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THE TEMPORAL ORIENTATION OF EMOTIONALLY DISTURBED BOYS

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THE TEMPORAL ORIENTATION OF EMOTIONALLY DISTURBED BOYS

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# THE TEMPORAL ORIENTATION OF EMOTIONALLY DISTURBED BOYS

## CHAPTER I

### INTRODUCTION

The compulsory education laws that now exist in most states require that more children now remain in the public schools for a longer period of time. These laws have brought school authorities face to face with the necessity of dealing with not only the normal but with the deviate child as well. There now may be found in the public schools many types of deviate, or exceptional, children who heretofore dropped out at a relatively early age and were lost to public education as a result of their inability to adjust to the curriculum and environment of a regular classroom.

Children with marked orthopedical, visual, and auditory handicaps make up one segment of this deviate group. Children with varying degrees of mental retardation constitute another major category of exceptional children now enrolled in the public schools. While in some states schools are still attempting to provide for these children in classrooms with normal children and standard curricula, most states are coming to recognize the educational problems of

the exceptional child. They are attempting to provide specialized classes and/or educational programs designed to meet the individual needs of these children.

Still other children must be recognized and included in the broad classification of deviate or exceptional children. These are emotionally disturbed children. These children, because of serious emotional conflict in their lives, stand out as "misfits" in a class of normal children. Because of their disruptive, distracting, and oftentimes antisocial behavior in the classroom, they pose a major problem to the teachers and administrators who are charged with the responsibility of their education. An indication of the magnitude of this problem is revealed by Hill, whose research shows that these children constitute about 44 per cent of all referrals made to the Division of Pupil Guidance in the Oklahoma City Schools.<sup>1</sup> This problem is presented graphically in Figure 1.

Hill's findings tend to be supported by the report given by the California Association of School Psychologists and Psychometrists which states that 40 per cent of all referrals are children who have as their major problem some type of emotional disturbance. In this regard boys tend to

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<sup>1</sup>Virgil T. Hill, "The Szondi Test with Children: A Critical Evaluation of Theory and Practice" (unpublished Ph.D. dissertation, University of Oklahoma, 1954), pp. 79-80.

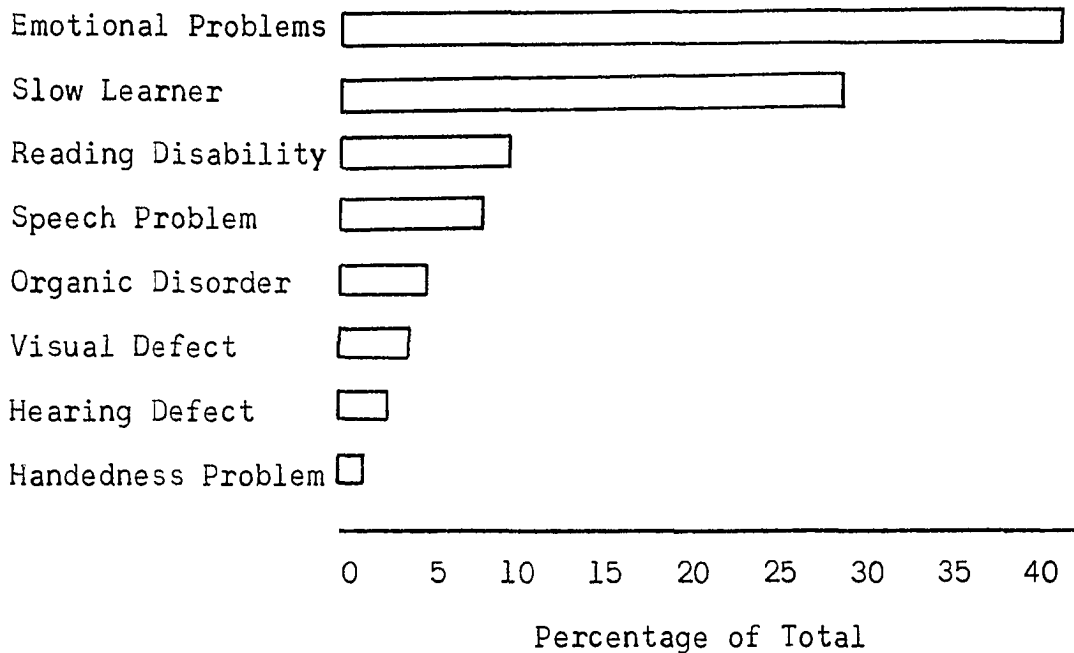


Figure 1. Type of Problems Referred to the Division of Pupil Guidance.

outnumber girls in a ratio of three to one.<sup>1</sup>

While much has been done to provide for the educational needs of these children, recent reports indicate that a still unknown number of children remain out of school because they are afraid to go or because they are so troublesome to the school that they have to be excluded. Many more are in need of special classes but such are not available. Consequently, they are compelled to struggle through a regular school program from which they derive little benefit and

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<sup>1</sup>California Association of School Psychologists and Psychometrists, Research Committee, "Emotionally Disturbed Children in California," California Journal of Educational Research, V (1954), pp. 116-120.



in which they create problems with their classmates.<sup>1</sup>

### Theory

Many causes of emotional disturbance among children have been postulated and investigated. Some of the findings of research in the last ten to twelve years are briefly stated.

In his research Bowlby concludes that prolonged separation of the mother figure and the child from three months up to three years of age produces extensive and lasting detrimental effects on the personalities of children. These effects, he believes, result in personality characteristics that are common to the psychopathic type of individual.<sup>2</sup>

Green suggests that the middle class boy (and, perhaps to a degree, every American) is predisposed to neurosis because of the inconsistency of the social expectations which he faces (e.g. "standing up for your rights" on the one hand and "being a perfect little gentleman" on the other).<sup>3</sup>

Another area of research indicates that neurotic patterns are possibly transmitted from the elders in the family

<sup>1</sup>S. S. Richards and F. P. Simsar, "Report from a School for Emotionally Disturbed Children," Mental Hygiene, XXXIV (1950), pp. 611-619.

<sup>2</sup>John Bowlby, "Maternal Care and Mental Health," World Health Organization: Monograph Series (1952), p. 194.

<sup>3</sup>H. W. Green, "The Middle Class Male Child and Neurosis," American Sociological Review, XI (1946), pp. 31-41.

to the children. By comparing the Rorschach data of each of 46 emotionally disturbed children with the Rorschachs of both their parents, it was concluded that emotional disturbance in the children was attributable to the cumulative reinforcement effects of living with parents possessing pathological personality traits.<sup>1</sup>

Others, approaching the problem from a different point of view, lay stress upon the importance of heredity as a determining factor in personality disorders.<sup>2</sup> However, those holding to this view constitute a minority among publishing research workers.

Then again Ellingson, in an inconclusive study, reports signs of disordered physiological reaction to stress situations for children of schizophrenic parents as opposed to normal children; and he also finds some evidence of similarity between children of schizophrenic parents and children who are behavior problems.<sup>3</sup> The number of children used in his study was so small, and his findings so incomplete, that the results, although interesting, must be viewed as only suggestive.

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<sup>1</sup>W. W. Morris and Alma L. Nicholas, "Intrafamilial Personality Configurations among Children with Primary Behavior Disorders and Their Parents: A Rorschach Investigation," Journal of Clinical Psychology, VI (1950), pp. 309-319.

<sup>2</sup>Lauretta Bender, "Childhood Schizophrenia," Psychiatric Quarterly, XXVII (1953), pp. 663-681.

<sup>3</sup>R. J. Ellingson, "Responses to Physiological Stress in Normal and Behavior Problem Children," Journal of Genetic Psychology, LXXXIII (1953), pp. 19-29.

Considerable work has been done in comparing emotionally disturbed children with normal children in an attempt to discover and point out differences that might be common to one group or another. Worthy of mention in this respect is the work of Carlile<sup>1</sup> and Cox and Sargent.<sup>2</sup>

Carlile, using the Thematic Apperception Test, made a comparative study of 30 neurotic and 30 normal British adolescent girls. In a statistical analysis she found that the TAT made no real differentiation between her groups.

Cox and Sargent used the Thematic Apperception Test in a study of 15 emotionally disturbed and 15 emotionally stable seventh grade boys. Their findings indicate that the principal difference between their groups was "constriction" or emotional flat type responses on the part of the emotionally disturbed group. However, when the records of the fifteen emotionally stable boys were sent to eight TAT analysts, eleven of the fifteen were judged to be emotionally disturbed! As a result of this finding one wonders if, in the training of analysts, too much attention has been focused on the abnormal and not enough on the normal development of personality.

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<sup>1</sup>June St. H. Carlile, "The Thematic Apperception Test Applied to Neurotic and Normal Adolescent Girls," British Journal of Medical Psychology, XXV (1952), pp. 244-248.

<sup>2</sup>Beverly Cox and Helen Sargent, "TAT Responses of Emotionally Disturbed and Emotionally Stable Children: A Clinical Judgement versus Normative Data," Journal of Projective Techniques, XIV (1950), pp. 60-74.

Although studies have been made in many areas, there is no published study comparing emotionally disturbed and normal children in terms of temporal orientation, of how they perceive their aims and goals in relation to a time sequence.

Temporal orientation is an aspect of personality development which only recently has been investigated. It is a part of the process by which an individual organizes his experiences.<sup>1</sup> In discussing temporal orientation Allison stated:

The concept of temporal orientation is an important characteristic in the lives of individuals . . . for it reflects their past parental influence as they have affected one aspect of their character structure, the degree of their moralistic awareness; to a certain extent, it reflects one's present adjustment, one's ego integration; and it reflects the individual's awareness of the future, his goals and aspirations.<sup>2</sup>

The initial investigation in temporal orientation was conducted by Leshan. In investigating temporal orientation as related to social class he found that the upper social class members are primarily oriented toward the past. Tradition plays an important part in the lives of members of this social group, and the orientation tends to be toward

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<sup>1</sup>Erik H. Erikson, "Childhood and Tradition in Two American Indian Tribes," in Personality in Nature, Society, and Culture, ed. Clyde Kluckhohn and Henry A. Murray (New York: Alfred A. Knopf, 1948), p. 193.

<sup>2</sup>Harry W. Allison, Jr., The Temporal Orientation of the Juvenile Delinquent (Ph.D. dissertation, University of Oklahoma, 1955), p. 10.

tradition and the past.

The member of the middle socio-economic group plans for the future and acts upon these plans. His tension relief sequences are longer than those of a member of the lower class, and he is able to forego immediate gratification for long range goals and desires.

The member of the lower socio-economic class is oriented toward a quick succession of tension reliefs. He does not plan toward goals far into the future nor frustrate himself for long periods of time. The immediate present is his primary concern. The future is generally too vague, and its goals, rewards, and punishments are too uncertain to have real motivating value to him.

This study also revealed differences in the time span of the members of lower and middle social classes. Those in the middle group tended to see themselves in a longer temporal sequence than did those in the lower class.<sup>1</sup>

Following Leshan's lead, Allison tested the hypothesis that factors other than social class might reflect differences in temporal orientation. He found that delinquent males did, in fact, differ significantly from their normal counterparts. They were primarily oriented toward the present (temporal direction) with a shorter span of action (temporal span)

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<sup>1</sup>L. L. Leshan, "Time Orientation and Social Class," Journal of Abnormal and Social Psychology, XLVII (1952), pp. 589-593.

and were less able to relate about the past and future (temporal fluency) than were normal boys.<sup>1</sup>

A more recent study comparable to Allison's, a study of delinquent females, demonstrated even more conclusively these differences in temporal orientation between delinquent and non-delinquent children.<sup>2</sup>

In still another study concerned with the investigation of temporal orientation, Manney conducted a comparative study of good and poor readers from the fourth, fifth, and sixth grades. Her results revealed no significant differences between good and poor readers on any of the temporal variables of Direction, Span, and Fluency.<sup>3</sup>

These studies present an interesting but conflicting picture. In the study of two clinical groups, namely delinquent males and females, differences have been shown to exist on all three of the temporal variables investigated (direction, span, and fluency) between delinquents and normals. On the other hand, differences were not found between poor and good readers in terms of their orientation in time.

Manney has pointed out in her study that investigation

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<sup>1</sup>Allison, op. cit., pp. 45-46.

<sup>2</sup>Nancy B. Farley, "The Temporal Orientation of the Female Juvenile Delinquent" (unpublished research, University of Oklahoma, 1958), pp. 43-44.

<sup>3</sup>Agnes A. Manney, The Temporal Orientation of the Retarded Reader (Ph.D. dissertation, University of Oklahoma, 1957), pp. 36-38.

of the personality of retarded readers has shown evidence of maladjustment.<sup>1</sup> It might be argued that the degree of maladjustment of the delinquent is greater than that of the poor reader, and that differences in degrees account for differences in time orientation. However, it is possible that still another variable exists that might influence an individual's orientation in time.

There is a difference in chronological age of the children in the various groups in these recent studies. Allison's subjects ranged in age from 12-0 to 17-0 with a mean chronological age of 14.52 for the delinquent group and a mean age of 14.48 for the non-delinquent group.<sup>2</sup> Farley's female delinquents ranged in age from 12-0 to 17-0 with a mean chronological age of 15.61 and 15.25 for the delinquents and non-delinquents, respectively.<sup>3</sup>

On the other hand Manney's subjects ranged in age from 9-3 to 13-11 with a mean age of 11-0 for the good readers and a 11-4 mean age for the poor readers.<sup>4</sup> There is a minimal difference of at least three years between her subjects and those studied by Allison and Farley. This age difference suggests the possibility that perhaps the younger

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<sup>1</sup>Ibid., pp. 8-14.

<sup>2</sup>Allison, op. cit., p. 15.

<sup>3</sup>Farley, op. cit., p. 21.

<sup>4</sup>Manney, op. cit., p. 29.

children, even though they manifest some maladjustment, have not as yet learned to utilize time as a mechanism of defense in attempting to adjust to their environment.

The purpose of this study was to determine experimentally if differences existed in the temporal orientation of emotionally disturbed and normal children. If emotionally disturbed children do differ significantly from normal children in any aspect of their orientation in time, it is conceivable that a knowledge of this difference might have considerable import in terms of planning a program for these children in the classroom.



## CHAPTER II

### STATEMENT OF THE PROBLEM

In the initial investigation by Leshan, it was demonstrated that differences in temporal orientation exist between different social class groups. Later Allison, and more recently Farley, found that differences in temporal orientation can be observed in types of personalities, namely delinquents, as well as in types of social classes. On the other hand, Manney, studying a younger age group than Allison and Farley, found little difference in temporal orientation between her good and poor readers.

This study is concerned with the temporal orientation of still another clinical group--emotionally disturbed children. The purpose of this study is to determine experimentally whether the temporal orientation of the emotionally disturbed child differs from that of the normal child, to determine if chronological age is a factor in temporal orientation, and to determine if temporal orientation is related more closely to emotional adjustment or social class membership. In short, this study seeks to examine relationships between three variables of temporal orientation and emotional

adjustment, socio-economic status and chronological age.

The three variables involved in temporal orientation are: (1) direction, (2) span, and (3) fluency. Temporal direction is defined as placing the action of a story in the past, present, or future. Temporal span is defined as the length of time stated by the subject involving the action of the story. Temporal fluency is defined as the number of words given in response to questions concerning the past, present, and future.

In order to determine statistically if differences in temporal orientation between these various groups exist, twenty-seven specific hypotheses were tested. These hypotheses were divided into three series. The N for groups tested in Series I was eighty, for Series II, forty, and for Series III, twenty.

#### Series I

1. There is no significant difference in temporal orientation, as revealed by the responses of the subjects, on the variables of direction, span, and fluency, between normal and emotionally disturbed boys.

2. There is no significant difference in temporal orientation, as revealed by the responses of the subjects, on the three temporal variables, between younger and older boys.

3. There is no significant difference in temporal

orientation, as revealed by the responses of the subjects on the three temporal variables, between lower social class and middle social class boys.

### Series II

1. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables between younger emotionally disturbed and older emotionally disturbed boys.

2. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between younger normal and older normal boys.

3. There is no significant difference in temporal orientation, as revealed by the responses of the subjects, on the three temporal variables between lower social class emotionally disturbed and middle social class emotionally disturbed boys.

4. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between lower social class normal and middle social class normal boys.

5. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between middle social class normal and middle social class emotionally disturbed boys.

6. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between lower social class normal and lower social class emotionally disturbed boys.

7. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between younger normal and younger emotionally disturbed boys.

8. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between younger lower social class and younger middle social class boys.

9. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between older normal and older emotionally disturbed boys.

10. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between older lower social class and older middle social class boys.

11. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between younger lower social class and older lower social class boys.

12. There is no significant difference in temporal orientation, as revealed by the responses of the subjects

on the three temporal variables, between younger middle social class and older middle social class boys.

### Series III

1. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between younger lower social class normal and younger lower social class emotionally disturbed boys.

2. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between younger middle social class normal and younger middle social class emotionally disturbed boys.

3. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between older lower social class normal and older lower social class emotionally disturbed boys.

4. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between older middle social class normal and older middle social class emotionally disturbed boys.

5. There is no significant difference in temporal orientation, as revealed by the responses of the subjects

on the three temporal variables, between younger middle social class normal and older middle social class normal boys.

6. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables between younger middle social class emotionally disturbed and older middle social class emotionally disturbed boys.

7. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables between younger lower social class normal and older lower social class normal boys.

8. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between younger lower social class emotionally disturbed and older lower social class emotionally disturbed boys.

9. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between younger lower social class normal and younger middle social class normal boys.

10. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between younger lower social class disturbed and younger middle social class emotionally disturbed boys.

11. There is no significant difference in temporal

orientation, as revealed by the responses of the subjects on the three temporal variables, between older lower social class normal and older middle social class normal boys.

12. There is no significant difference in temporal orientation, as revealed by the responses of the subjects on the three temporal variables, between older lower social class emotionally disturbed and older middle social class emotionally disturbed boys.

## CHAPTER III

### PROCEDURE OF THE STUDY

#### The Population

A brief description of the general school setting from which the subjects were chosen seems essential if one is to understand fully the definition of the "disturbed" and "normal" groups.

The entire population of the Oklahoma City Public Schools from which the subjects were selected includes some 54,000 students attending any one of 79 elementary, 5 junior high, and 11 high schools. Depending upon the district in which a school has been established, the socio-economic status of the home from which the child comes may vary from the "socially deprived" to the "socially elite."

Since 1950 the Oklahoma City School System has had, as one of its services to the pupils, the Department of Pupil Services. For administrative purposes this department consists of the following divisions: Child Guidance Services, Visiting Counselors and Attendance Workers, Employment Certification, and Testing and Evaluation. The staff consists of a director, two clinical psychologists, one educational



psychologist, eleven visiting counselors, two attendance workers, and four secretarial assistants. This entire department in general and the division of child guidance in particular is specifically concerned with assisting each child to adjust to the demands of his school and social environment.

Most of the referrals made to this division come from the visiting counselors, although school principals, teachers, counselors, or parents can refer children who need help. When a child is referred, the parents of the child are interviewed by the visiting counselor (social case worker), and supplemental information is obtained from other agencies who might have seen the child. This case history information, including developmental history, medical information, school and home adjustment, is presented to the division of child guidance, and the child is then scheduled for a diagnostic evaluation with a psychologist. On the basis of such evaluations, recommendations are made designed to help each child to make a better adjustment and as a result achieve maximum benefit from the educational program offered him.

During the school years 1954-55 and 1955-56, some 1681 referrals were seen by the division of child guidance. The percentage of this number, according to type of referral, is shown in Figure 1, page 3. The percentage of these referrals in relation to type of school from which they came is shown in Figure 2.

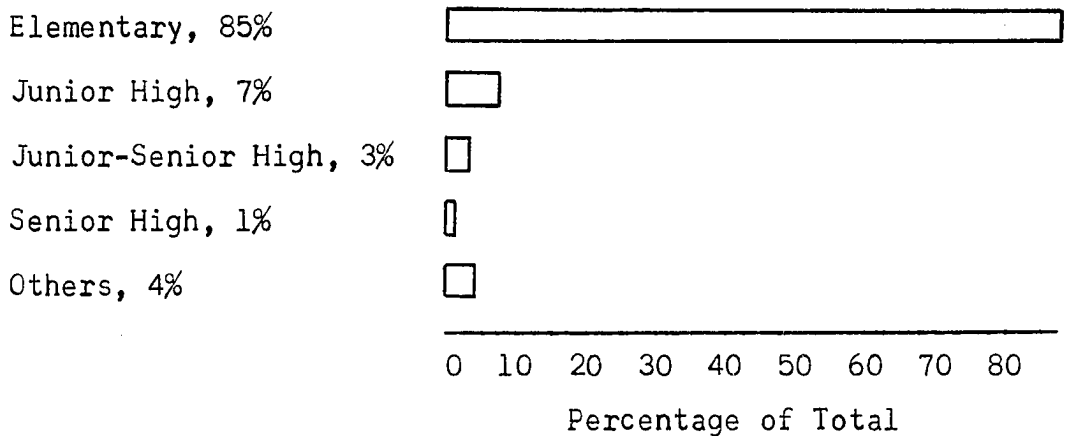


Figure 2. Number of Referrals according to School Level.

### Subjects

One hundred and sixty subjects enrolled in the Oklahoma City schools were used in this study. In order to test the nine hypotheses that chronological age is not a factor in temporal orientation, these subjects were divided equally into two age ranges: one that corresponds generally with the age group studied by Manney and one that corresponds with the age group studied by Allison. These shall hereafter be referred to in this study as the "younger" group and "older" group, respectively.

The younger group was composed of 80 white boys enrolled in the fourth, fifth, and sixth grades. These subjects were within the chronological age range of 10 years-0 months to 12 years-6 months and within the intellectual range of I.Q. 80 to I.Q. 130. The older group consisted of an equal number of white boys enrolled in the sixth, seventh, and

eighth grades. The chronological age range for this group was from 12 years-7 months to 15 years; their intelligence range corresponded to that of the younger group.

The mean chronological age for the younger group was: younger normal, 11-2; younger disturbed, 11-0. The mean I.Q. for these two groups was 106.50 and 99.47, respectively. The mean chronological age for the older normal group was 13-9; the mean chronological age for the older disturbed was 13-11. The mean I.Q.'s for these groups were: older normals, 105.20; older disturbed, 97.68.

Selection. One-half of the subjects of both the normal and disturbed groups was selected from a low and one-half from a middle socio-economic class. In most cases the area of the city in which he resided, the father's occupation and income, and data the teacher gained through the home visitation program was sufficient to classify the subject according to social class. In some cases, not so easily classified, a modified form of the "Index of Status Characteristic" method of measuring social class, described by Warner et al., was used. This method of determining social class status is based upon information derived from four characteristics: (1) Occupation, (2) Source of income, (3) House type, (4) Dwelling area. Each of these four status characteristics are rated on a seven-point scale which ranges from "1"--very high status value, to "7"--very low status value. These rating scores are then combined into a single numerical

index by assigning each one a weight and then securing a total score of the separate scores.<sup>1</sup> For this study a total weighted score range of 23 to 50 was used to designate middle class subjects. A total weighted score of 51 and above resulted in a classification of low social class. For a more complete description of this method of measuring social class the reader is referred to Warner, et al., Social Class in America.

Normal. These subjects, in addition to meeting the criteria of age, sex, race, intellectual range, and socio-economic group were selected on the basis of achievement test scores and the evaluation of teachers and principals as to whether they were:

1. Spontaneous and outgoing.
2. Relating well to peers and adults.
3. Effective and productive in the school setting.
4. Well liked by the other children.
5. Motivated toward school and the school program.
6. With few or no neuropathic mannerisms, tics, compulsions, severe fears, anxieties, etc.
7. Cooperative and reasonable conforming.
8. Relatively consistent and stable in behavior.
9. Achieving at, or near, expectancy in academic areas.

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<sup>1</sup>Loyd W. Warner, Marchia Meeker and Kenneth Eels, Social Class in America (Chicago: Science Research Associates, 1949), pp. 121-175.

Disturbed. The subjects for this group were restricted to children who, because of their disturbing, maladjustive behavior in the school, had been referred to the Department of Pupil Services. On the basis of information supplied in the social and medical history, combined with the information gained through the use of psychological and diagnostic tests, these children were classified as "emotionally disturbed" by the staff of this department. Since each clinical case is unique and no child's adjustment can be expected to meet all the criteria listed, in general these children had:

1. Emotional problems such as temper outbursts, crying, instability, impulsiveness or sullenness.
2. Problems of social relationships such as fighting and other anti-social behavior.
3. Problems of classroom discipline such as reaction to authority, negativism, aggression, defiance, and being a disturbing influence.
4. Personality problems such as withdrawing or bizarre behavior.
5. Learning problems such as low achievement, failure to apply themselves, short interest and attention spans.
6. Behavior problems such as stealing, lying, truancy, and deviate sexual behavior.

These criteria are in general agreement with the characteristics of emotionally disturbed children classified

by Hill<sup>1</sup> and others.<sup>2</sup>

### Instrument of Measure

Selected Thematic Apperception Test Cards were used as the stimulus material. In addition to cards 5, 12 M, 14 and 17 BM, used by Allison and Manney, cards 1, 3 BM, 8 BM, 9 BM, 12 BG, and 13 B were included in the pilot study. Because cards 12 BG and 13 B proved inappropriate for the tasks of this study, they were excluded from the list. Eight cards were used in the final study.

These cards are described by Murray as follows:

- Card 1. A young boy is contemplating a violin which rests on a table in front of him.
- Card 3 BM. On the floor against a couch is the huddled form of a boy with his head bowed on his right arm. Beside him on the floor is a revolver.
- Card 5. A middle aged woman is standing on the threshold of a half-opened door looking into a room.
- Card 8 BM. An adolescent boy looks straight out of the picture. The barrel of a rifle is visible at one side, and in the background is the scene of a surgical operation like a reverie-image.
- Card 9 BM. Four men in overalls are lying on the grass taking it easy.
- Card 12 M. A young man is lying on a couch with his eyes closed. Leaning over him is the giant form of an elderly man, his hand stretched out above the face of the reclining figure.
- Card 14. The silhouette of a man (or woman) against a bright window. The rest of the picture is totally black.

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<sup>1</sup>Hill, op. cit., pp. 83-84.

<sup>2</sup>California Association of School Psychologists and Psychometrists, Research Committee, California Journal of Educational Research, V (1934), pp. 116-120.

Card 17 BM. A naked man is clinging to a rope. He is in the act of climbing up or down.<sup>1</sup>

### The Experimental Task

Allison's procedure with modifications was followed in this study. The procedure seemed appropriate for securing the necessary data.

Each subject was seen individually. After securing the identifying data of name, age, address, and occupation of the parents, the following three tasks were administered:

Task 1. The E . . . stated:

This has nothing to do with the school. I am making a survey on the development of imagination, and I would like you to tell me some stories so that I can get a measure of your imagination. Although I will write down your stories as you tell them to me, no one else will see what I have written. Now I want you to simply tell me a story. It makes no difference whether the story is true or whether it concerns you or someone else. Go ahead when you are ready. The subject's story was recorded by E. Then Task 2 was administered.<sup>2</sup>

Task 2. For this task four Thematic Apperception Test cards, numbers 1, 8 BM, 14, and 17 BM were shown to the subject. The instructions were as follows:

Now I am going to show you several pictures. Take a good look at each one and make up a story about the picture. Here is the first one. (E presents the first card.) Tell me a story about this one.<sup>3</sup>

The same procedure was followed for the other three selected cards. The subject's response to each card was recorded verbatim.

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<sup>1</sup>Henry A. Murray, Thematic Apperception Test Manual (Cambridge: Harvard University Press, 1943), pp. 19-20.

<sup>2</sup>Allison, op. cit., p. 19.

<sup>3</sup>Ibid., p. 19.

Task 3. For this task four more cards, numbers 3 BM, 5, 9 BM, and 12 M, were used. The verbal instructions were as follows:

Now I am going to show you several more pictures as before, and again I want you to tell me a story about the picture. Then I will ask you a few questions about each picture. Take a look at this one and tell me a story about it. (E presents the first card, allows the S sufficient time to inspect it, and then records the S's story.)

After the S had given his story in response to the card and it had been recorded by the E, the S was then questioned about the story with the following three questions: (1) "What is happening right now in this picture?" (2) "What happened before or what led up to this situation?" (3) "What will happen or what will the outcome be?" These questions, of course, are oriented toward the present, past, and future, respectively. The S's initial story and his responses to each of the three questions were recorded by the E.<sup>1</sup>

The same procedure was followed for the other three cards used in Task 3.

The nine stories which the S gave were then reviewed, and he was asked to classify each story according to whether he believed the action of the story occurred in the past, present, or future. The pilot study suggested some elaboration of this should be made with the younger subjects. In order to maintain uniformity in instructional procedure and administration of the tasks the elaboration was made with both the "younger" and "older" groups. The question was worded as follows: "Is this story something that has already happened, is it something that is happening right now, or is it something that is going to happen?" The order of the question was randomized to prevent the subject from having a tendency to respond in one given way. In addition the subject was asked to estimate how much time elapsed from the beginning to the end of each story. In all instances the judgement and the estimates were made by the subject, not the examiner.

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<sup>1</sup>  
Ibid., pp. 19-20.



### Treatment of the Data

The three aspects of temporal orientation are temporal direction, temporal span, and temporal fluency. Allison defines them as follows:

1. Temporal Direction. The report of the subjects of the temporal direction of each of their stories--that is, each subject's judgement of whether the action of the story occurred primarily in the past, present, or future.

2. Temporal Span. The report of the subject of the time span of the action of their stories.

3. Temporal Fluency. The number of words given in response to the three questions which were designed to elicit elaboration concerning the past, present, and the future.<sup>1</sup>

Temporal Direction. Each subject was asked to indicate whether the action of each of his nine stories occurred in the past, the present, or the future. The temporal direction of each subject was assessed according to the category in which the greatest number of his responses occurred.

Temporal Span. Each subject was asked to estimate the span of time elapsing from the beginning to the end of each of their nine stories. These estimates were then arranged into four categories as follows: (1) less than one hour, (2) one to twelve hours, (3) twelve hours to fourteen days, (4) over fourteen days. The temporal span of each subject was then assessed as the particular category in which the greatest number of his estimates occurred.

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<sup>1</sup>Allison, op. cit., p. 21.

Temporal Fluency. The temporal fluency for each subject was assessed on the basis of the total number of words given in response to questions concerning the past, present, and future in Task 3. Each one was classified according to the category in which he was most fluent or used the greatest number of words.

The Chi Square technique was used to determine the significance of differences between the group for each of these three temporal variables.

## CHAPTER IV

### THE RESULTS

Testing the twenty-seven null hypotheses on each of the variables of direction, span, and fluency as stated in Chapter II, resulted in a total of eighty-one comparisons between groups. These are presented in three series, with three hypotheses in Series I, twelve hypotheses in Series II, and twelve hypotheses in Series III. For this study the required level of statistical significance was set at .05.<sup>1</sup>

#### Series I

In Series I, three hypotheses were tested between various groups with an N of eighty in each group. Because of the small expected frequencies in the future category in the tables for temporal direction, "past" and "future" categories were combined into a category of "not present" for these variables only. These combinations were necessary for the calculating of chi square and resulted in the loss of one degree of freedom.

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<sup>1</sup>Henry E. Garrett, Statistics in Psychology and Education (New York: Longmans, Green & Co., 1950), p. 244.

No categories were grouped in Series I for the tables of temporal span and temporal fluency.

The results obtained in testing the first hypothesis in Series I, which compares groups of eighty normal and eighty emotionally disturbed boys, are given for temporal direction in Table 1, for temporal span in Table 2, and for temporal fluency in Table 3.

TABLE 1  
COMPARISON OF 80 NORMAL AND 80 EMOTIONALLY DISTURBED BOYS  
ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Normal	80	53	27	1	.672
Disturbed	80	48	32		
P = .50					

In the test of the first hypothesis in Series I, where the number of subjects in each group was 80 and social class status and chronological age were disregarded, statistically significant differences were obtained between normal and emotionally disturbed subjects on the variables of temporal span and temporal fluency. The disturbed subjects tended to relate more of their stories with time spans of

TABLE 2

COMPARISON OF 80 NORMAL AND 80 EMOTIONALLY DISTURBED BOYS  
ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses*				df	Chi <sup>2</sup>
		1 hr. or less	1-12 hrs.	12 hrs. 14 days	Over 14 days		
Normal	80	36	7	12	25	3	8.332
Disturbed	80	53	5	10	12		
							P = .05

\*With the exception of a few extreme cases, the temporal span of both the normal and emotionally disturbed groups ranged from one minute to 2,000 years.

TABLE 3

COMPARISON OF 80 NORMAL AND 80 EMOTIONALLY DISTURBED BOYS  
ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Normal	80	31	6	43	2	12.698
Disturbed	80	18	22	40		
						P = .01

"less than 1 hr." while the normal subjects related stories distributed about equally between the "less than 1 hr." and the "over 14 days" time spans. In response to the temporal fluency variable both groups tended to be more fluent about

the future; however, a much larger number of disturbed subjects than normal subjects fell into the present category. Hypothesis one of Series I was rejected on the variables of span and fluency and sustained on the variable of temporal direction.

The results obtained in testing the second hypothesis in Series I, which compared groups of eighty younger and eighty older boys, are given for temporal direction in Table 4, for temporal span in Table 5, and for temporal fluency in Table 6.

TABLE 4  
COMPARISON OF 80 OLDER AND 80 YOUNGER BOYS  
ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Younger	80	60	20	1	9.692
Older	80	41	39		
P = .01					

In the three tests of the second hypothesis in Series I where the number of subjects in each group was eighty and where emotional adjustment and social class status were disregarded, statistically significant differences at the .01 level were obtained between younger and older boys on the

TABLE 5

COMPARISON OF 80 OLDER AND 80 YOUNGER BOYS  
ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses				df	Chi <sup>2</sup>
		1 hr. or less	1-12 hrs.	12 hrs. 14 days	Over 14 days		
Younger	80	42	10	16	12	3	14.726
Older	80	47	22	6	25		
							P = .01

TABLE 6

COMPARISON OF 80 OLDER AND 80 YOUNGER BOYS  
ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Younger	80	22	12	46	2	2.054
Older	80	27	16	37		
						P = .50

variables of direction and span. More of the younger subjects tended to relate stories in the category of "not present" while the older subjects tended to fairly evenly divide between the two categories. On the variable of temporal span, both the groups gave a majority of their stories with less than one hour span, but a significantly larger number of the

older subjects than younger subjects gave stories with time spans of over 14 days. Statistically significant differences were not obtained between the two groups on the variable of temporal fluency. Hypothesis two of Series I was rejected on the variables of temporal direction and span and sustained on the variable of temporal fluency.

The results obtained in testing the third hypothesis in Series I which compared groups of eighty lower social class and eighty middle social class boys are given for temporal direction in Table 7, temporal span in Table 8, and for temporal fluency in Table 9.

TABLE 7

COMPARISON OF 80 LOWER SOCIAL CLASS AND 80 MIDDLE SOCIAL CLASS BOYS ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Lower	80	48	32	1	.972
Middle	80	54	26		
P = .50					

In the three tests of the third hypothesis in Series I, where the number of subjects in each group was eighty and chronological age and emotional adjustment were disregarded, significant differences were not obtained between lower and middle class subjects on the three temporal variables of



COMPARISON OF 80 LOWER SOCIAL CLASS AND 80 MIDDLE SOCIAL CLASS BOYS ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses				df	Chi <sup>2</sup>
		1 hr. or less	1-12 hrs.	12 hrs. 14 days	Over 14 days		
Lower	80	44	6	12	18	3	.282
Middle	80	44	7	10	19		

P = .98

COMPARISON OF 80 LOWER SOCIAL CLASS AND 80 MIDDLE SOCIAL CLASS BOYS ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Lower	80	24	14	42	2	.032
Middle	80	25	14	41		
P = .99						

Series II

In Series II, twelve hypotheses were tested between various groups--with an N of forty in each group. Because of the small expected frequencies for cells in some tables, certain categories were combined for the purpose of calculating chi square. These combinations are listed as follows: In all temporal direction tables the categories of "past" and "future" were combined into a category of "not present," with a resulting loss of one degree of freedom in calculating chi square for these tables. In all temporal span tables the categories of "one hour or less" and "1-12 hours" were combined into a category of "less than 12 hours," and the categories of "12 hours to 14 days" and "over 14 days" were combined into a category of "12 hours and over." This resulted in the loss of two degrees of freedom in calculating chi square for these tables of temporal span.

In the test of the first hypothesis in Series II, groups of forty younger emotionally disturbed and forty older emotionally disturbed boys were compared on the three temporal variables of direction, span and fluency. The obtained results are given for temporal direction in Table 10, for temporal span in Table 11 and for temporal fluency in Table 12.

In the three tests of the first hypothesis in Series II, the number of subjects in each group was forty, the variable of emotional adjustment was held constant, and the

TABLE 10

COMPARISON OF 40 YOUNGER EMOTIONALLY DISTURBED  
AND 40 OLDER EMOTIONALLY DISTURBED ON  
THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Younger	40	32	8	1	13.332
Older	40	16	24		
P = .01					

TABLE 11

COMPARISON OF 40 YOUNGER EMOTIONALLY DISTURBED  
AND 40 OLDER EMOTIONALLY DISTURBED ON  
THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Younger	40	28	12	1	.248
Older	40	30	10		
P = .70					

variable of social class status was disregarded. Statistically significant differences at the .01 level were obtained between these two groups on the variable of temporal direction. More of the younger subjects placed their stories in the "not present" category while more of the older subjects

TABLE 12

COMPARISON OF 40 YOUNGER EMOTIONALLY DISTURBED  
AND 40 OLDER EMOTIONALLY DISTURBED ON  
THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Younger	40	7	11	22	2	1.288
Older	40	11	11	18		
						P = .70

placed their stories in the direction of "present." Statistically significant differences were not obtained between these two groups on the variables of temporal span and temporal fluency. Hypothesis one of Series II was rejected on the variable of temporal direction and sustained on the variables of temporal span and temporal fluency.

The results obtained in testing the second hypothesis in Series II which compared groups of forty younger normal and forty older normal boys are given for temporal direction in Table 13, for temporal span in Table 14, and for temporal fluency in Table 15.

In the three tests of the second hypothesis of Series II, the number of subjects in each group was forty, the variable of emotional adjustment was held constant, and the variables of social class status was disregarded. Statistically significant differences were not obtained between younger

TABLE 13

COMPARISON OF 40 YOUNGER NORMAL AND 40 OLDER NORMAL BOYS  
ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Younger	40	28	12	1	.502
Older	40	25	15		
					P = .50

TABLE 14

COMPARISON OF 40 YOUNGER NORMAL AND 40 OLDER NORMAL BOYS  
ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Younger	40	24	16	1	.804
Older	40	19	21		
					P = .50

TABLE 15

COMPARISON OF 40 YOUNGER NORMAL AND 40 OLDER NORMAL BOYS  
ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Younger	40	15	1	24	2	1.872
Older	40	16	5	19		P = .50

and older normal subjects on the three temporal variables of direction, span, and fluency. Hypothesis two of Series II was consistently sustained.

The results obtained in testing the third hypothesis of Series II which compared forty lower social class emotionally disturbed boys and forty middle social class emotionally disturbed boys are given for temporal direction in Table 16, for temporal span in Table 17, and for temporal fluency in Table 18.

TABLE 16

COMPARISON OF 40 LOWER SOCIAL CLASS EMOTIONALLY DISTURBED  
AND 40 MIDDLE SOCIAL CLASS EMOTIONALLY DISTURBED BOYS  
ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Lower class disturbed	40	23	17	1	.206
Middle class disturbed	40	25	15		P = .70

In the three tests of the third hypothesis of Series II, the number of subjects in each group was forty, the variable of emotional adjustment was held constant, and the variable of chronological age was disregarded. Statistically significant differences were not obtained between low social

TABLE 17

COMPARISON OF 40 LOWER SOCIAL CLASS EMOTIONALLY DISTURBED  
AND 40 MIDDLE SOCIAL CLASS EMOTIONALLY DISTURBED BOYS  
ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Lower class disturbed	40	28	12	1	.248
Middle class disturbed	40	30	10		P = .70

TABLE 18

COMPARISON OF 40 LOWER SOCIAL CLASS EMOTIONALLY DISTURBED  
AND 40 MIDDLE SOCIAL CLASS EMOTIONALLY DISTURBED BOYS  
ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Lower class disturbed	40	11	11	18	2	1.288
Middle class disturbed	40	7	11	22		P = .70

class emotionally disturbed and middle social class emotionally disturbed subjects on the three temporal variables of direction, span, and fluency. Hypothesis three of Series II

was consistently sustained.

The results obtained in testing the fourth hypothesis of Series II which compared groups of forty lower social class normal and forty middle social class normal boys are given for temporal direction in Table 19, for temporal span in Table 20, and for temporal fluency in Table 21.

TABLE 19

COMPARISON OF 40 LOWER SOCIAL CLASS NORMAL  
AND 40 MIDDLE SOCIAL CLASS NORMAL BOYS ON  
THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Lower class	40	25	15	1	.910
Middle class	40	29	11		
					P = .50

TABLE 20

COMPARISON OF 40 LOWER SOCIAL CLASS NORMAL  
AND 40 MIDDLE SOCIAL CLASS NORMAL BOYS ON  
THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Lower class	40	22	18	1	.048
Middle class	40	21	19		
					P = .90



TABLE 21

COMPARISON OF 40 LOWER SOCIAL CLASS NORMAL  
AND 40 MIDDLE SOCIAL CLASS NORMAL BOYS ON  
THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Lower class	40	13	3	24	2	.888
Middle class	40	18	3	19		
						P = .70

In the three tests of the fourth hypothesis of Series II, the number of subjects in each group was forty, the variable of emotional adjustment was held constant and the variable of chronological age was disregarded. Statistically significant differences were not obtained between lower social class normal and middle social class normal subjects. Hypothesis four of Series II was consistently sustained.

The results obtained in testing hypothesis five of Series II, which compared groups of forty middle social class normal and forty middle social class emotionally disturbed boys, are given for temporal direction in Table 22, for temporal span in Table 23, and for temporal fluency in Table 24.

In the three tests of the fifth hypothesis of Series II, the number of subjects in each group was forty, the variable of social class status was held constant and the variable of chronological age was disregarded. Statistically

TABLE 22

COMPARISON OF 40 MIDDLE SOCIAL CLASS NORMAL AND 40 MIDDLE  
SOCIAL CLASS EMOTIONALLY DISTURBED BOYS ON  
THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Middle class normal	40	29	11	1	.910
Middle class disturbed	40	25	15	P = .50	

TABLE 23

COMPARISON OF 40 MIDDLE SOCIAL CLASS NORMAL AND 40 MIDDLE  
SOCIAL CLASS EMOTIONALLY DISTURBED BOYS ON  
THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Middle class normal	40	21	19	1	4.380
Middle class disturbed	40	30	10	P = .05	

significant differences were obtained beyond the .05 level on the variables of temporal span and temporal fluency. The emotionally disturbed subjects tended to give the most of their stories with time spans of "less than 12 hours," while

TABLE 24

COMPARISON OF 40 MIDDLE SOCIAL CLASS NORMAL AND 40 MIDDLE  
SOCIAL CLASS EMOTIONALLY DISTURBED BOYS ON  
THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Middle class normal	40	18	3	19	2	7.598
Middle class disturbed	40	7	11	22		P = .05

the normal subjects were about evenly distributed between the two categories. On the variable of temporal fluency the disturbed subjects were most fluent about the "future" but with a significantly larger number of responses in the category of "present" than normal subjects. The normal boys were about evenly distributed between the categories of "past" and "future" with few subjects falling in the present category. Statistically significant differences between these groups were not obtained on the variable of temporal direction. Hypothesis five of Series II was rejected on the variables of temporal span and fluency and sustained on the variable of temporal direction.

The results obtained in testing the sixth hypothesis of Series II, which compared groups of forty lower social class normals and forty lower social class disturbed, are

given for temporal direction in Table 25, for temporal span in Table 26, and for temporal fluency in Table 27.

TABLE 25

COMPARISON OF 40 LOWER SOCIAL CLASS NORMAL AND 40 LOWER SOCIAL CLASS EMOTIONALLY DISTURBED ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Lower class Normal	40	25	15	1	.210
Lower class Disturbed	40	23	17		
					P = .70

TABLE 26

COMPARISON OF 40 LOWER SOCIAL CLASS NORMAL AND 40 LOWER SOCIAL CLASS EMOTIONALLY DISTURBED ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Lower class normal	40	22	18	1	1.920
Lower class disturbed	40	28	12		
					P = .20

TABLE 27

COMPARISON OF 40 LOWER SOCIAL CLASS NORMAL AND 40 LOWER  
SOCIAL CLASS EMOTIONALLY DISTURBED ON THE  
VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Lower class normal	40	13	3	24	2	4.134
Lower class disturbed	40	11	11	18		P = .20

In the three tests of the sixth hypothesis of Series II the number of subjects in each group was forty, the variable of social class status was held constant and the variable of chronological age was disregarded. Statistically significant differences were not obtained between lower social class normal and lower social class disturbed subjects. Hypothesis six of Series II was, thus, consistently sustained.

The results obtained in testing the seventh hypothesis of Series II, which compared groups of forty younger normal and forty emotionally disturbed boys, are given for temporal direction in Table 28, for temporal span in Table 29, and for temporal fluency in Table 30.

In the three tests of the seventh hypothesis of Series II the number of subjects in each group was forty, the variable of chronological age was held constant, and the variable

TABLE 28

COMPARISON OF 40 YOUNGER NORMAL AND 40 YOUNGER EMOTIONALLY  
DISTURBED BOYS ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Normal	40	28	12	1	1.066
Disturbed	40	32	8		
					P = .30

TABLE 29

COMPARISON OF 40 YOUNGER NORMAL AND 40 YOUNGER EMOTIONALLY  
DISTURBED BOYS ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Normal	40	24	16	1	.880
Disturbed	40	28	12		P = .50

TABLE 30

COMPARISON OF 40 YOUNGER NORMAL AND 40 YOUNGER EMOTIONALLY  
DISTURBED BOYS ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Normal	40	15	1	24	2	8.996
Disturbed	40	7	11	22		
						P = .02

of social class status was disregarded. Statistically significant differences were obtained between younger normal and younger disturbed boys. An inspection of Table 30 shows that younger normal subjects were more fluent in the categories of past and future, while the younger disturbed were more fluent in the present and future categories. Statistically significant differences were not obtained between the two groups on the variables of temporal direction and span. Hypothesis seven of Series II was sustained on the variable of temporal direction and span and rejected on the variable of temporal fluency.

The results obtained in testing the eighth hypothesis in Series II which compared forty younger lower social class boys with forty younger middle social class boys are given for temporal direction in Table 31, for temporal span in Table 32, and for temporal fluency in Table 33.

TABLE 31

COMPARISON OF 40 YOUNGER LOWER SOCIAL CLASS AND  
40 YOUNGER MIDDLE SOCIAL CLASS BOYS ON  
THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Lower class	40	28	12	1	1.722
Middle class	40	33	7		
P = .20					

TABLE 32

COMPARISON OF 40 YOUNGER LOWER SOCIAL CLASS AND  
40 YOUNGER MIDDLE SOCIAL CLASS BOYS ON  
THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Lower class	40	27	13	1	.218
Middle class	40	25	15		
					P = .70

TABLE 33

COMPARISON OF 40 YOUNGER LOWER SOCIAL CLASS AND  
40 YOUNGER MIDDLE SOCIAL CLASS BOYS ON  
THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Lower class	40	10	6	24	2	.266
Middle class	40	12	6	22		
						P = .90

In the three tests of the eighth hypothesis of Series II the number of subjects in each group was forty, the variable of chronological age was held constant, while the variable of emotional adjustment was disregarded. Statistically significant differences were not obtained between younger



lower social class and younger middle social class subjects. Hypothesis eight of Series II was consistently sustained.

The results obtained in testing the ninth hypothesis of Series II, which compared forty older normal and forty older emotionally disturbed boys, are given for temporal direction in Table 34, for temporal span in Table 35, and for temporal fluency in Table 36.

TABLE 34

COMPARISON OF 40 OLDER NORMAL AND 40 OLDER EMOTIONALLY DISTURBED BOYS ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Normal	40	25	15	1	4.050
Disturbed	40	16	24		
					P = .05

TABLE 35

COMPARISON OF 40 OLDER NORMAL AND 40 OLDER EMOTIONALLY DISTURBED BOYS ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Normal	40	19	21	1	6.370
Disturbed	40	30	10		
					P = .05

TABLE 36

COMPARISON OF 40 OLDER NORMAL AND 40 OLDER EMOTIONALLY  
DISTURBED BOYS ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Normal	40	16	5	19	2	3.204
Disturbed	40	11	11	18		
						P = .20

In the three tests of the ninth hypothesis of Series II the number of subjects in each group was forty, the variable of chronological age was held constant and the variable of social class status was disregarded. Statistically significant differences were obtained between older normal and older emotionally disturbed subjects on the variables of temporal direction and temporal span. An inspection of Table 34 shows that the older normal subjects gave more stories in the category of "not present" while more of the older emotionally disturbed boys gave stories in the category of "present." Table 35 shows that most of the older normal subjects told stories in the "over 12 hours" category, while most of the older disturbed subjects placed their stories in the "less than 12 hours" category. Statistically significant differences were not found between those two groups on the variable of temporal fluency; however, significance at the .05 level

was approached in the expected direction, i.e. with the emotionally disturbed subjects being more fluent in the category of "present." Hypothesis nine of Series II was rejected on the variables of temporal direction and span and sustained on the variable of temporal fluency.

The results obtained in testing the tenth hypothesis in Series III, which compared forty older lower social class and forty older middle social class boys, are given for temporal direction in Table 37, for temporal span in Table 38, and for temporal fluency in Table 39.

TABLE 37  
COMPARISON OF 40 OLDER LOWER SOCIAL CLASS AND  
40 OLDER MIDDLE SOCIAL CLASS BOYS ON THE  
VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Lower class	40	20	20	1	.050
Middle class	40	21	19		
P = .50					

In the three tests of the tenth hypothesis of Series II, the number of subjects in each group was forty, the variable of chronological age was held constant, and the variable of emotional adjustment was disregarded. Statistically significant differences were not found between older lower

TABLE 38

COMPARISON OF 40 OLDER LOWER SOCIAL CLASS AND  
40 OLDER MIDDLE SOCIAL CLASS BOYS ON THE  
VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Lower class	40	23	17	1	.472
Middle class	40	26	14		
P = .50					

TABLE 39

COMPARISON OF 40 OLDER LOWER SOCIAL CLASS AND  
40 OLDER MIDDLE SOCIAL CLASS BOYS ON THE  
VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Lower class	40	14	8	18	2	.000
Middle class	40	14	8	18		
						P = .99

social class subjects and older middle social class subjects on the variables of temporal direction, span and fluency. Thus, hypothesis ten of Series II was consistently sustained.

The results obtained in testing the eleventh hypothesis of Series II, which compared groups of forty younger lower social class boys and forty older lower social class

boys, are given for temporal direction in Table 40, for temporal span in Table 41, and for temporal fluency in Table 42.

TABLE 40  
COMPARISON OF 40 YOUNGER LOWER SOCIAL CLASS AND  
40 OLDER LOWER SOCIAL CLASS BOYS ON THE  
VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Younger lower class	40	28	12	1	3.334
Older lower class	40	20	20		P = .10

TABLE 41  
COMPARISON OF 40 YOUNGER LOWER SOCIAL CLASS AND  
40 OLDER LOWER SOCIAL CLASS BOYS ON THE  
VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Younger lower class	40	27	13	1	.854
Older lower class	40	23	17		P = .50

TABLE 42

COMPARISON OF 40 YOUNGER LOWER SOCIAL CLASS AND  
40 OLDER LOWER SOCIAL CLASS BOYS ON THE  
VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Younger lower class	40	10	6	24	2	1.810
Older lower class	40	14	8	18		P = .50

In the three tests of the eleventh hypothesis of Series II, the number of subjects in each group was forty, the variable of social class status was held constant, and the variable of emotional adjustment was disregarded. Statistically significant differences were not obtained between these two groups on the variables of temporal direction, span, and fluency. Hypothesis eleven of Series II was consistently sustained.

The results obtained in testing the twelfth hypothesis of Series II, which compared groups of forty younger middle social class boys and forty older middle social class boys are given for temporal direction in Table 43, for temporal span in Table 44, and for temporal fluency in Table 45.

In the three tests of the twelfth hypothesis of Series II, the number of subjects in each group was forty, the

TABLE 43

COMPARISON OF 40 YOUNGER MIDDLE SOCIAL CLASS AND  
40 OLDER MIDDLE SOCIAL CLASS BOYS ON THE  
VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Younger middle class	40	33	7	1	8.204
Older middle class	40	21	19		P = .01

TABLE 44

COMPARISON OF 40 YOUNGER MIDDLE SOCIAL CLASS AND  
40 OLDER MIDDLE SOCIAL CLASS BOYS ON THE  
VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Younger middle class	40	25	15	1	.052
Older middle class	40	26	14		P = .90

variable of social class status was held constant and the variable of emotional adjustment was disregarded. Statistically significant differences were obtained between these

TABLE 45

COMPARISON OF 40 YOUNGER MIDDLE SOCIAL CLASS AND  
40 OLDER MIDDLE SOCIAL CLASS BOYS ON THE  
VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses			df	Chi <sup>2</sup>
		Past	Present	Future		
Younger middle class	40	12	6	22	2	.838
Older middle class	40	14	8	18		P = .70

groups on the variable of temporal direction. An inspection of Table 43 shows that most of the younger subjects placed their stories in the category of the "not present," while the older subjects of this group tends to place stories in both "present" and "not present" categories in equal proportions. Statistically significant differences were not obtained between these two groups on the variables of temporal span and fluency. Hypothesis twelve of Series II was rejected on the variable of temporal direction and sustained on the variables of temporal span and fluency.

### Series III

In Series III twelve hypotheses were tested between various groups with an N of twenty. Because of the small expected frequencies in cells in some tables, certain categories were grouped for the purpose of calculating chi square.



These combinations are listed as follows. In all temporal direction tables "past" and "future" categories were grouped into a "not present" category. This resulted in the loss of one degree of freedom in the chi square calculations of all temporal direction tables. In all temporal span tables the categories of "1 hour or less" and "1-12 hours" were combined into a "less than 12 hours" category, and the categories of "12 hours to 14 days" and "over 14 days" were combined into a category of "12 hours and over." This resulted in a loss of 2 degrees of freedom in calculating chi square for temporal span. Finally in all temporal fluency tables, the "present" and "future" categories were combined into a "not past" category with a resulting loss of 1 degree of freedom in calculating chi square for the temporal fluency tables.

The results obtained in testing the first hypothesis in Series III, which compared twenty younger lower social class normal and twenty younger lower social class disturbed, are given for temporal direction in Table 46, for temporal span in Table 47, and for temporal fluency in Table 48.

In the three tests of the first hypothesis of Series III, the number of subjects in each group was twenty and the variables of social class status and chronological age were held constant. Statistically significant differences were not obtained between younger lower social class normal and younger lower social class emotionally disturbed subjects. Hypothesis one of Series III was consistently sustained.

TABLE 46

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS NORMAL AND  
20 YOUNGER LOWER SOCIAL CLASS EMOTIONALLY DISTURBED  
BOYS ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Lower class normal	20	12	8	1	1.902
Lower class disturbed	20	16	4		P = .20

TABLE 47

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS NORMAL AND  
20 YOUNGER LOWER SOCIAL CLASS EMOTIONALLY DISTURBED  
BOYS ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Lower class normal	20	13	7	1	.114
Lower class disturbed	20	14	6		P = .80

TABLE 48

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS NORMAL AND  
20 YOUNGER LOWER SOCIAL CLASS EMOTIONALLY DISTURBED  
BOYS ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses		df	Chi <sup>2</sup>
		Past	Not Past		
Lower class normal	20	5	15	1	.000
Lower class disturbed	20	5	15		P = .99

The results obtained in testing the second hypothesis of Series III, which compared twenty younger middle social class normal and twenty younger middle social class emotionally disturbed boys, are given for temporal direction in Table 49, for temporal span in Table 50, and for temporal fluency in Table 51.

TABLE 49

COMPARISON OF 20 YOUNGER MIDDLE SOCIAL CLASS NORMAL AND  
20 YOUNGER MIDDLE SOCIAL CLASS EMOTIONALLY DISTURBED  
BOYS ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Middle class normal	20	14	6	1	.000
Middle class disturbed	20	14	6		P = .99

In the three tests of the second hypothesis of Series III, the number of subjects in each group was twenty, with the variables of social class status and chronological age being held constant. Statistically significant differences were obtained between younger middle social class normal and younger middle social class emotionally disturbed subjects on the variable of temporal fluency. The normal subjects were evenly divided between the two categories, while more of

TABLE 50

COMPARISON OF 20 YOUNGER MIDDLE SOCIAL CLASS NORMAL AND  
20 YOUNGER MIDDLE SOCIAL CLASS EMOTIONALLY DISTURBED  
BOYS ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Middle class normal	20	11	9	1	.960
Middle class disturbed	20	14	6		P = .50

TABLE 51

COMPARISON OF 20 YOUNGER MIDDLE SOCIAL CLASS NORMAL AND  
20 YOUNGER MIDDLE SOCIAL CLASS EMOTIONALLY DISTURBED  
BOYS ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses		df	Chi <sup>2</sup>
		Past	Not Past		
Middle class normal	20	10	10	1	5.836
Middle class disturbed	20	2	18		P = .02

the emotionally disturbed subjects fell into the "not past" category. Statistically significant differences were not obtained between these two groups on the variables of temporal direction and temporal span. Hypothesis two of Series III

was rejected on the variable of temporal fluency and sustained on the temporal variables of direction and span.

The results obtained in testing the third hypothesis of Series III, which compared twenty older lower social class normal with twenty older lower social class emotionally disturbed boys, are given for temporal direction in Table 52, for temporal span in Table 53, and for temporal fluency in Table 54.

TABLE 52

COMPARISON OF 20 OLDER LOWER SOCIAL CLASS NORMAL AND  
20 OLDER LOWER SOCIAL CLASS EMOTIONALLY DISTURBED  
BOYS ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Lower class normal	20	13	7	1	3.60
Lower class disturbed	20	7	13		P = .10

In the three tests of the third hypothesis of Series III, the number of subjects in each group was twenty and the variables of social class status and chronological age were held constant. Statistically significant differences were not obtained between older lower social class normal, and older lower social class disturbed subjects. An inspection of Table 52 and Table 53 will show, however, that significance

TABLE 53

COMPARISON OF 20 OLDER LOWER SOCIAL CLASS NORMAL AND  
20 OLDER LOWER SOCIAL CLASS EMOTIONALLY DISTURBED  
BOYS ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Lower class normal	20	9	11	1	2.556
Lower class disturbed	20	14	6		P = .20

TABLE 54

COMPARISON OF 20 OLDER LOWER SOCIAL CLASS NORMAL AND  
20 OLDER LOWER SOCIAL CLASS EMOTIONALLY DISTURBED  
BOYS ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses		df	Chi <sup>2</sup>
		Past	Not Past		
Lower class normal	20	8	12	1	.439
Lower class disturbed	20	6	14		P = .70

at the .05 level in the expected direction was approached on the variables of temporal direction and temporal span. Hypothesis three of Series III was consistently sustained, however.

The results obtained in testing hypothesis four of Series III, which compared groups of twenty older middle social class normal and twenty older middle social class emotionally disturbed boys, are given for temporal direction in Table 55, for temporal span in Table 56, and for temporal fluency in Table 57.

TABLE 55

COMPARISON OF 20 OLDER MIDDLE SOCIAL CLASS NORMAL AND  
20 OLDER MIDDLE SOCIAL CLASS EMOTIONALLY DISTURBED  
BOYS ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Middle class normal	20	12	8	1	.902
Middle class disturbed	20	9	11		P = .50

In the three tests of the fourth hypothesis of Series III, the number of subjects in each group was twenty, and the variables of social class status and chronological age were held constant. Statistically significant differences at the .05 level were obtained between older middle class normal and older middle class disturbed subjects on the variable of temporal span. The normal subjects were equally divided between the two categories while more of the emotionally disturbed

TABLE 56

COMPARISON OF 20 OLDER MIDDLE SOCIAL CLASS NORMAL AND  
20 OLDER MIDDLE SOCIAL CLASS EMOTIONALLY DISTURBED  
BOYS ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Middle class normal	20	10	10	1	3.956
Middle class disturbed	20	16	4		
P = .05					

TABLE 57

COMPARISON OF 20 OLDER MIDDLE SOCIAL CLASS NORMAL AND  
20 OLDER MIDDLE SOCIAL CLASS EMOTIONALLY DISTURBED  
BOYS ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses		df	Chi <sup>2</sup>
		Past	Not Past		
Middle class normal	20	8	12	1	1.026
Middle class disturbed	20	5	15		
P = .50					

subjects told stories with spans of "less than 12 hours."  
Statistically significant differences were not obtained between these two groups on the variables of temporal direction



and fluency. Hypothesis four of Series III was rejected on the variable of temporal span and sustained on the variables of temporal direction and temporal fluency.

The results obtained in testing the fifth hypothesis of Series III, which compared groups of twenty younger middle social class normal and twenty older middle social class normal boys, are given for temporal direction in Table 58, for temporal span in Table 59, and for temporal fluency in Table 60.

TABLE 58  
COMPARISON OF 20 YOUNGER MIDDLE SOCIAL CLASS NORMAL  
AND 20 OLDER MIDDLE SOCIAL CLASS NORMAL BOYS  
ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Younger middle class	20	17	3	1	3.134
Older middle class	20	12	8		P = .10

In the three tests of the fifth hypothesis of Series III the number of subjects in each group was twenty and the variables of social class status and emotional adjustment were held constant. Statistically significant differences were not obtained between younger and older middle social

TABLE 59

COMPARISON OF 20 YOUNGER MIDDLE SOCIAL CLASS NORMAL  
AND 20 OLDER MIDDLE SOCIAL CLASS NORMAL BOYS  
ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Younger middle class	20	11	9	1	.096
Older middle class	20	10	10		P = .50

TABLE 60

COMPARISON OF 20 YOUNGER MIDDLE SOCIAL CLASS NORMAL  
AND 20 OLDER MIDDLE SOCIAL CLASS NORMAL BOYS  
ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses		df	Chi <sup>2</sup>
		Past	Not Past		
Younger middle class	20	10	10	1	.404
Older middle class	20	8	12		P = .70

class subjects on the three temporal variables of direction, span and fluency. Hypothesis five of Series III was consistently sustained.

The results obtained in testing the sixth hypothesis in Series III, which compared groups of twenty younger middle social class disturbed with twenty older middle class emotionally disturbed boys, are shown for temporal direction in Table 61, for temporal span in Table 62, and for temporal fluency in Table 63.

TABLE 61

COMPARISON OF 20 YOUNGER MIDDLE SOCIAL CLASS EMOTIONALLY DISTURBED AND 20 OLDER MIDDLE SOCIAL CLASS EMOTIONALLY DISTURBED BOYS ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Younger middle class	20	16	4	1	5.226
Older middle class	20	9	11		
P = .05					

In the three tests of the sixth hypothesis of Series III, the number of subjects in each group was twenty and the variables of social class status and emotional adjustment were held constant. Significant differences between younger middle social class disturbed and older middle social class disturbed subjects were obtained on the variable of temporal direction. The younger subjects in this group were primarily oriented toward the "not present," while the older subjects

TABLE 62

COMPARISON OF 20 YOUNGER MIDDLE SOCIAL CLASS EMOTIONALLY  
DISTURBED AND 20 OLDER MIDDLE SOCIAL CLASS EMOTIONALLY  
DISTURBED BOYS ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Younger middle class	20	14	6	1	.534
Older middle class	20	16	4		P = .50

TABLE 63

COMPARISON OF 20 YOUNGER MIDDLE SOCIAL CLASS EMOTIONALLY  
DISTURBED AND 20 OLDER MIDDLE SOCIAL CLASS EMOTIONALLY  
DISTURBED BOYS ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses		df	Chi <sup>2</sup>
		Past	Not Past		
Younger middle class	20	2	18	1	1.558
Older middle class	20	5	15		P = .30

were about equally distributed in the two categories. A significantly larger number of these older subjects fell into the "present" category than did the younger subjects.

Hypothesis six of Series III is rejected on the variable of temporal direction and sustained on the variables of temporal span and fluency.

The results obtained in testing hypothesis seven of Series III, which compared groups of twenty younger lower social class normal and twenty older lower social class normal boys, are given in Table 64 for temporal direction, Table 65 for temporal span, and Table 66 for temporal fluency.

TABLE 64

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS NORMAL  
AND 20 OLDER LOWER SOCIAL CLASS NORMAL BOYS  
ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Younger lower class	20	12	8	1	.106
Older lower class	20	13	7		
					P = .80

On the three tests of the seventh hypothesis of Series III, the number of subjects in each group was twenty and the variables of social class status and emotional adjustment were held constant. Significant differences were not obtained between younger and older lower social class

TABLE 65

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS NORMAL  
AND 20 OLDER LOWER SOCIAL CLASS NORMAL BOYS  
ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Younger lower class	20	13	7	1	1.616
Older lower class	20	9	11		P = .20

TABLE 66

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS NORMAL  
AND 20 OLDER LOWER SOCIAL CLASS NORMAL BOYS  
ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses		df	Chi <sup>2</sup>
		Past	Not Past		
Younger lower class	20	5	15	1	1.026
Older lower class	20	8	12		P = .30

normal subjects. Hypothesis seven of Series III was consistently sustained.

The results obtained in testing hypothesis eight of

Series III, which compared groups of twenty younger lower social class emotionally disturbed and twenty older lower social class emotionally disturbed boys, are given for temporal direction in Table 67, for temporal span in Table 68, and for temporal fluency in Table 69.

TABLE 67

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS EMOTIONALLY DISTURBED AND 20 OLDER LOWER SOCIAL CLASS EMOTIONALLY DISTURBED BOYS ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Younger lower class	20	16	4	1	8.286
Older lower class	20	7	13		
P = .01					

TABLE 68

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS EMOTIONALLY DISTURBED AND 20 OLDER LOWER SOCIAL CLASS EMOTIONALLY DISTURBED BOYS ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Younger lower class	20	14	6	1	.000
Older lower class	20	14	6		
P = .99					

TABLE 69

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS EMOTIONALLY  
DISTURBED AND 20 OLDER LOWER SOCIAL CLASS EMOTIONALLY  
DISTURBED BOYS ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses		df	Chi <sup>2</sup>
		Past	Not Past		
Younger lower class	20	5	15	1	.124
Older lower class	20	6	14		P = .80

In the three tests of the eighth hypothesis of Series III, the number of subjects in each group was twenty and the variables of social class status and emotional adjustment were held constant. Statistically significant differences were obtained between younger and older lower social class disturbed subjects on the variable of temporal direction. The younger subjects were primarily oriented toward the "not present," while the older subjects were oriented more toward the category of "present." Statistically significant differences were not obtained between these two groups on the variables of temporal span and fluency. Hypothesis eight of Series III was rejected on the variable of temporal direction and sustained on the variables of temporal span and fluency.

The results obtained in testing the ninth hypothesis of Series III, which compared groups of twenty younger lower



social class normal boys and twenty younger middle social class normal boys, are given for temporal direction in Table 70, for temporal span in Table 71, and for temporal fluency in Table 72.

TABLE 70

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS NORMAL  
AND 20 YOUNGER MIDDLE SOCIAL CLASS NORMAL BOYS  
ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Lower class normal	20	12	8	1	3.134
Middle class normal	20	17	3		
					P = .10

TABLE 71

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS NORMAL  
AND 20 YOUNGER MIDDLE SOCIAL CLASS NORMAL BOYS  
ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Lower class normal	20	13	7	1	.416
Middle class normal	20	11	9		
					P = .70

TABLE 72

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS NORMAL  
AND 20 YOUNGER MIDDLE SOCIAL CLASS NORMAL BOYS  
ON THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses		df	Chi <sup>2</sup>
		Past	Not Past		
Lower class normal	20	5	15	1	2.666
Middle class normal	20	10	10		P = .10

In the three tests of the ninth hypothesis in Series III, the number of subjects in each group was twenty and the variables of chronological age and emotional adjustment were held constant. Statistically significant differences were not obtained between younger lower social class normal and younger middle social class normal subjects on the three variables of direction, span, and fluency. Hypothesis nine of Series III was consistently sustained.

The results obtained in testing hypothesis ten of Series III, which compares groups of twenty younger lower social class emotionally disturbed and twenty younger middle social class emotionally disturbed boys, are given for temporal direction in Table 73, for temporal span in Table 74, and for temporal fluency in Table 75.

TABLE 73

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS EMOTIONALLY  
DISTURBED AND 20 YOUNGER MIDDLE SOCIAL CLASS  
EMOTIONALLY DISTURBED BOYS ON THE  
VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Lower class disturbed	20	14	6	1	.000
Middle class disturbed	20	14	6		P = .99

TABLE 74

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS EMOTIONALLY  
DISTURBED AND 20 YOUNGER MIDDLE SOCIAL CLASS  
EMOTIONALLY DISTURBED BOYS ON THE  
VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Lower class disturbed	20	14	6	1	.000
Middle class disturbed	20	14	6		P = .99

In the three tests of the tenth hypothesis of Series  
III, the number of subjects in each group was twenty and the

TABLE 75

COMPARISON OF 20 YOUNGER LOWER SOCIAL CLASS EMOTIONALLY  
DISTURBED AND 20 YOUNGER MIDDLE SOCIAL CLASS  
EMOTIONALLY DISTURBED BOYS ON THE  
VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses		df	Chi <sup>2</sup>
		Past	Not Past		
Lower class disturbed	20	5	15	1	.176
Middle class disturbed	20	2	18		
					P = .70

variables of chronological age and emotional adjustment were held constant. Statistically significant differences were not obtained between younger lower social class disturbed and younger middle social class disturbed subjects on the three temporal variables of direction, span and fluency. Hypothesis ten of Series III was consistently sustained.

The results obtained in testing the eleventh hypothesis of Series III, which compared groups of twenty older lower social class normal boys and twenty older middle social class normal boys, are given for temporal direction in Table 76, for temporal span in Table 77, and for temporal fluency in Table 78.

In the three tests of the eleventh hypothesis in Series III, the number of subjects in each group was twenty

TABLE 76

COMPARISON OF 20 OLDER LOWER SOCIAL CLASS NORMAL AND  
20 OLDER MIDDLE SOCIAL CLASS NORMAL BOYS ON  
THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Lower class normal	20	13	7	1	.106
Middle class normal	20	12	8		P = .80

TABLE 77

COMPARISON OF 20 OLDER LOWER SOCIAL CLASS NORMAL AND  
20 OLDER MIDDLE SOCIAL CLASS NORMAL BOYS ON  
THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Lower class normal	20	9	11	1	.100
Middle class normal	20	10	10		P = .80

and the variables of chronological age and emotional adjustment were held constant. Statistically significant differences were not obtained between older lower social class

TABLE 78

COMPARISON OF 20 OLDER LOWER SOCIAL CLASS NORMAL AND  
20 OLDER MIDDLE SOCIAL CLASS NORMAL BOYS ON  
THE VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses		df	Chi <sup>2</sup>
		Past	Not Past		
Lower class normal	20	8	12	1	.000
Middle class normal	20	8	12		P = .99

normal and older middle social class normal subjects on the three temporal variables of direction, span, and fluency. Hypothesis eleven of Series III was consistently sustained.

The results obtained in testing the twelfth hypotheses of Series III, which compared groups of twenty older lower social class emotionally disturbed and twenty older middle social class disturbed boys, are given for temporal direction in Table 79, for temporal span in Table 80, and for temporal fluency in Table 81.

In the three tests of the twelfth hypothesis in Series III, the number of subjects in each group was twenty and the variables of chronological age and emotional adjustment were held constant. Statistically significant differences were not obtained between older lower social class emotionally disturbed and older middle social class disturbed

subjects on the three temporal variables of direction, span, and fluency. Hypothesis twelve of Series III was consistently sustained.

TABLE 79

COMPARISON OF 20 OLDER LOWER SOCIAL CLASS EMOTIONALLY DISTURBED AND 20 OLDER MIDDLE SOCIAL CLASS EMOTIONALLY DISTURBED BOYS ON THE VARIABLE OF TEMPORAL DIRECTION

Group	N	Temporal Direction Responses		df	Chi <sup>2</sup>
		Not Present	Present		
Lower class disturbed	20	7	13	1	.416
Middle class disturbed	20	9	11	P = .70	

TABLE 80

COMPARISON OF 20 OLDER LOWER SOCIAL CLASS EMOTIONALLY DISTURBED AND 20 OLDER MIDDLE SOCIAL CLASS EMOTIONALLY DISTURBED BOYS ON THE VARIABLE OF TEMPORAL SPAN

Group	N	Temporal Span Responses		df	Chi <sup>2</sup>
		Less than 12 hrs.	12 hrs. and over		
Lower class disturbed	20	14	6	1	.534
Middle class disturbed	20	16	4	P = .50	

TABLE 81

COMPARISON OF 20 OLDER LOWER SOCIAL CLASS EMOTIONALLY  
DISTURBED AND 20 OLDER MIDDLE SOCIAL CLASS  
EMOTIONALLY DISTURBED BOYS ON THE  
VARIABLE OF TEMPORAL FLUENCY

Group	N	Temporal Fluency Responses		df	Chi <sup>2</sup>
		Past	Not Past		
Lower class disturbed	20	6	14	2	.124
Middle class disturbed	20	5	15		
					P = .80



## CHAPTER V

### DISCUSSION OF RESULTS

In general, this study was concerned with the temporal orientation of emotionally disturbed boys: that is, with how these children perceive themselves in relation to time and how they utilize time as a mechanism of defense in their efforts to adjust to their own unique environments. The purpose of the study was to ascertain whether these emotionally maladjusted boys differed significantly from normal boys in regard to how they are oriented in a temporal sequence. In order to determine whether differences did exist between these two groups, their responses on the three defined variables--direction, span, and fluency--were compared.

In this investigation of temporal orientation three questions were posed: (1) Do normal and disturbed boys differ significantly in their orientation in time? (2) Is chronological age a significant factor in temporal orientation? (3) Is temporal orientation related to social class status? In seeking to answer these three questions, experimentally, three sets of nine null hypotheses were formulated and tested with regard to each question, a total of twenty-

seven hypotheses.

In answering the first question, the responses of eighty normal boys were compared with the responses of eighty emotionally disturbed boys on the three temporal variables. The results of these comparisons, listed in Tables 1, 2, and 3, show that significant differences did exist between these two groups on the variables of temporal span and temporal fluency. The emotionally disturbed subjects tended to give stories of shorter time span and were more fluent about the present and future. On the other hand the normal subjects related more stories with longer action spans and were more fluent about the past and the present. It should be noted here, however, that these two groups were confounded as to social class status and chronological age.

To ascertain whether social class was contributing to these observed differences, forty middle social class normal subjects were compared on the three time variables with forty middle social class emotionally disturbed subjects, and forty lower social class normal subjects with forty lower social class disturbed subjects. Statistically significant differences were not obtained between normal and disturbed subjects of the lower social class, but differences at the .05 level were obtained between middle class normal and middle class emotionally disturbed subjects. These differences were observed on the variables of temporal span and fluency, and in the same direction as the differences referred

to above in Tables 2 and 3. It should be noted again, however, that while social class status had been held constant, the variable of chronological age was still confounded in the two groups for these comparisons.

In a comparison of forty younger normal and forty younger disturbed subjects and in a comparison of older normal and older disturbed subjects, statistically significant differences were shown to exist. For the younger group, differences significant beyond the .02 level were obtained between normal and disturbed subjects on the variable of temporal fluency. While both normal and disturbed subjects were more fluent about the future, a significantly larger number of disturbed subjects than normal subjects fell into the "present" category. Significant differences at the .02 level were obtained between older normal and older disturbed subjects on the variables of temporal direction and temporal span. The responses of the disturbed older boys tended to place them in the category of "present" on temporal direction and with time spans of "less than 12 hours." The normal older subjects on the other hand tended to be oriented toward the "not present" category for temporal direction and were about equally divided between the two time span categories. While significant differences were not obtained between older normal and older disturbed subjects on the variable of temporal fluency, there was a tendency in the expected direction that approached significance at the .05 level.

In these comparisons the factor of chronological age had been held constant, but the variable of social class status had again been confounded for these groups.

Finally, groups of normal subjects and emotionally disturbed subjects were compared on the three temporal variables with both chronological age and social class status being held constant. In these comparisons statistically significant differences were obtained between younger middle class normal and younger middle class disturbed subjects on the variable of temporal fluency and between older middle class normal and older middle class disturbed subjects on the variable of temporal span. Statistically significant differences were not obtained between normal and disturbed subjects of the lower social class in either the younger or older groups or in a combination of these groups. For this particular study the normal and disturbed subjects from the lower social and economic strata appear to constitute a fairly homogeneous group as measured by their responses on the three temporal variables.

Significant differences were obtained on all comparisons of middle social class normal and middle class emotionally disturbed subjects. Since these differences are not traceable to the factors of chronological age or social class status, it may be concluded that the emotionally disturbed boys, particularly from the middle class society, do differ from their normal counterparts in their orientation

in time as measured by their responses on these three temporal variables.

The nine hypotheses formulated and tested in order to answer this first question resulted in twenty-seven comparisons between various groups of normal and emotionally disturbed boys. On nine of these twenty-seven comparisons, statistically significant differences at or beyond the .05 level were obtained. According to Wilkinson, nine significant chi squares in a total of twenty-seven calculations is significant beyond the .002 level.<sup>1</sup>

In seeking to determine whether chronological age was a significant factor in temporal orientation, nine more hypotheses, consisting of a total of twenty-seven comparisons, were formulated and tested between various groups of younger and older subjects. In the first comparison the responses of eighty younger boys were compared with the responses of eighty older boys on the three temporal variables--direction, span, and fluency. The results of these comparisons listed in Tables 4, 5, and 6 show that significant differences beyond the .01 level were obtained between younger and older subjects on the variables of temporal direction and temporal span. An inspection of Table 4 shows younger subjects were primarily oriented to the "not present," while the

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<sup>1</sup>Bryan Wilkinson, "A Statistical Consideration in Psychological Research," Psychological Bulletin, XLVIII (1951), pp. 156-158.

older subjects tended to perceive themselves in relation to "present" and "not present" about equally. Table 5 shows the responses of these two groups on the variable of temporal span. It may be observed from this table that more of the older subjects than younger subjects gave stories with time spans of "1 hour or less," but at the same time the older group also gave more stories with time spans of "over 14 days" than did the younger group. While social class status and emotional adjustment are confounded in these comparisons, these obtained differences at least suggest that temporal orientation is more sufficiently organized for children included in the older group than it is for those of the younger group.

In comparing groups of younger and older subjects that were not contaminated by the inclusion of normal and emotionally disturbed subjects, forty younger emotionally disturbed boys were compared with forty older emotionally disturbed boys in the three time variables. A similar comparison was made between younger and older normal subjects. Differences which were significant beyond the .01 level were obtained between younger and older emotionally disturbed subjects in their responses to the variable of temporal direction (Table 10). An inspection of this table shows that the older disturbed subjects are now primarily oriented toward the "present" while the younger subjects tend to be in the "not present" category. Differences were not found to exist

between these groups of emotionally disturbed subjects on the variables of span and fluency. The comparison of younger and older normal subjects revealed no significant differences to exist between these groups as measured by their responses on the three temporal variables. Although these groups were confounded as to social class, it may be concluded that the normal boys of the younger and older groups constituted a homogeneous grouping as measured by their responses on these three variables of temporal orientation. Differences in temporal orientation did exist, however, between the groups of younger and older emotionally disturbed boys, as indicated by their responses to the variable of temporal direction.

In order to ascertain whether social class was contributing to this observed difference, comparisons were made between younger and older subjects in which both the variables of emotional adjustment and the variable of social class status were held constant. The results of these comparisons show that younger and older normal subjects of both the middle and lower social class did not differ significantly on the three variables being tested. On the other hand, younger and older emotionally disturbed subjects of both the middle and lower social classes revealed significant differences in their responses to the variable of temporal direction. In the nine hypotheses consisting of twenty-seven comparisons designed to test the relationship between temporal orientation and chronological age, six of the twenty-seven

comparisons were found to be statistically significant. This number of significant variables in twenty-seven calculations would in itself be significant beyond the .002 level.<sup>1</sup>

In the last question posed, regarding the relationship between temporal orientation and social class, nine more hypotheses, consisting of twenty-seven comparisons, were formulated and tested. It was hypothesized that lower social class subjects would differ from middle class subjects in that they would be primarily oriented toward the present with shorter time spans than middle class subjects. Although significant differences were not obtained when comparisons were made between the several lower and middle class groups, there were tendencies in the expected direction. These tendencies may be noted from inspections of Tables 7, 31, 70, and 72. All nine of the null hypotheses testing relationship between temporal orientation and social class status were consistently sustained. While these findings are not in agreement with the findings of others, for this particular study it must be concluded that temporal orientation is not significantly related to social class status.

In summary, significant differences were obtained on two of the three temporal variables, namely, span, and fluency, between groups of normal and groups of emotionally disturbed boys. However, these two groups were confounded as to

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<sup>1</sup>Ibid.



social class status and chronological age. For this reason comparisons were made between middle class normal and middle class disturbed subjects and between lower class normal and lower class disturbed subjects. Differences that were statistically significant were obtained between middle class normal and middle class disturbed subjects, but no significant differences were obtained between the groups of lower class normal and lower class disturbed subjects. Lower social class normal subjects were more like lower social class emotionally disturbed subjects than were the same normal and emotionally disturbed groups of the middle social class subjects. Since these groups were contaminated by the inclusion of subjects of different chronological age groups, comparisons were made between normal and disturbed subjects holding the chronological age factor constant. The younger normal and disturbed subjects differed significantly on the variable of temporal fluency. The older normal and older disturbed subjects differed significantly on the variables of direction and span. Although social class status was again confounded in the comparisons, normal and disturbed subjects of both the younger and older group did differ significantly; however, the differences between the younger normal and younger disturbed subjects were not in as sharp contrast as the differences between the normal and disturbed subjects of the older group. In comparing normal and disturbed subjects with chronological age and social class status held constant,

significant differences on the variables of temporal span and fluency were obtained between normal and disturbed subjects of the middle social class. No significant differences were obtained between these groups of the lower social class.

Younger and older subjects also differed on two of the temporal variables--direction and span. Younger subjects were primarily oriented toward the "not present" while older subjects were equally oriented toward "present" and "not present." In terms of their responses to the variable of temporal span, the older subjects fell at the two extremes "1 hour or less" and "over 14 days," while the younger subjects were primarily in categories of "less than 14 days." These groups were, however, confounded as to social class status and emotional adjustment. Further comparison showed that no significant differences occurred between younger and older normal subjects when comparisons were made between these groups with the variables of social class status and emotional adjustment held constant. Differences were obtained between younger and older emotionally disturbed subjects on the variable of temporal direction. Older disturbed subjects were primarily oriented toward the "present" while younger subjects were oriented primarily to the "not present." These differences were observed to exist between older and younger disturbed subjects in both the middle and lower social classes. Therefore normal subjects of the younger and older groups did not differ in their temporal orientation but emotionally

disturbed subjects of the younger and older groups did differ.

Finally no significant differences were obtained when comparing the various social class groups. Their responses to the variables, temporal direction, span, and fluency, did not result in observable differences that were statistically significant. The conclusions for this study were:

1. Normal and emotionally disturbed boys did differ significantly in their orientation in time.
2. These observable differences were larger for the older group than for the younger group.
3. Chronological age was a significant factor in temporal orientation.
4. Lower and middle social class subjects did not differ significantly in their responses on the three temporal variables of this study.

## CHAPTER VI

### SUMMARY AND CONCLUSIONS

The temporal orientation of several groups has recently been investigated. These studies are of importance since the manner in which individuals see themselves in relation to time is a rather powerful determinant of human behavior. The results of the research referred to earlier indicate that certain social classes differ in terms of their temporal orientation. Members of one group are generally oriented toward tradition and the past; members of another group are primarily oriented toward the future or the "hope for better things ahead" philosophy, while members of another group are primarily concerned with the immediate present. For each of these groups, the behavior pattern is influenced by the manner in which the members perceive themselves in a time sequence.

Delinquent male and female adolescents, those who are customarily characterized as impulsive individuals, have also been shown to differ from normal adolescents in temporal orientation. Their orientation is to the immediate present as a means of escaping the unhappiness and frustration of the

past and the uncertainties of the future.

The purpose of this study was to investigate the general temporal orientation of emotionally disturbed boys. The criteria that formed the basis on which these disturbed children were selected indicate that their behavior pattern is very similar to that of delinquents. They are aggressive, negativistic, unstable, impulsive, and they have problems in relating to others. Since this similarity in behavior exists between delinquent and emotionally disturbed children, it was hypothesized that their temporal orientation would be somewhat similar.

In another recent study of the temporal orientation of children who were retarded in reading, no significant differences were obtained between retarded and good readers. The author of this study suggested that perhaps differences were not shown because the age of the subjects used in the study was such that temporal orientation for them had not as yet become established.

This study of the temporal orientation of emotionally disturbed boys was designed to provide answers to three questions:

1. Do normal and emotionally disturbed boys differ in temporal orientation?
2. Is temporal orientation related to chronological age?
3. Is temporal orientation related to social class

status?

Eighty boys, enrolled in the Oklahoma City Public School System, who were so severely maladjusted that they were referred to the Department of Pupil Services for psychological study, composed the emotionally disturbed group of this study. Eighty boys selected from the Oklahoma City Public Schools, who met the criteria cited previously on page 23, composed the normal group. Forty of each of these groups of eighty boys ranged in age from 10-0 to 12-6 and forty ranged in age from 12-6 to 15-0. These groups were referred to as younger and older, respectively. The normal and disturbed groups were matched on the basis of chronological age, I.Q., and social class affiliation.

Each subject, in an individual interview, performed three tasks designed to reveal his temporal orientation on the three temporal variables--direction, span, and fluency. Each subject told nine stories, the first of which was given in response to the statement, "Tell me a story." The remaining eight stories were given in response to eight selected Thematic Apperception Test Cards and the instructions, "Tell me a story about this picture." Each subject was then questioned specifically about the last four cards. This questioning was designed to elicit elaboration on the part of the subject about the past, present, and the future. The temporal fluency of the subject was assessed from the number of words given in response to these questions. The nine

stories related by the subject were reviewed, and he was asked to classify each story according to whether he believed the action of the story to have occurred in the past, present, or future. The temporal direction of each subject was assessed as the category in which he placed the greatest number of his nine stories. Finally the subject was asked to estimate the time span of the action of each of his stories. His temporal span was assessed on the basis of his response to his questioning.

The null hypotheses that were tested in relation to differences between normal and emotionally disturbed boys were rejected on one-third of the twenty-seven variables tested. These observed differences were in sharper contrast for older subjects than for younger subjects. Differences were also observed to exist between normal and disturbed subjects of the middle social class but not between the normal and disturbed subjects of the lower social class. That these differences were more clearly defined for the older group than they were for the younger group suggests that temporal orientation is not organized sufficiently for children of the younger age group to use as a means of escape from their present frustrating circumstances. It has been noted that no significant differences were obtained between lower social class normal and lower social class disturbed subjects. Previous studies have shown lower social class groups to be oriented toward a delimited present, while this

study shows that emotional maladjustment tends to orient individuals toward the present. Therefore on the three temporal variables, the responses of lower class subjects, whether they were normal or disturbed, would be similar, and no significant differences would be expected.

Statistically significant differences were obtained on six of the twenty-seven comparisons between younger and older subjects. These obtained differences were found to exist between groups of younger and older disturbed subjects but not between the younger and older normal subjects. The responses of the older normal subjects on the three temporal variables suggest that temporal orientation has become more clearly established for this group than for the younger group. Their responses tended to be distributed more equally between the various categories of the three time variables than did the responses of the younger groups. However, these differences were not great enough to be significant. Significant differences obtained between younger and older emotionally disturbed subjects would indicate, particularly on the variable of temporal direction, that disturbed boys become more oriented to the present as they grow older.

The nine null hypotheses testing the relationship between temporal orientation and social class status were consistently sustained. While there were trends of response in the expected direction for lower and middle social class subjects, none of these differences reached the required 5 per



cent level of confidence. As has been pointed out, these findings are not in agreement with those of Leshan and others; however, for this study no significant differences were obtained between groups of different social class affiliation.

In conclusion, then, this study has shown temporal orientation to be related to emotional adjustment and chronological age, but not to social class status.

The results of this study have implications for the planning of educational experiences for emotionally maladjusted children. Special classes and flexibility of the curriculum seem necessary to provide immediate goals, rewards, and even punishments for these children, since immediacy seems most meaningful to them. Reminders of what has happened in the past or warnings of what might happen in the future will have little effectiveness, particularly for older maladjusted children. A classroom atmosphere in which these disturbed subjects may feel a sense of acceptance and security will be necessary for their making a satisfactory adjustment. A rich variety of experiences through which they may find acceptable ways of acting out their feelings and impulses should be provided.

Finally, consideration should be given to the education of teachers, so that they may have an understanding of not only the temporal orientation but all the general dynamics underlying the behavior of these children. With such insight and understanding the teacher may provide a classroom

environment that represents a stable "present" in which the emotionally maladjusted child may function with a reasonable degree of effectiveness. The teacher may then assist such maladjusted children in integrating their past, present, and future so that they may achieve happiness in the present as they profit from their experiences of the past and plan realistically for their future.

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