PRIMARY PROCESS THINKING IN CHILDREN

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ABSTRACT

PRIMARY PROCESS THINKING IN CHILDREN

by John T. Goodman

The present study examines some aspects of the psychoanalytic conceptualization of primary process thinking. Within psychoanalytic theory the individual is seen as developing through a series of stages which are characterized by chronological, physical and psychic factors. One aspect of these psychic phenomena is of primary concern in this study; i.e., the thought processes of the individual as he develops.

Twenty children of kindergarten age and forty-three children of grades four, five and six were individually presented a series of stimulus cards and were asked to tell stories to them under two different conditions. The forty-three subjects had been given the same task three years prior when they were in grades one, two and three. One condition (A) consisted of the subject relating what he himself "saw going on," and the second condition (B) consisted of the subject relating what "another boy saw going on." The stories were analyzed for drive related ideation using Holt's system of scoring for primary process manifestations. It was

predicted that condition B, via use of the third person, would allow relaxation of the subject's ego vigilance and that a greater amount of primary process intrusion would occur in the thought processes. This was substantiated by the significant increase in primary process intrusion as found in the stories under condition B.

A second prediction concerning the total productivity of drive related material was not substantiated. Though the data suggest that primary process manifestations seem to peak at those stages where conflict and psychic or biological stress are greater no definitive conclusions can be drawn. Hence, the curvilinear relationship predicted in 1962 by Goodman was not clearly confirmed. Primary process intrusion was found to be significantly related to verbal productivity for certain age levels. But verbal productivity was found to differ significantly between all groups tested in the present study with the exception of Grades five and six.

The third hypothesis, which predicted a greater number of human than animal responses would be given, was clearly substantiated. The results were discussed and their implications concerning projective tests with children were elaborated. The results raise some doubts as to the efficacy of using animal figures as stimuli for childrens' projective techniques.

The fourth hypothesis, that a relationship exists between fantasy and overt behavior was only in part substantiated. The reliability of the two scales purporting to tap aggression and dependency was satisfactory and a number of reasons were discussed which may have entered into the results.

The results of the study lend fairly strong support to psychoanalytic thinking concerning the nature of primary process. Support was also given to the Holt system of scoring which was developed primarily within a psychoanalytic framework.

APPROVED Bill L. Kell
Chairman

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PRIMARY PROCESS THINKING IN CHILDREN

By

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

INTRODUCTION

The present study examines some aspects of the psychoanalytic conceptualizations of primary process thinking. Within psychoanalytic theory, the individual is seen as developing through a series of stages which are characterized by chronological, physical and psychic factors. The psychic factors have been the major focal point of psychoanalytic investigations for the past six and a half decades and it is primarily one aspect of these psychic phenomena that is of concern here; i.e., the thought processes of the individual as he develops.

Primary Process Thinking

The concept of primary process thinking was first used by Freud in 1900, in the "Interpretation of Dreams." In this book he made a most fundamental distinction on thought processes--namely the distinction between primary and secondary processes. The primary process denotes the type of mental functioning characteristic of the system unconscious and is also the manner in which the mind functions during the earliest period of life before ego functions develop. It is called primary for the reason that it precedes the logical, time oriented, ego controlled thought process which is called

secondary. A number of authors have described various qualities of primary process thinking and it seems pertinent to present some of these definitions at this point since they delineate those factors which allow one to recognize and assess the extent to which drives and impulses have shaped the thought product. Kris (1951) distinguishes between the primary and secondary processes on the basis of assumptions concerning the nature of the psychic energy prevailing in either of them, i.e.,

> Unconscious processes use mobile psychic energy, preconscious processes bound energy. The two degrees of mobility correspond to two types of discharge characterized as primary and secondary processes. The ego then has two kinds of energy at its disposal, neutralized energy and libido and aggression in their non-neutralized form.

To continue from Kris,

> Fantastic free wandering thought processes, tend to discharge more libido and aggression and less neutralized energy, purposeful reflection and problem solving, more neutralized energy. In fantasy production the ego's thought processes are largely in the service of the id, but not only the id is involved, naturally the superego and narcisistic strivings of the self play their part.

Hence, a technique such as free association or minimally structured association allows the observer to assess the nature of the unbound, non-neutralized energy.

In the light of the above, Shafer's elaboration of Kris' concept 'Regression in the service of the ego' makes theoretical sense, (Shafer, 1958). Voluntary suspension of ego control allows regression in the service of the creative

processes. Too, projective techniques are ways of circumventing an unwilling ego in order to elicit drive dominated or drive related ideation. Feldman (1960) equates the id with primary process, i.e., the reservoir of instinctual impulses. The ideas of the id are governed by the pleasure principle which favors immediate impulse expression and gratification. In order to achieve immediate gratification the id may harbor contradictions as well as time and space distortions and be totally lacking in distinction between psychic reality (images or memory traces) and external reality. Holt and Havel (1960) further exemplify the foregoing,

> In Freud's study of neurotic patients, he found their dreams and symptoms were not the random coughs and sputters of a faulty engine, but intelligible and highly meaningful products of a peculiar kind of mental operation.

This peculiar kind of mental operation was intelligible via an understanding of the aims of the pleasure principle. A quite complete description of such 'coughs and sputters' can be found in "The Psychopathology of Everyday Life."

Primary process thinking, according to the above authors, can be recognized not only from its organization by drives but also by certain formal characteristics such as autistic logic, nonsensical associative links, condensation and various other distortions of reality. Primary process thinking then is developmentally more primitive than

secondary process thinking (Shafer, 1960). Shafer also feels that while the primary process operates in terms of basic drives and in accordance with the pleasure principle, the secondary process utilizes neutralized drive energies and is oriented toward objective reality. The secondary process is the means by which an impulse becomes a more or less conscious wish. It passes to that part of the psychic apparatus which is in contact with physical reality and controls those physical organs which can effect changes in the physical world and thus lead to a satisfaction of the wish. Through this process the wish is satisfied but only after a delay during which time the external world is analyzed for a suitable object and during which time appropriate skills are brought to bear in a manner which will satisfy the wish. The secondary process then involves use of the functions of reality testing and reality manipulation. The principal difference then, between primary and secondary processes is that the former relieves tension immediately and independently of reality but only on a temporary basis while the latter process is temporally delayed but is permanent and dependent on reality.

The above descriptions adequately discriminate the polar aspects of thought processes but should not be taken to mean that the adult individual utilizes one of them to the exclusion of the other. Arlow and Brenner (1964) describe the thought processes of 'normal individuals' as an

integration of both types. For example: "Primary process tendencies remain active throughout life. Mature mental functioning does not imply a complete suppression or cessation of such activity." Secondly, "Primary process phenomena are not necessarily pathological, nor are they always maladaptive." Thirdly,

> No sharp line of distinction can be drawn between those phenomena in which cathexes are firmly bound (secondary process) and those phenomena in which cathexes are highly mobile (primary process). There is instead a continuum of phenomena which demonstrate varying degrees of mobility of cathexis. The difference between primary and secondary process is actually a quantitative one indicating the degree of mobility of cathexes. It reflects the growing ability of the ego to regulate cathectic discharge. p. 91.

Hence, thinking may be organized to a greater or lesser degree by basic, unconscious drives.

The Problem

If the above theoretical rationale has validity then children at different maturational levels should reveal differences in the amount of drive related ideation as expressed in their verbalizations. In addition, if the above theoretical notions are accurately descriptive, a greater amount of drive related ideation should be evident under conditions which allow circumvention of ego control. Manifestations of primary process thinking should increase under the previous condition mentioned as well as during those developmental periods when conflict or increased drive states

are high. The aim of the present study is to investigate the above general hypothesis and to investigate the relationship of ideation with overt behavior.

In addition some of the general assumptions, concerning projective techniques with children are evaluated, particularly those pertaining to the content, i.e., animal versus human and its clinical meaning. According to Ames et al. (1952, 1961) children respond to Rorschach cards with three times as many animal percepts as human percepts. Clinical lore has it that a high animal content in the Rorschach responses of adults is indicative of immaturity and 'normal' with children. In fact the initial stimulus to publication of the Childrens Apperception Test (CAT) was based on the hypothesis that one might expect children to identify more readily with animals, (Budoff, 1960).

Previous Research

There are a number of avenues to the unconscious which have been described as useful in eliciting, liberating and assessing its contents. Among these are dreams, waking dreams, slips of the tongue, content of speech, content and form of projective test material, to name a few. However, until the last decade there has been no formal, readily communicable system of assessing primary process manifestations with any acceptable degree of reliability. In 1956, Holt devised a scoring system for assessing primary process

manifestations in Rorschach responses, and in veiw of recent research the system seems to offer some promise. Similarly, Pine (1960) has evolved a manual for scoring drive dominated content in TAT stories. Both systems are embedded in the rationale of psychoanalytic theory in general and "ego psychology" in particular. Holt's system has received the bulk of attention and has been employed in a variety of studies. Ackman (1960), Cohen (1960), Goodman (1962), Pine and Holt (1960), Silverman et al. (1962), Wiseman (1962), and Zukowsky (1961), to name a few, have all conducted research with productive and profitable use of the system.

In all of the research mentioned above, with the exception of Goodman, Holt's scoring system was employed to assess drive related ideation as well as formal deviations in thought processes which appeared in a subject's responses to the Rorschach. Goodman, basing his research on Holt's 1956 and 1962 articles, utilized a vehicle other than Rorschach to gain a sample of fantasy material. In Holt's 1956 article he states, "If one accepts the idea that thought processes can be arranged from the most primary to the most secondary then these concepts (of primary process) can be applied to any sample of mental activity." Incidentally, this assumption of the primary through secondary process continuum is identical with the assumption of Arlow and Brenner (1964). Holt (1962) again indicated that the scoring system is applicable to data other than that produced by the Rorschach method with a minimum number of changes.

Holt's manual is a quantitative and qualitative effort to classify both content and formal properties of responses as a measure of the degree to which the responses are organized by drives. The content aspects of the manual are divided into two major categories; libidinal and aggressive. Within these categories qualitative differences are indicated via one of two levels. That is, some responses are more primary than others in that they are considered more blantantly representative of the impulse and would be considered asocial. The quantitative aspect is the defensive measure required to defend against the impulse. For example, the response of 'a child nursing at its mother's breast' would be scored Level I Oral with a defense demand of 3. A response of 'a mother feeding a child' would be scored Level II Oral with a defense demand of 1. The former is considered a closer representative of primitive oral needs.

Though the system has been demonstrated as quite effective in scoring primary process manifestations it does not allow scoring of secondary process thinking except by exclusion. The scoreable content is defined by the content and formal categories of the manual.

Although a considerable amount of research has been focused on primary process thinking with adults almost none has been done with children. Typically, with the adult population, primary process variables have been investigated with use of the Rorschach. This is somewhat paradoxical since the

object of study is, in the adult, muddied by several layers of socialization. However, other techniques have been used. Burstein (1959), using Freud's formulation that in the unconscious, "contraries are not kept apart from each other but are treated as though they were identical," attempted to test the hypothesis that secondary process thinking is a function of development. He gave the following task to third and sixth grade pupils. This paper and pencil task consisted of selecting a synonym for a word from a group of three words which included an antonym, an irrelevant word and a synonym. He predicted that younger subjects, by function of more primary process thinking, would choose opposite words more often than older subjects. Primary process thinking as measured this way was found to be more characteristic of the younger group. However, Burstein did not control such factors as maturational level and language ability, and his results must be interpreted cautiously. There is the possibility that Burstein was measuring language proficiency rather than primary process thinking. His data support both contentions.

Goodman (1962) using younger children also investigated primary process thinking in children. Sixty children (boys), twenty each of grades ones, two, and three, were individually presented a series of outline drawings representing a window, a door, a picture, a keyhole and a mirror and were asked to tell stories to them under two different conditions. The first condition (A) consisted of the subject

relating what he himself "saw going on," and the second condition (B) consisted of the subject relating what "someone like him saw going on." The stories were analyzed for drive related ideation using Holt's system of scoring for primary process manifestations (See Goodman, 1962). It was predicted that condition B would elicit a greater amount of drive related ideation than condition A. Goodman predicted the use of the third person would relax the subject's ego controls and hence a greater amount of primary process intrusion would occur in the thought processes. This prediction was substantiated by the significant increase in drive related ideation as reported in the children's stories under condition B.

A second prediction, that total amount of drive related ideation would be greater in younger subjects than in older subjects, was not substantiated. This may have been due to the narrow age range used (two years) plus the fact that subjects in the lower end of the age range had a mean age of over six and a half years.

A third hypothesis tested by Goodman involved an empirical analysis of the frequency of animal or human figures in the stories. Significantly more human figures were given as story characters or objects. The fact that a greater number of humans rather than animals were seen may be partially a function of the stimulus cards used. Doors, windows, mirrors, etc., are not particularly conducive to animal

responses. However, it is interesting to note the ratio of human to animal responses is slightly greater than three to one. This is almost the reverse of the three to one animal-human ratio reported for the Rorschach for this age group by Ames, et al. (1952).

STATEMENT OF HYPOTHESES

This study is both a replication and an extension of Goodman's (1962) research. It follows those recommendations made by Goodman and allows a more rigorous examination of the relationship between primary process thinking and age. In view of what has been said of primary process thinking and in view of what is known concerning ways of circumventing ego vigilance certain predictions can be made concerning the relative amounts of drive related ideation under different conditions and at different ages. Conditions here, are taken to mean both the I - He vantage point the subject is asked to assume as well as those stages of development that are assumed to be more conflictual and drive ridden. For example it is well known that the resolution of oedipal problems and the onset of puberty are difficult times for the developing individual.

In the present study, condition B is that condition in which the subject was asked to tell stories of what "another boy" might see going on. As in Goodman's study (1962) it was predicted there would be less need to defend or be responsible for what was seen as going on in the stories and hence a greater amount of primary process intrusion would occur. Stated more formally:

Hypothesis I: Condition B elicits a greater amount of drive related ideation than condition A.

In his 1962 study Goodman recommended that a wider range of subjects be sampled. This was in connection with his hypotheses concerning primary process thinking and age. He predicted that stories of younger children would contain more primary process manifestations than the stories of older children but this was not substantiated. In the 1962 study he suggested,

> A wider age range of subjects extending from a pre-identification stage through puberty should reveal a greater fluctuation in primary process. The expected relationship between primary process and age should be curvilinear. That is, high primary process intrusion at the younger ages; a decrease in amount, and then an increase around the time of puberty (Goodman, 1962, p. 11).

If this prediction holds then primary process intrusions are independent of age and socialization alone, of the developing individual.

Hypothesis II: Drive related ideation will be greater in the stories of younger children than in the stories of older children up to that age at which pubescence occurs and at that point there should again be an increase.

A third hypotheses concerning animal and human content of the stories was examined. Despite the clinical lore assumptions it was this author's contention that children's

conflicts, concerns, fears and needs are centered around people and not animals.

Hypothesis III: In the stories a greater number of human responses will be given than animal responses.

Lastly, an attempt was made to examine the relationship between fantasy expressions of aggression and orality and overt, observable behavior. The content part of the children's stories fall mainly within these two categories and orality is assumed to be closely associated with dependency. The intervening step between impulse and its gratification is the defensive measures taken by ego for purposes of controlling the impulse and to allow time to find an appropriate object. The general hypothesis is as follows:

Hypothesis IV: A relationship exists between primary process as expressed in the thematic material and overt behavior as described by the child's teacher via a behavioral check list describing aggressive and dependent behavior.

METHOD

Subjects and Instruments

Subjects for the present study included those same S's used by Goodman (1962). Initially, those subjects were randomly selected on the basis of grade and age and the 60 S's closest to six, seven and eight years (20 each) were taken with respect to the first, second and third grade. All S's were males and attended public school in Corunna, Ontario. Corunna itself is a small Canadian border town. For the most part, the parents of the subjects were white and blue collar workers employed in nearby petro-chemical industries. The mean age of the subjects used in the 1962 study were 6.7, 8.6, and 8.7 years. These subjects now have a mean age of 9.9, 10.8 and 11.9 years. In addition, for the present study, 20 male subjects of kindergarten age were utilized. Each subject was tested in a private office of the school and the S's responses were written verbatim as the subject told the story. Again, the testing procedure and stimulus cards were identical to those used by Goodman (1962). The test cards or stimulus cards were five white, 5" by 8" cards with two squares, a rectangle, a circle and a keyhole with one figure per card drawn on them. These

figures represented a window, a picture, a door, a mirror and a keyhole.

Instructions

Each subject received the following instructions with the five stimulus cards:

A. "Let's pretend this is a door (window, mirror, etc.) and the door is open. We'll pretend that you are looking through the door. You tell me a story about what you see going on when you look through the door."

After the first five cards were finished for a particular subject they were repeated for the same subject with the following instructions:

B. "Now let's pretend this is a door and the door is open. We'll pretend that another boy about your age is looking through the door. You tell me a story about what he sees going on when he looks through the door."

It was randomly determined whether condition A or B was given first for any given subject. If condition A was given first all five cards under condition A were given first and vice versa if condition B was given first. Within either condition A or B, the five cards, picture, window, door, mirror and keyhole, were randomly administered. The original order of presentation as given in 1962 for each

subject was used. For the new subjects, the kindergarten children, again coin tosses determined the order of presentation.

Scoring

The stories related by the subject were written verbatim by the experimenter. In all, each subject told ten stories, five under condition A and five under condition B. The stories were scored for drive related ideation as well as any formal deviation. The scorable content of any story was defined according to the content categories of Holt (1962). The scorable responses were assigned a numerical weight according to the degree of blatancy or socialization of the aim of the response. Each story was also judged as to whether or not it contains animal or human figures or both.

Scorer Reliability

The writer has already established himself as a reliable scorer using the Holt manual, (see Wiseman 1962, and Goodman 1962). In Wiseman's study the reliability for total primary process gave a correlation of .99. Other researchers using the manual report consistently high reliabilities. The reported scorer reliability coefficients offer very strong support for the objectivity of the scoring system.

In the present study a second scorer[1] was used to score a randomly selected sample of the stories produced by twenty subjects. These stories were rewritten so that only one condition appeared. That is, whether condition A or B was used all stories appeared as though told in the first person to disguise the conditions. The second scorer rated those same primary process variables as the experimenter. The reliability results are entirely consistent with those attained in previous research. Reliability coefficients by a Pearson r were .99 for drive related ideation under condition A; .97 for condition B; and .99 for total drive related ideation. In each instance above degrees of freedom equaled 19. In the present study the experimenter's scores were used for analysis of the data.

Behavior Checklist Reliability

In addition to the above data each teacher was asked to complete a check list of behavior (See Appendix B). The behaviors investigated are dependency (orality) and aggression. The purpose of the behavior rating is to gain an overt behavioral description of the child which can then be used to examine the relationship between fantasy material elicited and the behavior. One month after the teacher had completed the check lists she was asked to complete a sample

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[1]Appreciation is expressed to Martha G. Andrews of Michigan State University who served as the second scorer.

of those completed in order to gain a measure of reliability of the behavior rating. Test-retest correlations on a sample of twenty-two subjects were .94 for aggression and .57 for dependency.

RESULTS

It should be pointed out here that five stimulus cards were used in order to get a sufficient sample of verbal behavior. Since the condition (A or B) and amount of primary process is important and not the individual cards the story scores were combined under each condition and across conditions. Within the above totals each subject received a score for orality and aggressiveness as well as an independent behavioral rating of aggressiveness and dependency. Also each subject was assigned a score for the total number of animal figures and total number of human figures for the ten stories.

The following table (Table 1) shows the mean weighted primary process scores for those subjects who were tested in 1962 and then retested in 1965. (See Appendix C, Table 1, for the same information on the kindergarten group.)

To simplify analysis of the data three subjects were randomly selected and removed from Group I and one subject was randomly selected and removed from Group III. This left data on thirteen subjects for each group. Each subject was tested at two different times under two different conditions.

Table 1. Mean weighted primary process scores for subjects tested in 1962 and retested in 1965.

	Groups*		
	Group I	Group II	Group III
T_1 (1962) Condition A	Mean 4.00	Mean 6.38	Mean 4.71
	S.D. 6.24	S.D. 7.19	S.D. 3.22
T_1 (1962) Condition B	Mean 10.88	Mean 7.85	Mean 9.93
	S.D. 9.89	S.D. 9.68	S.D. 7.24
T_2 (1965) Condition A	Mean 5.44	Mean 5.30	Mean 8.79
	S.D. 4.50	S.D. 6.18	S.D. 5.45
T_2 (1965) Condition B	Mean 6.25	Mean 7.38	Mean 13.86
	S.D. 3.72	S.D. 5.60	S.D. 7.46

*Groups

Group I includes those subjects in Grade I (1962) who were retested in 1965. N=16, 1962 N=20.

Group II includes those subjects in Grade II (1962) who were retested in 1965. N=13, 1962 N=20.

Group III includes those subjects in Grade III (1962) who were retested in 1965. N=14, 1962 N=20.

Findings Related to Hypothesis I

The first hypothesis which states that condition B elicits a greater amount of drive related ideation was clearly substantiated. Analysis of variance results (Type VI, Lindquest, 1956, p. 296) are indeed impressive in that

they confirm Goodman's (1962) finding. The resultant $F = 17.41$ is significant at beyond the .01 level (See Table 2).

Table 2. Analysis of variance summary.

Source	SS	df	MS	F
Age	179	2	90	.84
Bet.	3850	36	106.94	
Tot. Bet.	4029	38		
Time	11	1	11	.42
Cond.	460	1	460	[1]17.41
T x Cond.	29	1	29	
T x Age	238	2	119	[2]4.51
Cond. x Age	74	2	37.0	1.40
T x Cond. x Age	95	2	47.5	1.80
Error	2853	108	26.41	
Tot. Within	3760	117		
Total	7789	155		

[1]Significant at beyond .01 level.

[2]Significant at beyond .05 level.

Findings Related to Hypothesis II

This hypothesis states that drive related ideation will be greater in the stories of younger children than in the stories of older children up to that age at which

pubescence occurs and at that point there should again be an increase. The above is, in effect, a test of Goodman's prediction of a curvilinear relationship between primary process thinking and age. Though the results are not conclusive they are suggestive that such a relationship might obtain. Some additional support for such a contention is gained when one considers that the prediction was taken from psychoanalytic theory to explain the results of the 1962 study. Figure I graphically represents the results.

The analysis of variance (See Table 2) produces a significant $F = 4.51$ (which is beyond the .05 level of significance) for the interaction of time of testing and age. A t-test comparison of means yields the following results: Kindergarten subjects are significantly less productive of primary process material than subjects of Grades I and VI ($p > .05$) but do not differ significantly from Grades II, III, IV and V. Grade I subjects do not significantly differ from Grades II, III, IV, V and VI. Grade VI subjects are significantly more productive of primary process material than Grades II, III, IV and V. In view of the above results, the claim of curvilinearity can neither be clearly substantiated nor completely ruled out. Of the age groups sampled, the relationship between age and primary process appears to be non-linear. Primary process thinking manifests itself in the thematic material in greater amounts around the age of six and one half years and around the age of twelve years. The

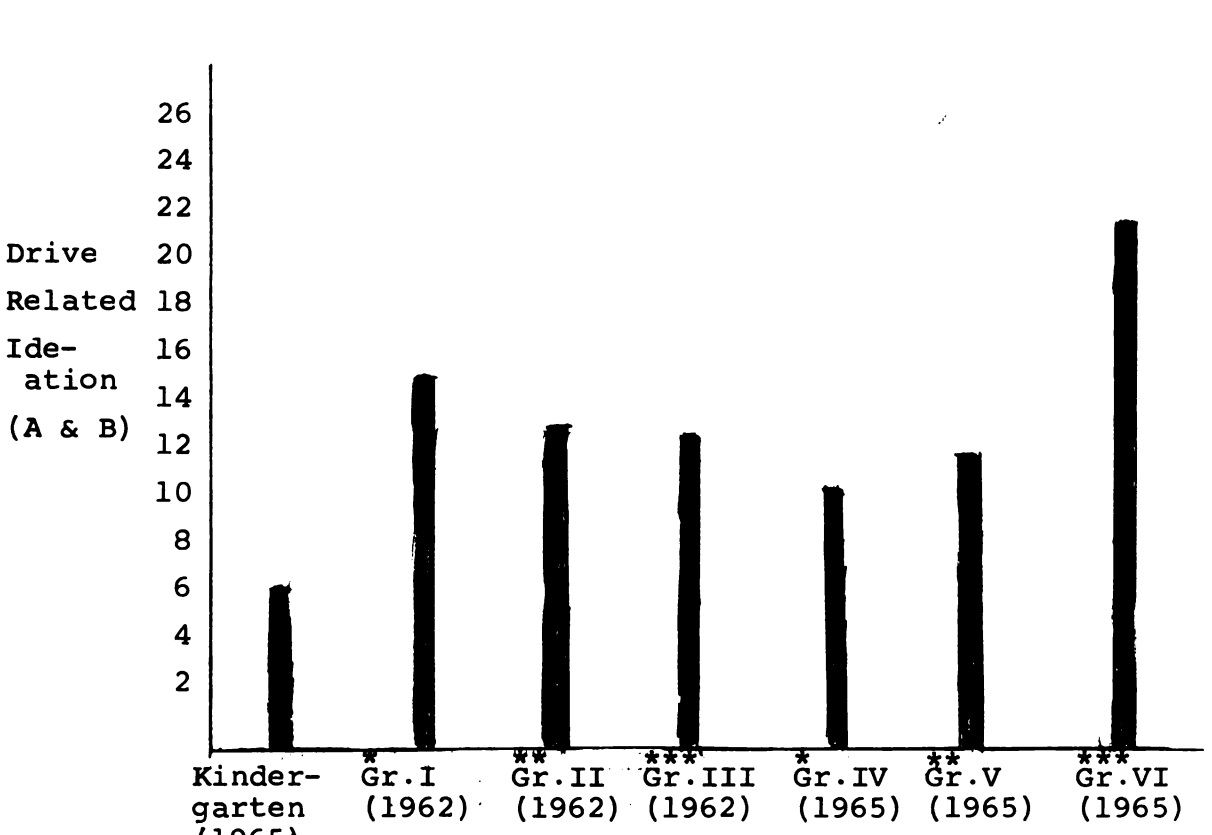

Figure 1. Comparison of drive related ideation (Total) by age.

youngest subjects in the study were least productive, probably as a result of limited language ability. More will be said of this latter point.

Since the task used was one which allowed for unlimited verbal productivity by the subject an analysis was made of the relationship between the number of words and the amount of drive related ideation produced by the subject. The number of words in the total stories were counted and correlated with the primary process score. For the kindergarten group a Pearson r of .66 (df = 19) was obtained ($p > .05$). A Pearson r for Grade IV produces a nonsignificant correlation coefficient of .39 (df = 15). Pearson r's for Grades V and VI with respective degrees of freedom of 12 and 13 were both significant, i.e. .76 for Grade V and .48 for Grade VI. Though not completely consistent, it is evident that a relationship exists between verbal productivity and primary process manifestations. However, there are also significant differences in verbal productivity between the groups sampled (See Appendix C, Table 4). The only groups which do not differ significantly in verbal productivity are Grades V and Grades VI.

Secondly, an analysis of variance was computed to determine if order of presentation, i.e., condition A or condition B given first, had any significant effect on the productivity of primary process. The resultant F of 0.14 indicates that it is tenable to assume that it is not. (See Appendix C, Tables 2 and 3.)

Findings Related to Hypothesis III

This hypothesis states that a greater number of human responses will be given than animal responses. As predicted, there were a significantly greater number of humans than animals given in the stories told by the subjects. Of the 63 subjects tested in the present study 59 out of the 63 produced more humans. There were two subjects who produced more animals and two subjects who responded with an equal number of humans and animals. This is a clear cut confirmation of Goodman's (1962) earlier findings.

Findings Related to Hypothesis IV

The last hypothesis predicted that a relationship exists between primary process as expressed in the thematic material and overt behavior as described by the child's teacher via a behavior checklist describing aggressive and dependent behavior. This was in part substantiated. In spite of test-retest reliability of .94 for the aggression scale no significant relationship was found between fantasies of aggression and teachers' ratings of aggression. The resultant Pearson r was .19 (df = 62). The dependency scale, when correlated with assessment of fantasies of orality, did yield a significant relationship, i.e. Pearson r = .38 (df = 62). More will be said of these results in the discussion section.

DISCUSSION

The results of the present study clearly substantiate Goodman's 1962 findings. His predictions from that study were not confirmed. The data is suggestive that such is the case but is by no means conclusive. It is well known among clinicians and students of developmental processes that for many adolescents the onset of puberty brings an upsurge in affective problems. As described by psychoanalytic theory, old conflicts and remnants of unresolved ones are often re-activated at this time. The greater amounts of primary process manifestations were produced by subjects with a mean of six and one half years and by subjects about the age of twelve. Though all differences were not significant these two periods do coincide with the attempted resolution of the oedipal problem and with the onset of pubescence. For the author, the notion of following unconscious thought processes through various age levels is an intriguing one and some strength has been gained by following the same subjects through time as opposed to cross sectional sampling at various age levels.

The obtained results plus the high inter-rater agreement also lend considerable strength to Holt's system of assessing primary process manifestations. The system, though

developed originally for use with the Rorschach technique has, as its author suggests, proven highly adaptable in its application to other samples of verbal behavior. When stimuli devoid of structure are used, gauges of perceptual accuracy as a measure of reality orientation, are not available as they are with the Rorschach. However this seems to be a relatively minor sacrifice in view of the system's objectivity in the analysis of content and form of verbal responses. In fact there may be some distinct advantages to the use of totally unstructured stimuli such as the outline drawings that were used.

The results lend substantial support for the first hypothesis tested. Stories elicited under condition B revealed a significantly greater amount of primary process material than stories given under condition A. Further, this was shown to be the case independently of which condition (A or B) was presented first. This increase was seen as a function of the increased distance provided by use of the third person. This distance allowed the subject to disown responsibility for what was seen as going on since he was only reporting what "another boy saw." This condition, then would favor a greater amount of primary process intrusion and resulted in stories which revealed greater evidence of primary process activity. The technique used was devoid of figures containing physical stimuli. Thus the fantasy produced had to be a product of the subject's own imagery plus

his past experience with it. The instructions provided the only major structure with the technique.

The fact that the youngest group of children have the lowest mean production of primary process material is not in keeping with psychoanalytic theory. However, when one considers that verbal behavior was the behavior sampled, the data became more meaningful. The children in this particular group are much more limited in their experience with language than the other groups. In addition they did not have the same amount of experience in dealing with an unfamiliar adult outside the classroom situation and may have felt less comfortable in the testing situation than the older children. Nevertheless, it seem evident that primary process expression is not just a function of age alone, not just a function of language ability alone, and not just a function of school alone.

The results of the third hypothesis though confirmed both in Goodman's 1962 study and the present one are at odds with current thinking. According to Ames, et al. (1961) children's Rorschach records include more whole animal content than whole human content. They state that animal responses, ". . . as in the first 10 years, do not consistently increase from age to age (1961), pp. 65-66)." For the ages five through twelve the ratio of animal to human responses is roughly three to one (Ames, et al. (1952). The present findings are a little greater than the reverse of this, i.e., 3.8 humans to one animal.

These results seriously question the assumption underlying projective techniques with children that they identify more readily with animals than with people. Granted, the stimuli referrents such as doors and windows, are not conducive to animal responses. The case may simply be that the form and texture qualities of Rorschach cards lend themselves readily to animal interpretation. It may well be that children give more animal responses because of their more limited range of familiarity with other kinds of objects in the world. Children's toys, especially at the younger ages, are often in animal form and of course there are children's pets such as cats and dogs. Hence it seems quite reasonable that projective test interpretations, based on high animal content that is equated with developmental aspects of personality i.e., "immaturity," should be couched in very cautious terms. The conflicts that children--and adults for that matter--experience are centered around people. Thus tests like the Blacky (Blum, 1949) and the CAT might be less prone to misinterpretation if the stimulus cards depicted humans in the same activities as the animals. Both Biersdorf and Marcuse (1953) and Budoff (1960) have found no significant difference on a number of variables between animal and human figure stimuli.

Only part of the fourth hypothesis of the study was confirmed. The correlation between fantasy aspects of aggression and aggressive behavior did not differ significantly

from what one might expect by chance. The reasons for lack of confirmation may lie within a number of factors. First of all, the scales used, though reliable, may not be valid. The behavioral descriptions (see Appendix B) are commonly accepted descriptions of aggressive and dependent behavior. It would be profitable to have several clinicians rate the items as to whether or not they are descriptive of the kinds of behavior they purport to describe.

The relationship between fantasies of orality and dependent behavior did obtain. The factors behind such results may be, however, a function of the raters (teachers). The data indicate that teachers can consistently recognize aggressive behavior but for the most part they do not condone it. On the other hand dependency is fostered as a useful means of classroom control. In addition, dependent behavior is more socially acceptable in children than is aggressive behavior. In view of these alternatives no clear cut definitive statements can be made concerning the relationship of fantasy and overt behavior.

In addition to the above there are other areas which demand clarification by future research. The same study could be profitably replicated using female subjects in order to determine the similarities and differences in development of the two sexes. For example, Freudian theory is quite explicit in discussing the nature of anxieties facing the male child at the time of oedipal resolution but is not

nearly as clear concerning the issues which the female child must face. Too, there is a differential rate of development for the sexes and the difference of those conflict points ought to be reflected in primary process manifestations.

SUMMARY

Twenty children of kindergarten age and forty-three children of grades four, five and six were individually presented a series of stimulus cards and were asked to tell stories to them under two different conditions. The forty-three subjects had been given the same task three years prior when they were in grades one, two and three. One condition (A) consisted of the subject relating what he himself "saw going on," and the second condition (B) consisted of the subject relating what "another boy saw going on." The stories were analyzed for drive related ideation using Holt's system of scoring for primary process manifestations. It was predicted that condition B, via use of the third person, would allow relaxation of the subject's ego vigilance and that a greater amount of primary process intrusion would occur in the thought processes. This was substantiated by the significant increase in primary process intrusion as found in the stories under condition B.

A second prediction concerning the total productivity of drive related material was not substantiated. Though the data suggest that primary process manifestations seem to peak at those stages where conflict and psychic or biological stress are greater no definitive conclusions can be drawn.

Hence, the curvilinear relationship predicted in 1962 by Goodman was not clearly confirmed. Primary process intrusion was found to be significantly related to verbal productivity for certain age levels. But verbal productivity was found to differ significantly between all groups tested in the present study with the exception of grades five and six.

The third hypothesis, which predicted a greater number of human than animal responses would be given, was clearly substantiated. The results were discussed and their implications concerning projective tests with children were elaborated. The results raise some doubts as to the efficacy of using animal figures as stimuli for childrens' projective techniques.

The fourth hypothesis, that a relationship exists between fantasy and overt behavior was only in part substantiated. The reliability of the two scales purporting to tap aggression and dependency was satisfactory and a number of reasons were discussed which may have entered into the results.

The results of the study lend fairly strong support to psycholanytic thinking concerning the nature of primary process. Support was also given to the Holt system of scoring which was developed primarily within a spsychoanalytic framework.

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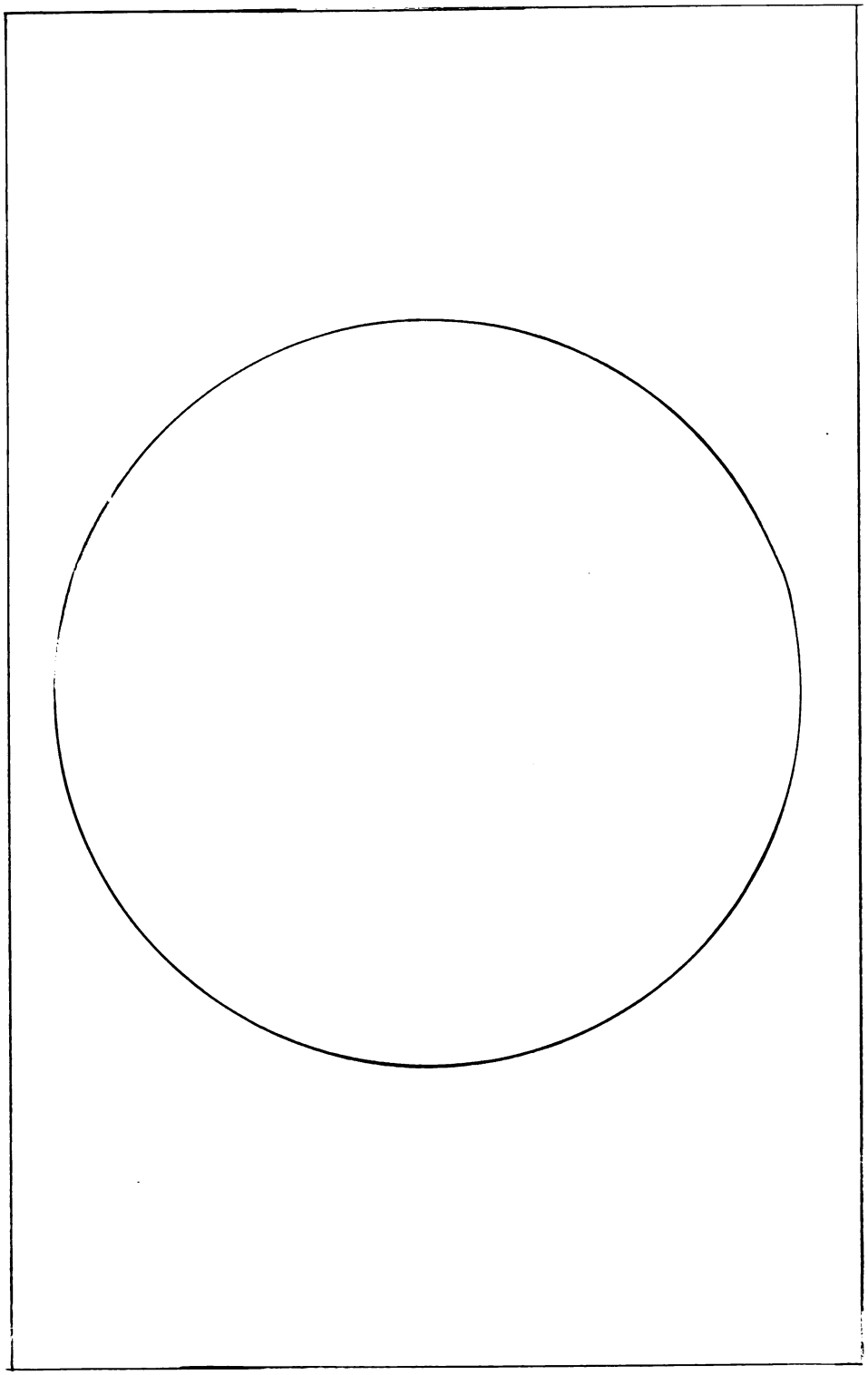
APPENDIX A

STIMULUS CARDS



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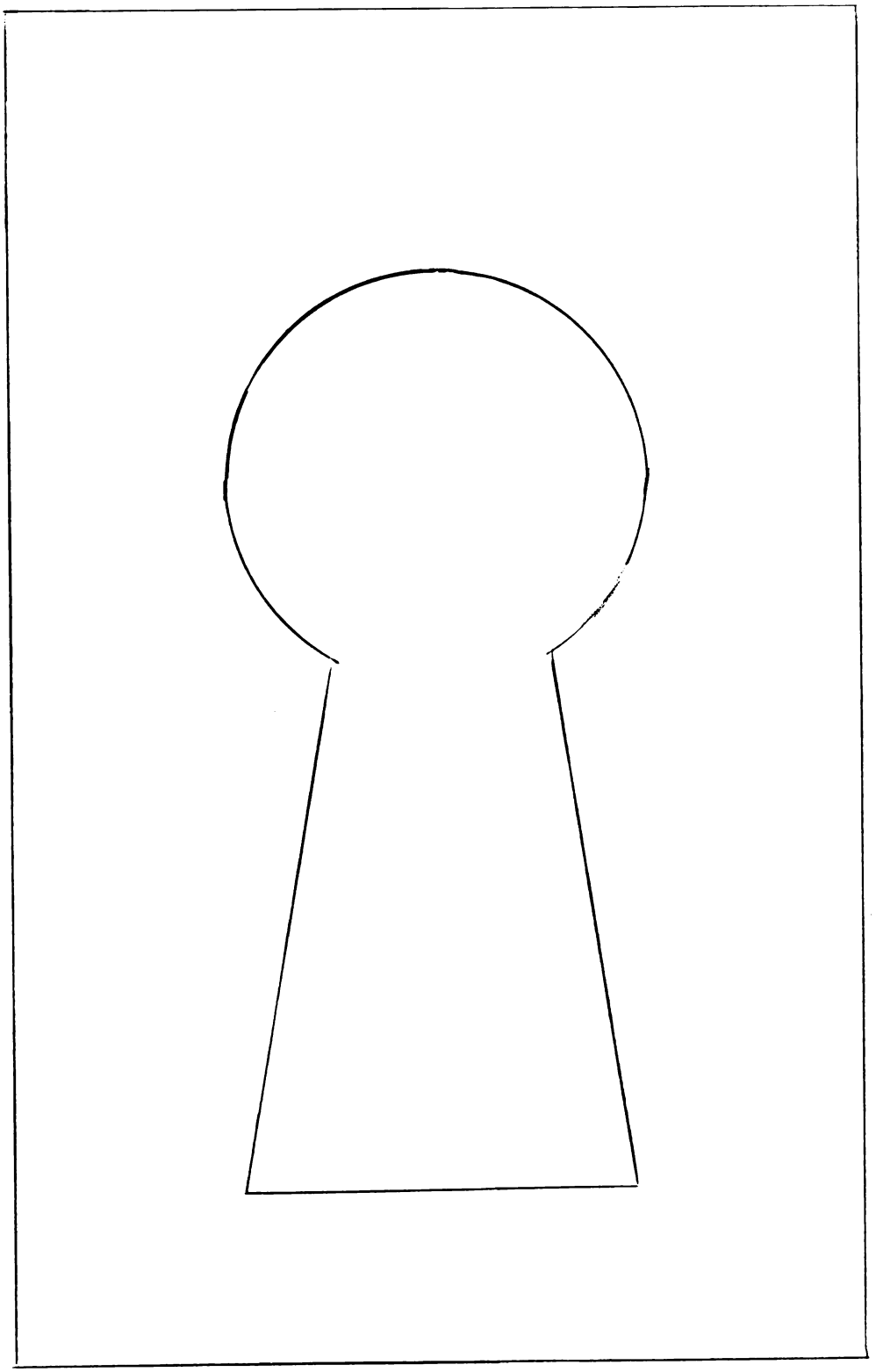

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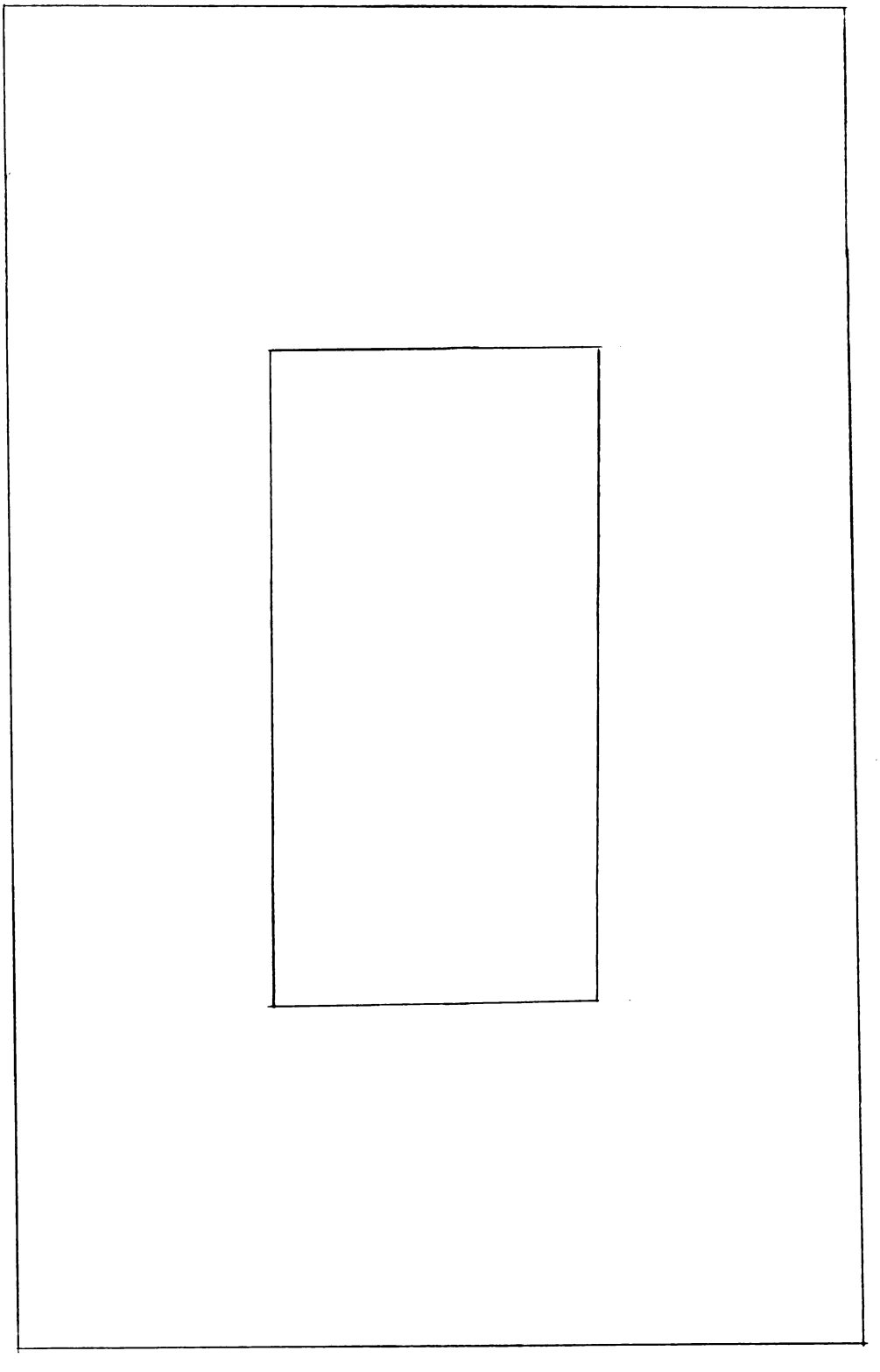
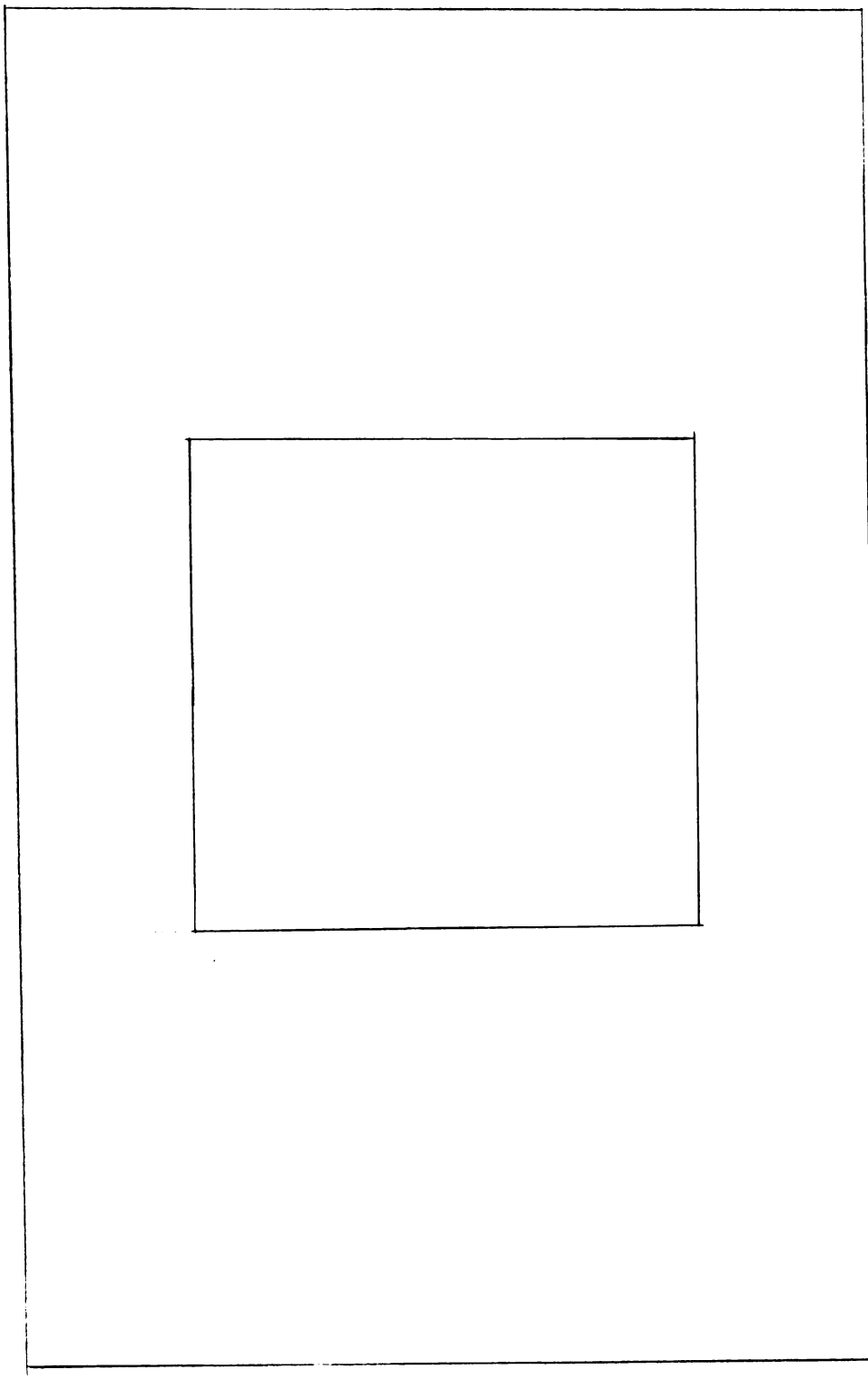
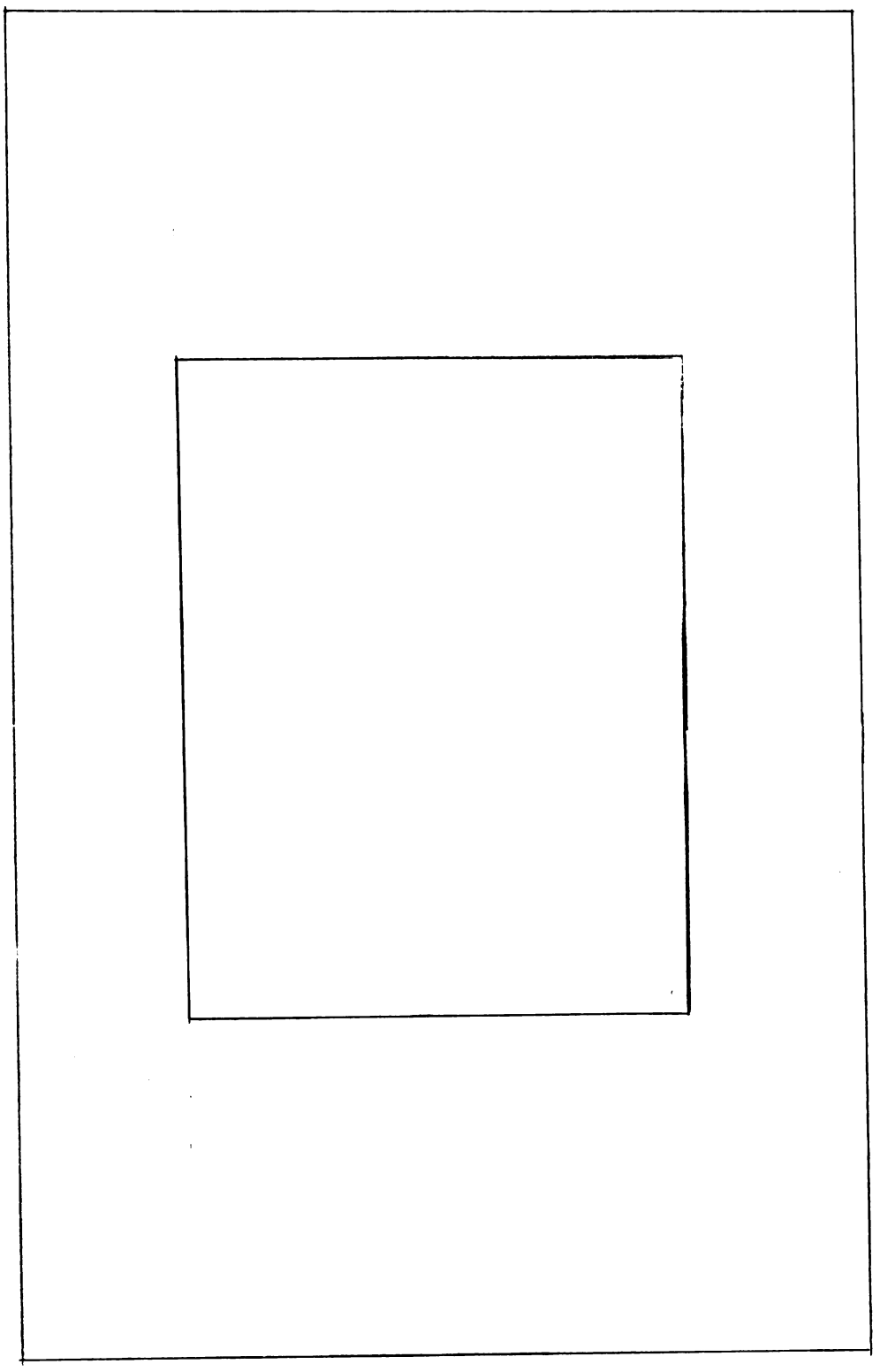


Door



Picture


Window

APPENDIX B

BEHAVIOR CHECKLIST

BEHAVIOR CHECKLIST

Name of Child:_____ Age:_____ Date:_____

Name of Teacher:_____

How long have you known this child?

This is a list of items describing many aspects of children's behavior. It is, of course, not an exhaustive description of children's behavior. Not all of the items will apply to the particular child you are describing, but quite a few of them will. First, go quickly through the list and put a checkmark (✓) in the first column by each item which applies to this child. After you have gone through the list, please go back through the checkmarked items and put another checkmark (✓) in the second column if the behavior is characteristic of the child. For example, you might consider a trait to be characteristic of a child if it is a behavior that would come to mind in discussing the child with another teacher, the principal or parents. Or it may be a descriptive feature of the child's behavior which stands out in your own mind as a result of your observation of him.

(Frequency of items checked 63 Subjects)

		Does this apply at all	Is it Characteristic
1.	Gets irritated or angry easily.	17	12
2.	Plays in a rough way.	19	7
3.	Doesn't pay attention to what grown-ups say to him.	20	12
4.	Pouts and becomes sullen when refused help.	11	7
5.	Rebels when routine is upset.	2	2
6.	Hates to lose.	24	12
7.	Seems to do things just to get others angry at him.	4	1
8.	Critical of others - always telling others what is wrong with them.	5	2
9.	Bullies other children	7	2
10.	Holds a grudge.	3	3
11.	Threatens to hit or hurt others.	4	2
12.	Has outbursts of temper.	9	3
13.	Often seems angry for no particular reason, expresses it in many different ways.	5	2
14.	Often breaks the rules in games with others.	6	0
15.	When told to do something he doesn't want to, he becomes angry.	16	11
16.	Prefers competitive games.	17	7

		Does this apply at all	Is it characteristic
17.	Aggressive and overpowering with other children.	7	1
18.	Bossy with others.	9	3
19.	Blows up easily when bothered by someone.	12	9
20.	Competes with other children.	20	8
21.	Does what he is expected to do, but grumbles about it.	11	2
22.	Gets other children stirred up to mischief.	11	5
23.	Laughs at the misfortunes of others.	16	5
24.	Teases other children.	16	4
25.	Tattles on others.	12	3
26.	Damages the property of others.	3	1
27.	Attributes bad qualities to another.	11	3
28.	Refuses to comply with a task.	3	1
29.	Shifts the blame to others for misdeeds.	14	7
30.	Wants very much to be approved of.	29	9
31.	Acts helpless to get attention.	7	4
32.	Doesn't fight back when other people attack him.	7	4
33.	Asks for help on tasks that he can very well do on his own.	12	7

		Does this apply at all	Is it characteristic
34.	Comes to others for protection, even when it is not necessary.	3	0
35.	Is a "copy-cat" - always imitating others.	9	1
36.	Waits for others to approach rather than seeks them out.	15	6
37.	Prefers standing by adults when other children are present.	3	1
38.	Likes to perform for others.	12	6
39.	Likes to perform for the teacher.	12	4
40.	Likes to do things well so others will notice him.	23	7
41.	Prefers following others to taking the initiative.	24	14
42.	Says he is not as good as others-seeks support for himself.	4	1
43.	Affectionate - enjoys being physically close to others.	10	4
44.	Seeks reassurance from teachers.	24	7
45.	Seeks reassurance from peers.	16	3
46.	Will believe anyone.	2	0
47.	Likes to be led.	10	4
48.	Likes to be taken care of.	7	1
49.	Hardly ever talks back to other children.	16	5
50.	Is easily fooled by others.	3	2

		Does this apply at all	Is it characteristic
51.	Too easily influenced by friends.	17	12
52.	Wants everyone to like him.	26	9
53.	Trusting and eager to please.	28	19
54.	Admires and imitates others.	14	6
55.	Very respectful to authority.	33	19
56.	Often helped by others.	6	0
57.	Accepts advice readily.	25	9
58.	Eager to get along with others.	33	14

APPENDIX C

SUPPLEMENTARY TABLES

Table 1. Mean weighted primary process scores for kindergarten group.

Kindergarten (1965)	Condition A	Condition B
Mean	3.10	4.50
S.D.	4.94	6.40

Table 2. Comparison of kindergarten, grades IV, V, VI.

		Summary		
Source	df	ss	ms	F
Conditions	1	11	11	.14
Age	3	1914	638	[1]8.29
(Cells)	(7)	(2542)		
Age x Conditions	3	617	206	2.67
Within Cells	55	4224	77	
Total	62	6766		

[1]Significant at beyond .01 level.

Table 3. Comparison of kindergarten, grades I, II, III.

		Summary		
Source	df	ss	ms	F
Conditions	1	111	111	.60
Age	3	987	329	1.69
(Cells)	(7)	(1468)		
Age x Conditions	3	370	123	0.63
Within Cells	72	14020	195	
Total	79	15488		

Table 4. Comparison of verbal productivity between groups (t-test).

	Kindergarten	Grade IV	Grade V	Grade VI
Kindergarten	--	[1]t = 5.31	[2]t = 4.30	[3]t = 7.37
Grade IV	--	--	[4]t = 2.13	[5]t = 2.94
Grade V	--	--	--	[6]t = 0.33
Grade VI	--	--	--	--

[1]Significant at beyond .0005 level (one tailed).

[2]Significant at beyond .0005 level (one tailed).

[3]Significant at beyond .0005 level (one tailed).

[4]Significant at beyond .05 level (one tailed).

[5]Significant at beyond .01 level (one tailed).

[6]Not Significant.

APPENDIX D

DATA SUMMARY

Kindergarten

Subject No.	Date	Age	Order	Pri Pro A	Pri Pro B	Pri Pro Total	Pri Pro Aggr.	Chklist Aggr.	Pri Pro Orality	Chklist Dep.	No. Humans	No. Animals
1	1965	5.417	A-B	3	4	7	6	0	1	19	1	8
2	"	5.333	A-B	0	4	4	4	21	0	1	4	1
3	"	5.917	A-B	0	2	2	0	8	2	10	7	0
4	"	5.667	A-B	0	0	0	0	5	0	7	1	1
5	"	5.833	A-B	0	0	0	0	20	0	1	4	0
6	"	5.667	A-B	9	9	18	9	0	7	16	8	2
7	"	5.833	A-B	6	9	15	12	1	1	14	5	1
8	"	5.583	A-B	0	0	0	0	12	0	5	2	0
9	"	6.083	A-B	0	2	2	0	2	0	9	4	0
10	"	5.583	B-A	19	0	19	0	0	19	16	5	0
11	"	5.917	B-A	7	24	31	21	1	8	16	10	3
12	"	5.583	B-A	1	10	11	10	0	1	15	2	0
13	"	5.667	B-A	0	0	0	0	0	0	9	1	2
14	"	6.000	B-A	4	5	9	6	8	1	3	8	1
15	"	5.500	B-A	2	0	2	2	7	0	8	2	1
16	"	5.917	B-A	6	4	10	6	1	2	16	2	0
17	"	5.583	B-A	3	0	3	2	29	1	5	5	4
18	"	6.000	B-A	0	0	0	0	3	0	15	2	0
19	"	5.500	B-A	2	14	16	14	0	2	10	6	2
20	"	6.083	B-A	0	3	3	2	5	1	10	9	3

Grade I (1962) & IV (1965)

Subject No.	Date	Age	Order	Pri Pro A	Pri Pro B	Pri Pro Total	Pri Pro Aggr.	Chklist Aggr.	Pri Pro Orality	Chklist Dep.	No. Humans	No. Animals
21	1962		A-B	4	29	33	29		4		6	3
	1965	9.917	A-B	14	10	24	14	22	2	3	9	5
22	1962		A-B	5	14	19	15		2		9	4
	1965	9.833	A-B	1	4	5	4	10	0	8	10	1
23	1962		A-B	6	10	16	10		4		10	0
	1965	9.917	A-B	6	7	13	4	2	5	15	8	0
24	1962		A-B	0	2	2	2		0		3	1
	1965	10.083	A-B	3	5	8	0	0	6	17	4	0
25	1962		A-B	0	2	2	2		0		6	0
	1965	10.167	A-B	3	10	13	5	10	2	19	7	3
26	1962		A-B	1	10	11	8		3		9	1
	1965	10.250	A-B	11	10	21	12	10	7	8	10	0
27	1962		A-B	4	22	26	22		4		10	1
	1965	10.333	A-B	11	12	23	20	16	1	7	9	0
28	1962		A-B	0	9	9	8		1		4	4
	1965	10.500	A-B	6	10	16	14	6	0	8	7	2
29	1962		B-A	1	11	12	10		2		5	2
	1965	9.667	B-A	1	6	7	0	21	7	15	8	2
30	1962		B-A	3	1	4	3		1		7	2
	1965	10.167	B-A	5	4	9	2	7	5	14	7	1
31	1962		B-A	22	33	55	52		3		10	1
	1965	9.583	B-A	3	0	3	0	5	1	24	8	3
32	1962		B-A	0	0	0	0		0		0	0
	1965	9.583	B-A	4	7	11	0	28	4	26	9	0
33	1962		B-A	16	15	31	23		5		5	4
	1965	10.250	B-A	14	9	23	18	20	1	1	8	1
34	1962		B-A	0	2	2	2		0		3	2
	1965	9.833	B-A	3	3	6	4	18	2	5	9	1
35	1962		B-A	0	4	4	4		0		2	2
	1965	9.750	B-A	0	3	3	0	13	1	8	8	2
36	1962		B-A	2	10	12	8		0		9	4
	1965	9.313	B-A	2	0	2	2	0	0	9	7	5

Grade II (1962) & V (1965)

Subject No.	Date	Age	Order	Pri Pro A	Pri Pro B	Pri Pro Total	Pri Pro Aggr.	Chklist Aggr.	Pri Pro Orality	Chklist Dep.	No. Humans	No. Animals
37	1962		A-B	4	1	5	2		3		5	2
	1965	11.250	A-B	4	10	14	12	0	2	21	8	1
38	1962		A-B	25	37	62	52		8		10	1
	1965	11.083	A-B	15	18	33	22	11	11	25	9	5
39	1962		A-B	6	8	14	4		4		5	2
	1965	10.750	A-B	2	10	12	8	6	2	9	8	3
40	1962		A-B	5	7	12	1		4		8	1
	1965	10.750	A-B	0	4	4	4	18	0	1	2	0
41	1962		A-B	2	4	6	3		3		6	3
	1965	10.583	A-B	3	6	9	4	9	5	1	8	3
42	1962		A-B	3	5	8	4		3		10	1
	1965	10.583	A-B	20	10	30	27	3	3	16	10	2
43	1962		A-B	8	3	11	4		0		8	1
	1965	10.500	A-B	10	9	19	13	7	4	22	8	1
44	1962		B-A	1	3	4	0		2		9	0
	1965	11.000	B-A	0	1	1	0	6	1	20	8	1
45	1962		B-A	20	21	41	34		1		9	1
	1965	10.583	B-A	10	14	24	15	0	9	27	10	5
46	1962		B-A	3	5	8	1		1		9	4
	1965	11.333	B-A	1	2	3	0	4	3	7	9	2
47	1962		B-A	3	1	4	0		2		1	1
	1965	10.500	B-A	4	9	13	11	1	2	23	10	3
48	1962		B-A	3	7	10	6		1		6	1
	1965	11.167	B-A	0	3	3	2	2	1	24	7	2
49	1962		B-A	0	0	0	0		0		3	1
	1965	11.333	B-A	0	0	0	0	1	0	4	1	1

Grade III (1962) & VI (1965)

Subject No.	Date	Age	Order	Pri Pro A	Pri Pro B	Pri Pro Total	Pri Pro Aggr.	Chklist Aggr.	Pri Pro Orality	Chklist Dep.	No. Humans	No. Animals
50	1962		A-B	2	2	4	4		0		7	4
	1965	11.917	A-B	7	14	21	16	21	3	30	9	2
51	1962		A-B	3	7	10	8		2		10	1
	1965	11.583	A-B	10	5	15	11	32	4	17	9	2
52	1962		A-B	5	20	25	20		5		8	2
	1965	12.250	A-B	19	21	40	31	4	7	10	9	2
53	1962		A-B	4	14	18	14		1		7	4
	1965	11.417	A-B	4	6	10	8	5	2	2	9	4
54	1962		B-A	8	9	17	10		1		5	6
	1965	11.917	B-A	9	20	29	20	3	9	22	8	2
55	1962		B-A	8	15	23	16		5		5	10
	1965	11.917	B-A	14	17	31	29	19	2	11	6	4
56	1962		B-A	2	14	16	4		6		7	3
	1965	12.000	B-A	17	14	31	23	32	2	14	8	2
57	1962		B-A	2	3	5	2		1		10	1
	1965	12.000	B-A	9	24	33	22	5	9	23	9	1
58	1962		B-A	3	5	8	4		2		8	1
	1965	11.417	B-A	7	16	23	20	18	1	22	9	2
59	1962		B-A	12	18	30	20		5		6	4
	1965	12.083	B-A	4	17	21	21	22	0	9	5	0
60	1962		B-A	2	9	11	4		3		9	1
	1965	12.083	B-A	9	17	26	20	35	4	20	8	0
61	1962		B-A	7	1	8	6		2		7	2
	1965	11.917	B-A	3	10	13	8	1	3	4	10	1
62	1962		B-A	4	20	24	22		2		8	5
	1965	11.917	B-A	4	9	13	9	1	1	10	8	3
63	1962		B-A	4	2	6	2		0		3	1
	1965	12.083	B-A	7	4	11	6	11	5	5	8	4