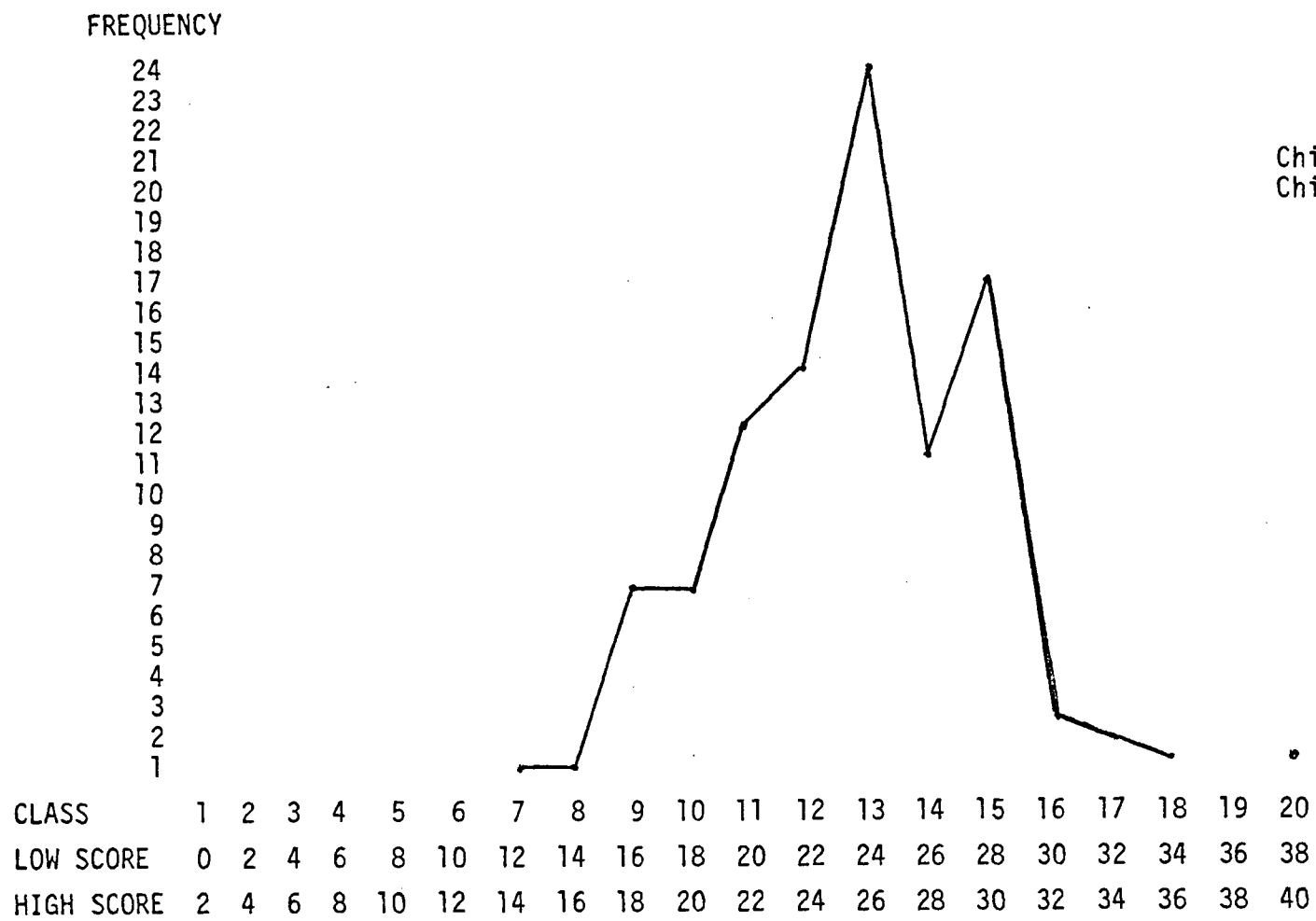


FIGURE 12

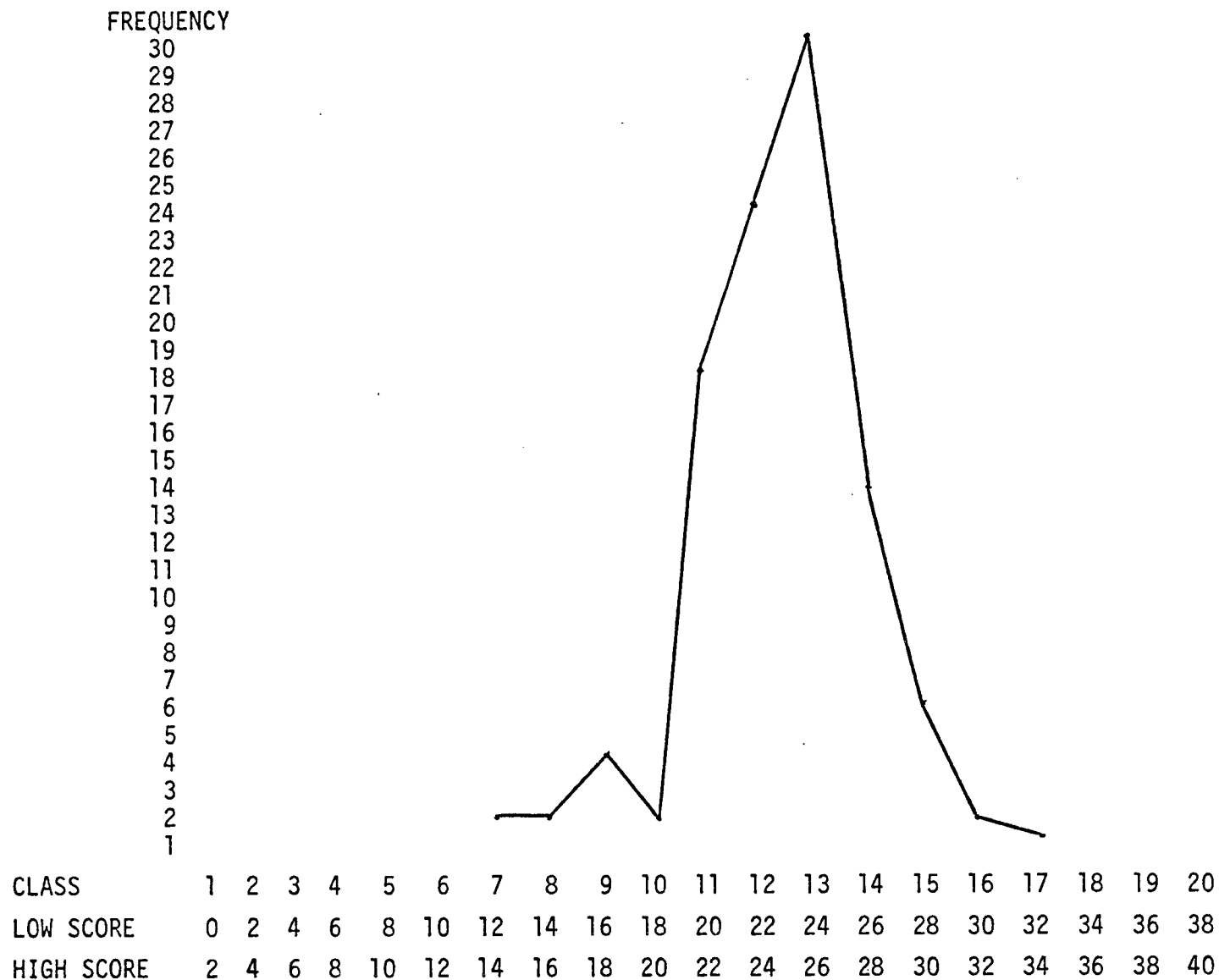
FREQUENCY DISTRIBUTION OF ABASEMENT SCORES AND GOODNESS OF FIT





N = 102  
 df = 3  
 Chi Square = 9.81907  
 Chi Prob = .08053

FIGURE 13  
 FREQUENCY DISTRIBUTION OF DEFERENCE SCORES AND GOODNESS OF FIT



N = 102  
df = 3  
Chi Square = 6.36029  
Chi Prob = .27272

FIGURE 14

FREQUENCY DISTRIBUTION OF AGREEABLENESS SCORES AND GOODNESS OF FIT

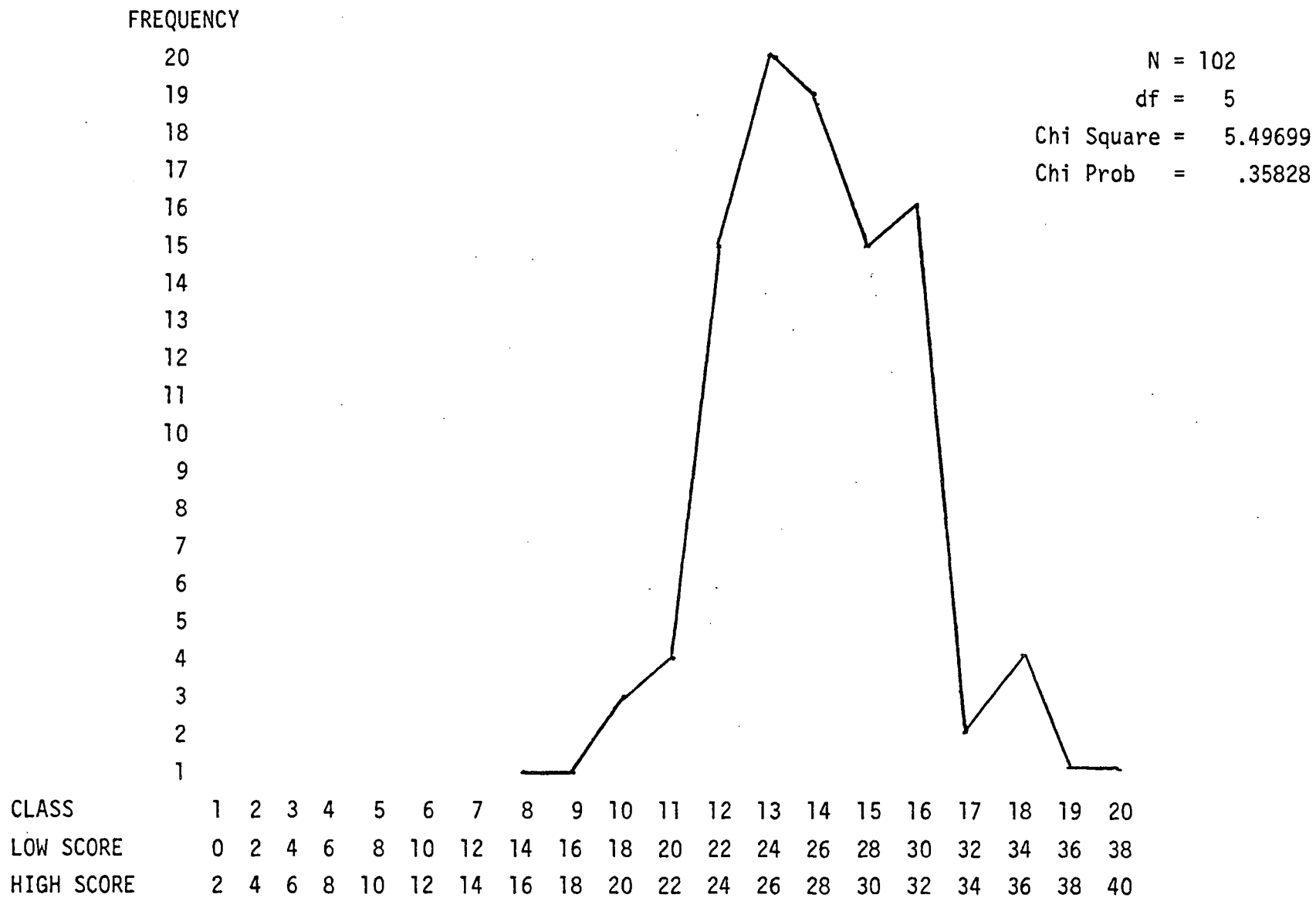


FIGURE 15

FREQUENCY DISTRIBUTION OF NURTURANCE SCORES AND GOODNESS OF FIT

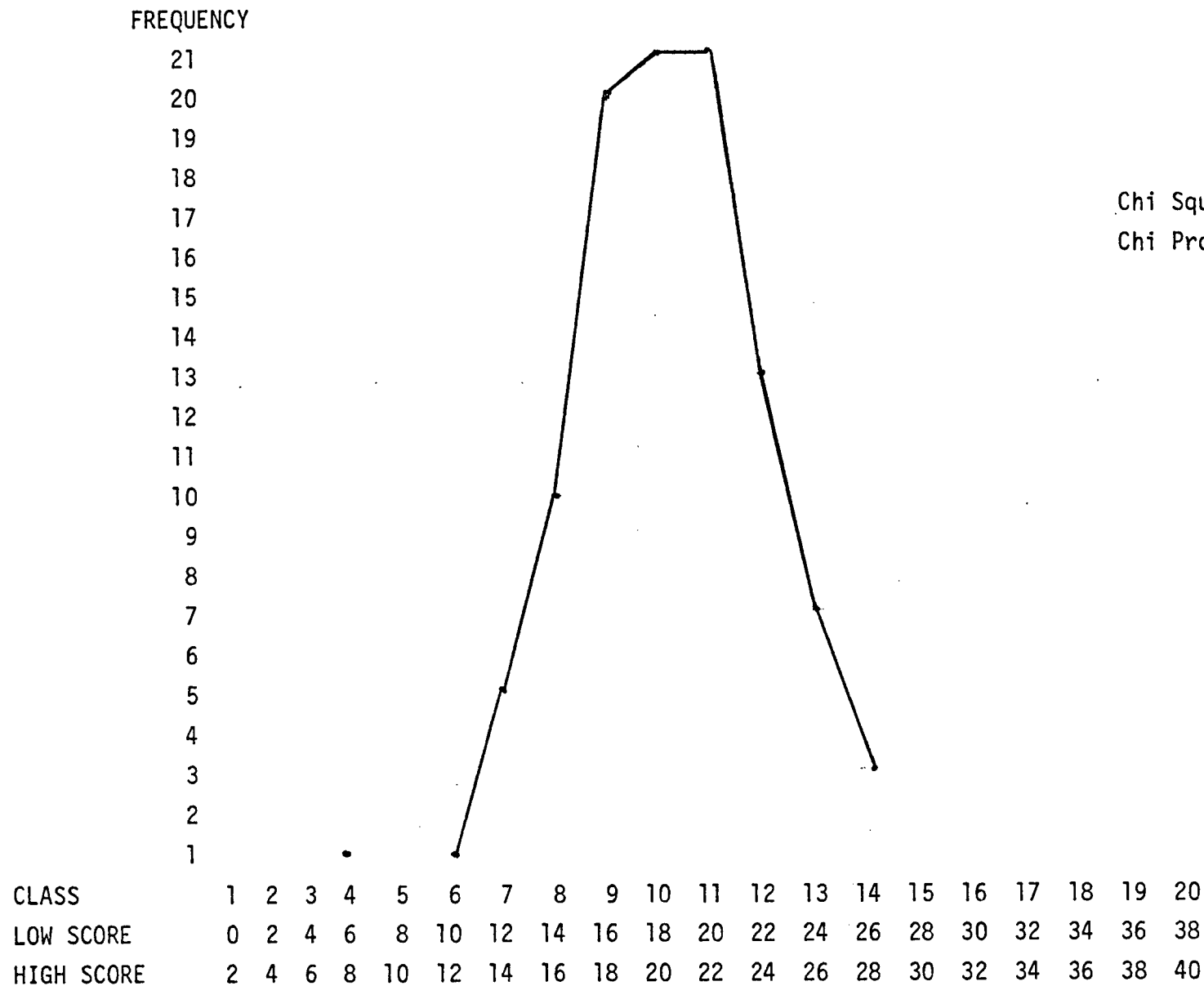


FIGURE 16

FREQUENCY DISTRIBUTION OF AFFECTION SCORES AND GOODNESS OF FIT

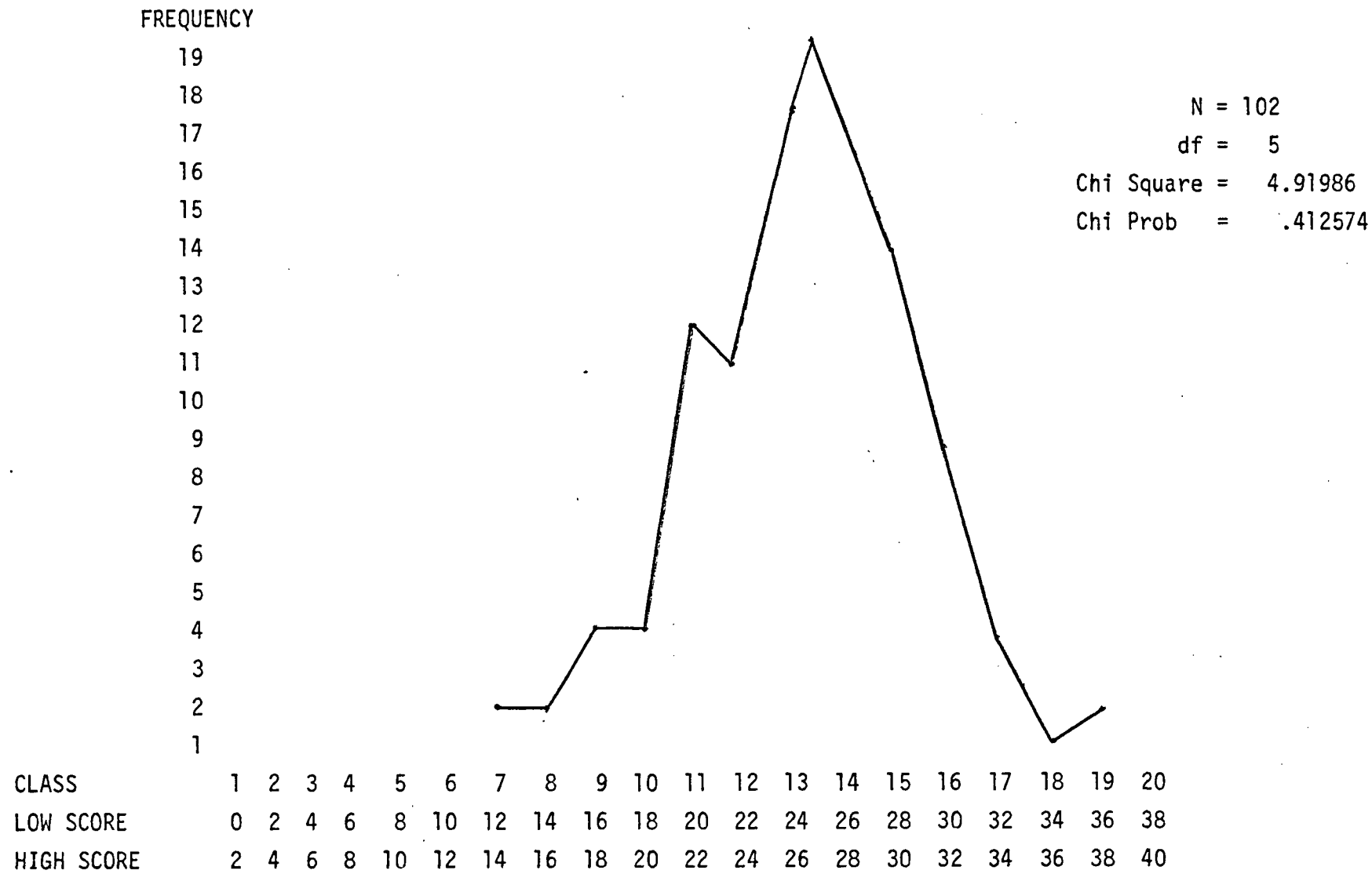


FIGURE 17

FREQUENCY DISTRIBUTION OF SOCIABILITY SCORES AND GOODNESS OF FIT

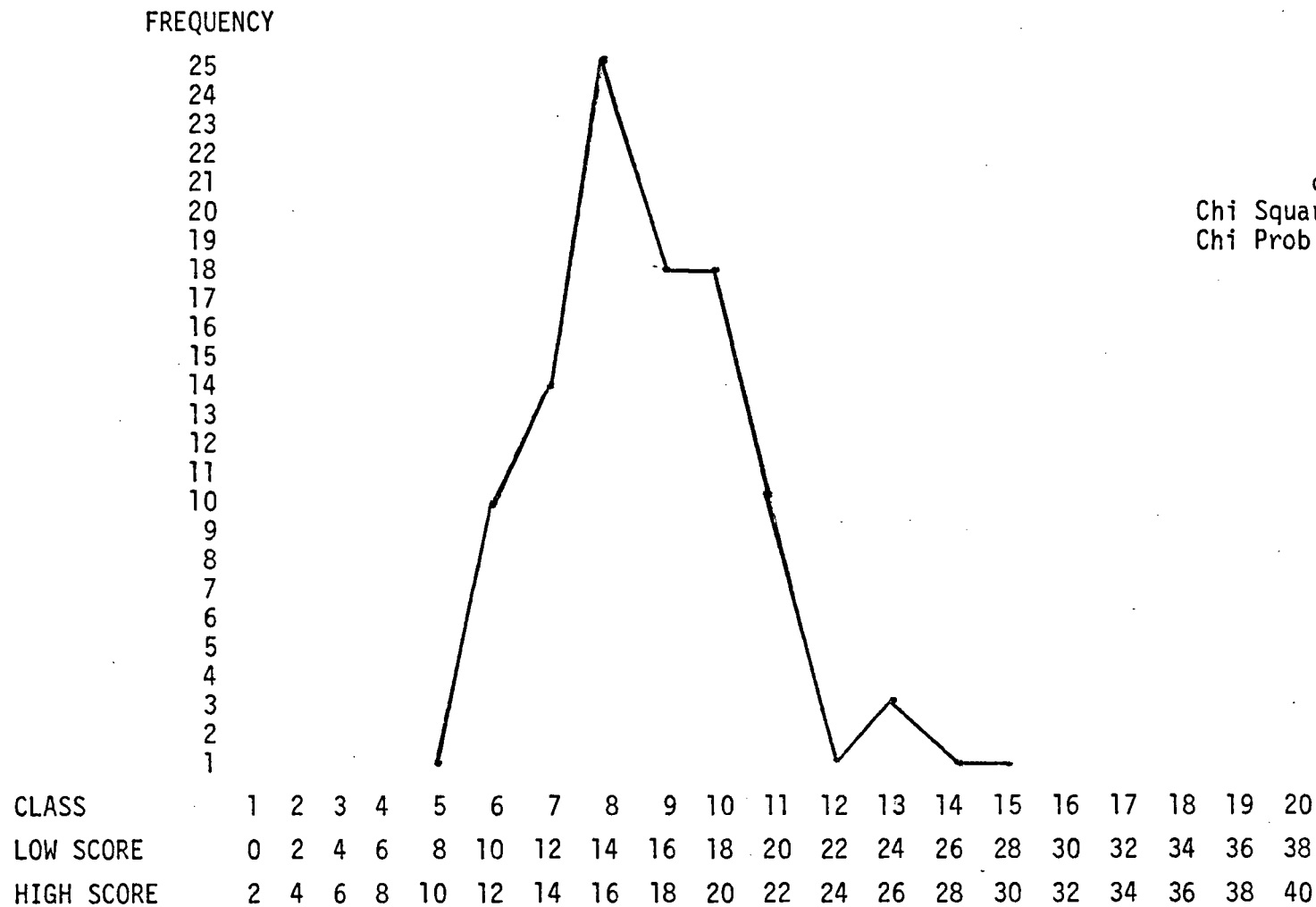


FIGURE 18  
FREQUENCY DISTRIBUTION OF EXHIBITION SCORES AND GOODNESS OF FIT

TABLE 36  
ITEM ANALYSIS 1, DOMINANCE QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	9	8.8	- .46	14.89
	2	2	47	46.1	- .40	17.17
	3	3	40	39.2	.52	19.80
	4	4	6	5.9	.30	20.83
2	1	1	53	52.0	- .66	16.68
	2	2	41	40.2	.49	19.68
	3	3	6	5.9	.26	20.50
	4	4	2	2.0	.28	22.00
3	1	1	45	44.1	- .61	16.56
	2	2	49	48.0	.45	19.35
	3	3	6	5.9	.26	20.50
	4	4	2	2.0	.20	21.00
4	1	1	49	48.0	- .54	16.86
	2	2	44	43.1	.48	19.57
	3	3	8	7.8	.15	19.37
	4	4	1	1.0	.12	16.00
5	1	1	4	3.9	- .02	18.00
	2	2	43	42.2	- .45	16.93
	3	3	39	38.2	.15	18.69
	4	4	15	14.7	.39	20.40
6	1	1	11	10.8	- .42	15.45
	2	2	70	68.6	- .11	18.03
	3	3	18	17.6	.36	20.06
	4	4	3	2.9	.30	21.67

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	5	4.9	- .28	15.60
	2	2	48	47.1	- .41	17.15
	3	3	42	41.2	.29	19.07
	4	4	7	6.9	.50	22.09
8	1	1	23	22.5	- .73	15.00
	2	2	54	52.9	.04	18.30
	3	3	23	22.5	.55	20.65
	4	4	2	2.0	.50	25.00
9	1	1	52	51.0	- .65	16.65
	2	2	34	33.3	.33	19.35
	3	3	15	14.7	.50	21.00
	4	4	1	1.0	.04	19.00



TABLE 37  
ITEM ANALYSIS, COMPETITION QUESTION

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	10	9.8	- .5	16.10
	2	2	31	30.4	- .36	19.23
	3	3	38	37.3	.15	21.71
	4	4	23	22.5	.58	24.65
2	1	1	46	45.1	- .45	19.39
	2	2	39	38.2	.27	22.23
	3	3	12	11.8	.19	22.75
	4	4	5	4.9	.18	23.40
3	1	1	38	37.3	- .70	18.00
	2	2	41	40.2	.22	21.48
	3	3	19	18.6	.47	24.32
	4	4	4	3.9	.31	25.50
4	1	1	10	9.8	- .37	17.50
	2	2	41	40.2	- .35	19.61
	3	3	25	24.5	.10	21.64
	4	4	26	25.5	.55	24.19
5	1	1	36	35.3	- .33	19.56
	2	2	38	37.3	- .09	20.68
	3	3	21	20.6	.27	22.86
	4	4	7	6.9	.40	25.57
6	1	1	14	13.7	- .34	18.29
	2	2	45	44.1	- .31	19.89
	3	3	28	27.5	.31	22.79
	4	4	15	14.7	.37	24.00

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT B-ST	MEAN SCORE
7	1	1	31	30.4	- .45	18.77
	2	2	51	50.0	- .11	20.69
	3	3	18	17.6	.62	25.50
	4	4	2	2.0	.29	26.50
8	1	1	19	18.6	- .67	16.42
	2	2	53	52.0	- .12	20.68
	3	3	23	22.5	.42	23.65
	4	4	7	6.9	.63	28.14
9	1	1	34	33.3	- .48	18.79
	2	2	53	52.0	.17	21.62
	3	3	11	10.8	.32	24.00
	4	4	4	3.9	.27	25.00
10	1	1	34	33.3	- .48	18.79
	2	2	53	52.0	.17	21.62
	3	3	11	10.8	.32	24.00
	4	4	4	3.9	.27	25.00

TABLE 38  
ITEM ANALYSIS, AGGRESSION QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	30	29.4	- .75	15.33
	2	2	56	54.9	.25	20.09
	3	3	9	8.8	.56	25.50
	4	4	6	5.9	.42	
2	1	1	40	39.2	- .49	17.20
	2	2	44	43.1	.22	20.18
	3	3	12	11.8	.12	20.42
	4	4	6	5.9	.45	24.83
3	1	1	39	38.2	- .61	16.64
	2	2	54	52.9	.27	20.20
	3	3	5	4.9	.34	23.80
	4	4	4	3.9	.54	27.75
4	1	1	23	22.5	- .43	16.61
	2	2	55	53.9	- .24	18.55
	3	3	17	16.7	.54	23.29
	4	4	7	6.9	.46	24.57
5	1	1	22	21.6	- .71	14.77
	2	2	56	54.9	.06	19.50
	3	3	17	16.7	.49	22.94
	4	4	7	6.9	.35	23.29
6	1	1	27	26.5	- .56	16.15
	2	2	60	58.8	.09	19.58
	3	3	12	11.8	.57	24.33
	4	4	3	2.9	.18	22.33

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	49	48.0	- .47	17.63
	2	2	37	36.3	.12	19.84
	3	3	11	10.8	.35	22.55
	4	4	5	4.9	.41	24.80
8	1	1	14	13.7	- .36	16.36
	2	2	44	43.1	- .35	17.91
	3	3	33	32.4	.34	21.00
	4	4	11	10.8	.47	23.64
9	1	1	39	38.2	- .67	16.38
	2	2	55	53.9	.43	20.67
	3	3	7	6.9	.41	24.00
	4	4	1	1.0	.27	26.00
10	1	1	34	33.3	- .57	16.53
	2	2	51	50.0	.19	19.98
	3	3	8	7.8	.25	22.00
	4	4	9	8.8	.43	23.67

TABLE 39  
ITEM ANALYSIS, MISTRUST QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	44	43.1	- .75	16.82
	2	2	39	38.2	.23	20.90
	3	3	11	10.8	.38	23.55
	4	4	8	7.8	.61	26.63
2	1	1	42	41.2	- .67	17.02
	2	2	39	38.2	.10	20.33
	3	3	12	11.8	.39	23.42
	4	4	8	7.8	.61	26.63
3	1	1	17	16.7	- .47	16.24
	2	2	54	52.9	- .24	19.06
	3	3	25	24.5	.53	23.12
	4	4	6	5.9	.33	24.00
4	1	1	19	18.6	- .59	15.63
	2	2	59	57.8	.08	20.10
	3	3	17	16.7	.28	22.00
	4	4	7	6.9	.33	24.29
5	1	1	18	17.6	- .27	17.89
	2	2	68	66.7	- .07	19.69
	3	3	11	10.8	.24	22.18
	4	4	5	4.9	.33	24.40
6	1	1	20	19.6	- .43	16.85
	2	2	57	55.9	- .21	19.19
	3	3	18	17.6	.51	23.67
	4	4	7	6.9	.37	24.29

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	24	23.5	- .63	15.92
	2	2	49	48.0	.00	19.88
	3	3	19	18.6	.29	22.00
	4	4	9	8.8	.60	26.22
8	1	1	38	37.3	- .56	17.29
	2	2	46	45.1	.11	20.30
	3	3	13	12.7	.38	23.23
	4	4	5	4.9	.51	26.80
9	1	1	41	40.2	- .52	17.61
	2	2	52	51.0	.27	20.81
	3	3	8	7.8	.49	25.38
	4	4	1	1.0	.00	20.00
10	1	1	19	18.6	- .57	15.79
	2	2	62	60.8	- .14	19.48
	3	3	15	14.7	.44	23.47
	4	4	6	5.9	.63	27.83

TABLE 40  
ITEM ANALYSIS, DETACHMENT QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	50	49.0	- .49	20.10
	2	2	38	37.0	.05	22.45
	3	3	10	9.8	.50	27.90
	4	4	4	3.9	.51	31.00
2	1	1	6	5.9	- .08	21.00
	2	2	56	54.9	- .32	20.98
	3	3	27	26.5	.18	23.37
	4	4	13	12.7	.31	25.31
3	1	1	66	64.7	- .70	20.06
	2	2	20	19.6	.33	24.80
	3	3	11	10.8	.32	25.73
	4	4	5	4.9	.60	31.60
4	1	1	44	43.1	- .46	20.
	2	2	37	36.3	- .03	22.
	3	3	14	13.7	.31	25.21
	4	4	6	5.9	.64	31.50
5	1	1	31	30.4	- .55	18.77
	2	2	43	42.2	- .13	21.56
	3	3	19	18.6	.35	25.05
	4	4	9	8.8	.70	30.67
6	1	1	32	31.4	- .42	19.66
	2	2	39	38.2	- .22	21.03
	3	3	17	16.7	.19	23.88
	4	4	14	13.7	.70	29.00

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	36	35.3	- .46	19.64
	2	2	44	43.1	.00	22.18
	3	3	14	13.7	.33	25.36
	4	4	8	7.8	.45	27.89
8	1	1	49	48.	- .63	19.47
	2	2	27	26.5	- .02	22.00
	3	3	17	16.7	.46	26.24
	4	4	9	8.8	.62	29.67
9	1	1	27	26.5	- .53	18.59
	2	2	51	50.0	- .07	21.88
	3	3	19	18.6	.39	25.37
	4	4	5	4.9	.64	32.20
10	1	1	35	34.3	- .55	19.06
	2	2	49	48.0	.03	22.31
	3	3	12	11.8	.38	26.17
	4	4	5	4.9	.66	32.60
11	1	1	13	12.7	- .05	21.62
	2	2	23	22.5	- .38	19.35
	3	3	43	42.2	.12	22.74
	4	4	23	22.5	.28	24.22



TABLE 41  
ITEM ANALYSIS, INHIBITION QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	20	19.6	- .51	13.05
	2	2	36	35.3	- .38	14.67
	3	3	29	28.4	.27	17.76
	4	4	17	16.7	.72	21.47
2	1	1	12	11.8	- .44	12.58
	2	2	36	35.3	- .45	14.36
	3	3	29	28.4	.10	16.86
	4	4	25	24.5	.72	20.48
3	1	1	24	23.5	- .50	13.46
	2	2	49	48.0	- .19	15.71
	3	3	21	20.6	.37	18.71
	4	4	8	7.8	.63	22.87
4	1	1	14	13.7	- .51	12.36
	2	2	32	31.4	- .17	15.53
	3	3	40	39.2	.09	16.72
	4	4	16	15.7	.58	20.63
5	1	1	22	21.6	- .42	13.77
	2	2	44	43.1	- .26	15.36
	3	3	25	24.5	.29	18.00
	4	4	11	10.8	.61	21.82
6	1	1	25	24.5	- .63	12.80
	2	2	47	46.1	- .23	15.53
	3	3	12	11.8	.13	17.50
	4	4	18	17.6	.92	22.72

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	22	21.6	- .43	13.73
	2	2	56	54.9	- .29	15.48
	3	3	14	13.7	.41	19.57
	4	4	10	9.8	.67	22.60

TABLE 42  
ITEM ANALYSIS, SUBMISSIVENESS QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	47	46.1	- 0.22	20.53
	2	2	41	40.2	- 0.04	21.15
	3	3	10	9.8	.08	22.00
	4	4	4	3.9	.63	29.75
2	1	1	26	25.5	- .40	19.12
	2	2	42	41.2	- .24	20.38
	3	3	24	23.5	.30	23.00
	4	4	9	8.8	.58	26.78
3	1	1	24	23.5	- .38	19.13
	2	2	40	39.2	- .25	20.27
	3	3	31	30.4	.40	23.23
	4	4	7	6.9	.43	25.86
4	1	1	14	13.7	- .19	19.86
	2	2	52	51.0	- .48	19.79
	3	3	30	29.4	.38	23.13
	4	4	6	5.9	.62	28.33
5	1	1	1	1.0	.12	24.
	2	2	30	29.4	- .24	20.
	3	3	57	55.9	- .04	21.
	4	4	14	13.7	.37	24.14
6	1	1	8	7.8	- .17	19.62
	2	2	66	64.7	- .32	20.53
	3	3	24	23.5	.15	22.13
	4	4	4	3.9	.79	32.00

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	46	45.1	- .62	19.11
	2	2	38	37.3	.06	21.53
	3	3	9	8.8	.44	25.44
	4	4	9	8.8	.63	27.22
8	1	1	43	42.2	- .58	19.12
	2	2	42	41.2	.09	21.64
	3	3	10	9.8	.19	23.00
	4	4	7	6.9	.82	30.00
9	1	1	8	7.8	- .30	18.25
	2	2	36	25.3	- .38	19.64
	3	3	39	38.2	.15	21.90
	4	4	19	18.6	.48	24.42
10	1	1	57	55.9	- .46	19.96
	2	2	38	37.3	.10	21.68
	3	3	4	3.9	.66	30.25
	4	4	3	2.9	.53	29.33

TABLE 43  
ITEM ANALYSIS, SUCCORANCE QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	35	34.3	- .46	19.43
	2	2	49	48.0	.07	21.59
	3	3	12	11.8	.38	29.42
	4	4	6	5.9	.33	25.00
2	1	1	32	31.4	- .38	19.66
	2	2	42	41.2	- .06	21.17
	3	3	22	21.6	.27	22.95
	4	4	6	5.9	.45	26.33
3	1	1	10	9.8	- .01	21.30
	2	2	53	52.0	- .28	20.55
	3	3	31	30.4	.20	22.29
	4	4	8	7.8	.22	23.50
4	1	1	24	23.5	- .54	18.46
	2	2	47	46.1	.06	21.57
	3	3	22	21.6	.34	23.32
	4	4	9	8.8	.24	23.44
5	1	1	16	15.7	- .53	17.75
	2	2	47	46.1	- .27	20.49
	3	3	27	26.5	.44	23.59
	4	4	12	11.8	.43	24.75
6	1	1	31	30.4	- .40	19.55
	2	2	59	57.8	.14	21.75
	3	3	7	6.9	.12	22.57
	4	4	5	4.9	.46	26.80

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	46	45.1	- .68	19.09
	2	2	48	47.1	.43	22.77
	3	3	5	4.9	.29	24.80
	4	4	3	2.9	.50	28.67
8	1	1	37	36.3	- .69	18.59
	2	2	51	50.0	.27	22.22
	3	3	11	10.8	.46	25.18
	4	4	3	2.9	.43	27.67
9	1	1	35	34.3	- .47	19.40
	2	2	54	52.9	.21	22.00
	3	3	10	9.8	.28	23.80
	4	4	3	2.9	.27	25.33
10	1	1	23	22.5	- .38	19.26
	2	2	61	59.8	- .06	21.23
	3	3	12	11.8	.30	23.75
	4	4	6	5.9	.45	26.33
11	1	1	63	61.8	- .34	20.56
	2	2	33	32.4	.18	22.18
	3	3	4	3.9	.28	25.00
	4	4	2	2.0	.33	27.00

TABLE 44  
ITEM ANALYSIS, ABASEMENT QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	38	37.3	- .61	15.58
	2	2	37	36.3	- .05	17.92
	3	3	22	21.6	.50	21.09
	4	4	5	4.9	.62	25.80
2	1	1	35	34.3	- .40	16.37
	2	2	48	47.1	- .11	17.73
	3	3	16	15.7	.62	22.50
	4	4	3	2.9	.21	21.33
3	1	1	24	23.5	- .59	14.75
	2	2	44	43.1	- .21	17.34
	3	3	24	23.5	.55	21.25
	4	4	10	9.8	.44	22.10
4	1	1	14	13.7	- .58	13.71
	2	2	59	57.8	- .09	17.88
	3	3	24	23.5	.27	19.62
	4	4	5	4.9	.64	26.00
5	1	1	39	38.2	- .71	15.23
	2	2	35	34.3	.03	18.26
	3	3	18	17.6	.43	21.00
	4	4	10	9.8	.62	23.70
6	1	1	52	51.0	- .53	16.46
	2	2	40	9.2	.37	19.86
	3	3	7	6.9	.16	19.86
	4	4	3	2.9	.32	23.00

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	69	67.6	- .31	17.43
	2	2	29	28.4	.20	19.14
	3	3	2	2.0	.08	19.50
	4	4	2	2.0	.41	25.50
8	1	1	32	31.4	- .52	15.69
	2	2	46	45.1	- .21	17.39
	3	3	12	11.8	.36	21.08
	4	4	12	11.8	.76	24.42
9	1	1	6	5.9	- .17	16.17
	2	2	21	20.6	- .26	16.52
	3	3	54	52.9	.02	18.17
	4	4	21	20.6	.33	20.14



TABLE 45  
ITEM ANALYSIS, DEFERENCE QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	9	8.8	- .48	19.22
	2	2	10	9.8	- .29	21.30
	3	3	52	51.0	- .16	23.58
	4	4	31	30.4	.62	27.42
2	1	1	10	9.8	- .48	19.40
	2	2	46	45.1	- .41	22.57
	3	3	37	36.3	.50	26.46
	4	4	9	8.8	.36	27.89
3	1	1	3	2.9	- .37	18.00
	2	2	29	28.4	- .53	21.24
	3	3	48	47.1	.22	24.94
	4	4	22	21.6	.45	27.05
4	1	1	17	16.7	- .56	19.88
	2	2	43	42.2	- .12	23.63
	3	3	34	33.3	.37	25.94
	4	4	7	6.9	.41	28.86
5	1	1	45	44.1	- .31	22.91
	2	2	34	33.3	.03	24.26
	3	3	18	17.6	.22	25.78
	4	4	5	4.9	.32	28.40
6	1	1	25	24.5	- .31	22.24
	2	2	51	50.0	- .20	23.45
	3	3	17	16.7	.33	26.65
	4	4	9	8.8	.43	28.56

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	4	3.9	- .18	21.50
	2	2	40	39.2	- .63	21.40
	3	3	44	43.1	.21	24.98
	4	4	14	13.7	.71	30.07
8	1	1	24	23.5	- .56	20.67
	2	2	39	38.2	- .20	23.26
	3	3	28	27.5	.29	25.79
	4	4	11	10.8	.69	30.64
9	1	1	12	11.8	- .63	18.50
	2	2	39	38.2	- .33	22.67
	3	3	40	39.2	.33	25.57
	4	4	11	10.8	.65	30.27
10	1	1	13	12.7	- .36	21.00
	2	2	61	59.8	- .16	23.67
	3	3	26	25.5	.37	26.31
	4	4	2	2.0	.33	30.50

TABLE 46  
ITEM ANALYSIS, AGREEABLENESS QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	7	6.9	- .53	19.00
	2	2	14	13.7	- .45	20.79
	3	3	38	37.3	.11	23.87
	4	4	43	42.2	.43	24.79
2	1	1	5	4.9	- .60	17.60
	2	2	14	13.7	- .26	21.93
	3	3	58	56.9	- .06	23.36
	4	4	24	23.5	.53	25.92
3	1	1	7	6.9	- .63	18.14
	2	2	15	14.7	- .30	21.73
	3	3	48	47.1	.01	23.52
	4	4	32	31.4	.52	25.47
4	1	1	3	2.9	- .23	20.67
	2	2	18	17.6	- .21	27.39
	3	3	61	59.8	- .03	23.44
	4	4	19	18.6	.36	25.37
5	1	1	5	4.9	- .38	19.80
	2	2	22	21.6	- .44	21.41
	3	3	40	39.2	- .11	23.15
	4	4	35	34.3	.64	25.74
6	1	1	7	6.9	- .09	22.71
	2	2	21	20.6	- .45	21.29
	3	3	52	51.0	.05	23.62
	4	4	22	21.6	.44	25.59

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	5	4.9	- .19	21.60
	2	2	30	29.4	- .46	21.70
	3	3	47	46.1	.25	24.19
	4	4	19	18.6	.35	25.32
8	1	1	7	6.9	- .35	20.57
	2	2	27	26.5	- .42	21.74
	3	3	51	50.0	.19	23.98
	4	4	17	16.7	.46	26.06

TABLE 47  
ITEM ANALYSIS, NURTURANCE QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	3	2.9	- .20	23.33
	2	2	22	21.6	- .65	22.45
	3	3	49	48.0	- .11	26.04
	4	4	28	27.5	.79	30.54
2	1	1	0	0	0.0	0.0
	2	2	37	36.3	- .61	23.81
	3	3	48	47.1	.20	27.10
	4	4	17	16.7	.54	30.18
3	1	1	2	2.0	- .24	22.0
	2	2	26	25.5	- .67	22.73
	3	3	49	48.0	.13	26.86
	4	4	25	24.5	.59	29.76
4	1	1	14	13.7	- .10	25.64
	2	2	45	44.1	- .40	24.96
	3	3	27	26.5	+ .20	27.48
	4	4	16	15.7	.42	29.44
5	1	1	5	4.9	- .32	22.40
	2	2	38	37.3	- .57	24.03
	3	3	45	44.1	.27	27.42
	4	4	14	13.7	.61	31.14
6	1	1	3	2.9	- .37	20.67
	2	2	20	19.6	- .44	23.60
	3	3	58	56.9	.16	26.88
	4	4	20	19.6	.39	28.90

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	7	6.9	- .38	22.86
	2	2	61	59.8	- .32	25.56
	3	3	29	28.4	.33	28.10
	4	4	5	4.9	.46	32.20
8	1	1	3	2.9	- .54	18.00
	2	2	35	34.3	- .53	24.06
	3	3	43	42.2	.08	26.72
	4	4	21	20.6	.73	30.95
9	1	1	4	3.9	- .43	20.50
	2	2	43	42.2	- .46	24.67
	3	3	49	48.0	.34	27.59
	4	4	6	5.9	.60	33.33
10	1	1	24	23.5	- .49	23.63
	2	2	59	57.8	.09	26.66
	3	3	17	16.7	.42	29.35
	4	4	2	2.0	.09	28.00

TABLE 48  
ITEM ANALYSIS, AFFECTION QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	7	6.9	- .49	14.14
	2	2	32	31.4	- .34	17.31
	3	3	39	38.2	.04	18.85
	4	4	24	23.5	.60	21.71
2	1	1	7	6.9	- .35	15.43
	2	2	35	34.3	- .55	16.57
	3	3	38	37.3	.30	19.79
	4	4	21	20.6	.53	21.57
3	1	1	8	7.8	- .47	14.62
	2	2	42	41.2	- .31	17.69
	3	3	44	43.1	.36	19.86
	4	4	8	7.8	.36	21.88
4	1	1	2	2.0	- .24	15.00
	2	2	25	24.5	- .66	15.52
	3	3	51	50.0	- .01	18.69
	4	4	24	23.5	.75	22.42
5	1	1	6	5.9	- .44	14.33
	2	2	28	27.5	- .45	16.68
	3	3	40	39.2	.02	18.77
	4	4	28	27.5	.64	21.61
6	1	1	10	9.8	- .55	14.40
	2	2	50	49.0	- .28	17.90
	3	3	33	32.4	.39	20.30
	4	4	8	7.8	.49	23.00

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	11	10.8	- .69	13.55
	2	2	38	37.3	- .36	17.39
	3	3	41	40.2	.37	19.98
	4	4	12	11.8	.64	23.33



TABLE 49  
ITEM ANALYSIS, SOCIABILITY QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	12	11.8	- .68	18.17
	2	2	46	45.1	- .15	24.24
	3	3	34	33.3	.45	27.29
	4	4	10	9.8	.27	27.80
2	1	1	12	11.8	- .52	19.75
	2	2	32	31.4	- .39	22.72
	3	3	40	39.2	.42	26.88
	4	4	18	17.6	.36	27.78
3	1	1	30	29.4	- .32	23.03
	2	2	32	31.4	- .01	24.81
	3	3	21	20.6	.14	25.90
	4	4	19	18.6	.25	26.84
4	1	1	12	11.8	- .26	22.33
	2	2	36	35.3	- .15	24.11
	3	3	26	25.5	.04	25.15
	4	4	28	27.5	.30	26.75
5	1	1	20	19.6	- .65	20.00
	2	2	38	37.3	- .12	24.29
	3	3	24	23.5	.16	25.96
	4	4	20	19.6	.63	29.65
6	1	1	8	7.8	- .61	17.62
	2	2	46	45.1	- .24	23.89
	3	3	26	25.5	.14	25.77
	4	4	22	21.6	.52	28.59

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	20	19.6	- .70	19.60
	2	2	37	36.3	- .17	24.05
	3	3	28	27.5	.41	27.43
	4	4	17	16.7	.47	28.76
8	1	1	14	13.7	- .70	18.50
	2	2	52	51.0	- .17	24.25
	3	3	21	20.6	.33	27.29
	4	4	15	14.7	.55	29.73
9	1	1	21	20.6	- .60	20.52
	2	2	37	36.3	- .07	24.54
	3	3	34	33.3	.26	26.29
	4	4	10	9.8	.53	30.60
10	1	1	5	4.9	- .37	19.40
	2	2	29	28.4	- .52	21.76
	3	3	55	53.9	.38	26.07
	4	4	13	12.7	.43	29.00

TABLE 50  
ITEM ANALYSIS, EXHIBITION QUESTIONS

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
1	1	1	26	25.5	- .64	12.69
	2	2	49	48.0	.00	15.90
	3	3	15	14.7	.22	17.40
	4	4	12	11.8	.66	20.92
2	1	1	31	30.4	- .56	13.39
	2	2	49	48.0	.13	16.29
	3	3	16	15.7	.34	18.12
	4	4	6	5.9	.36	19.67
3	1	1	7	6.9	- .22	13.71
	2	2	48	47.1	- .47	14.42
	3	3	34	33.3	.33	17.26
	4	4	13	12.7	.41	18.92
4	1	1	26	25.5	- .69	12.46
	2	2	50	49.0	- .02	15.84
	3	3	19	18.6	.40	18.32
	4	4	7	6.9	.66	22.43
5	1	1	42	41.2	- .63	13.67
	2	2	40	39.2	.14	16.42
	3	3	12	11.8	.33	18.42
	4	4	8	7.8	.57	21.12
6	1	1	28	27.5	- .31	14.43
	2	2	64	62.7	- .07	15.73
	3	3	8	7.8	.61	21.50
	4	4	2	2.0	.19	19.00

QUESTION	STATEMENT	VALUE	NO. WHO CHOSE ITEM	PERCENT WHO CHOSE ITEM	BISERIAL CORRELATION COEFFICIENT	MEAN SCORE
7	1	1	35	34.3	- .53	13.74
	2	2	48	47.1	.19	16.48
	3	3	14	13.7	.12	16.71
	4	4	5	4.9	.62	23.00
8	1	1	60	58.8	- .64	14.32
	2	2	28	27.5	.79	16.79
	3	3	8	7.8	.48	20.38
	4	4	6	5.9	.53	21.50