

Pittsburg State University

Pittsburg State University Digital Commons

Electronic Theses & Dissertations

7-1970

EXAMINER INFLUENCE WITH CHILDREN IN THE DRAW A PERSON TEST

Stephanie Syler

Kansas State College of Pittsburg

Follow this and additional works at: <https://digitalcommons.pittstate.edu/etd>



Part of the [Child Psychology Commons](#), and the [Education Commons](#)

Recommended Citation

Syler, Stephanie, "EXAMINER INFLUENCE WITH CHILDREN IN THE DRAW A PERSON TEST" (1970).
Electronic Theses & Dissertations. 159.
<https://digitalcommons.pittstate.edu/etd/159>

This Thesis is brought to you for free and open access by Pittsburg State University Digital Commons. It has been accepted for inclusion in Electronic Theses & Dissertations by an authorized administrator of Pittsburg State University Digital Commons. For more information, please contact digitalcommons@pittstate.edu.

EXAMINER INFLUENCE WITH CHILDREN

IN THE DRAW A PERSON TEST

A Thesis Submitted to the Graduate Division in Partial
Fulfillment of the Requirements for the
Degree of Master of Science

By

Stephanie Syler

KANSAS STATE COLLEGE OF PITTSBURG

Pittsburg, Kansas

July, 1970

ACKNOWLEDGEMENTS

The author especially thanks those who served as examiners for this study: Edwina Reimond, Becky Remund, Larry Finn, and Ron Zeigler.

Thanks also to Dr. Bill Bray for his time and for helping with statistical procedures, Dr. John Connelly for helping the author organize her thinking, and Dr. Vern Thompson for unknowingly providing cathartic value.

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
Statement of the problem	2
Need for the study	2
Definition of terms	3
Hypothesis	4
II. REVIEW OF LITERATURE	5
III. RESEARCH DESIGN	19
Subjects and administrators	19
Method	20
IV. STATISTICAL ANALYSIS OF RESULTS	22
V. DISCUSSION	37
APPENDIX: Drawings Obtained by Examiners	42
School 1: FE ₁	43
School 1: FE ₂	49
School 1: ME ₁	55
School 1: ME ₂	61
School 2: FE ₁	67
School 2: FE ₂	73
School 2: ME ₁	79
School 2: ME ₂	85
REFERENCES	91

ABSTRACT

This study investigated the influence of the examiner on children administered Machover's Draw A Person Test.

Forty third and fourth grade children from two elementary schools served as subjects. The administrators were college students.

The subjects were randomly divided into four groups of 5 at each school, so that each examiner administered the test twice, once at each school. Examiners were also randomly assigned to their groups.

It was hypothesized that children tend to use the administrator of the DAP as a model for their drawings. The statistical analysis of data, however, did not support the hypothesis.

During the course of the investigation, several other findings became apparent, one of them concerning creativity of drawings. This factor was then investigated and it was found that the drawings from one school were, according to statistical analysis, more creative than drawings from the other school.

The author of this study feels that, after investigation of the problem, it is difficult to determine what the child

actually does draw. It is felt, however, that one must have a thorough knowledge of the child's developmental stages, of the creative process of drawing, and of the relationships between these stages and the ability and interest of the child in graphic communication before assuming validity of the interpretative results offered by the DAP.

LIST OF TABLES

TABLE	PAGE
1. Per Cent of Undifferentiated, Same Sex and Opposite Sex Drawings by Child, Age and Sex of the Examiner	14
2. Type and Number Drawings Corresponding to Examiner Group	23
3. Percentages of Correct Responses Obtained by Each Examiner	24
4. Significance of Results Obtained by Comparing Each Examiner with Every Other Examiner . .	26
5. Critical Ratio of Percentages of Correct Responses in School 1 and School 2	26
6. Chi-Square Test of Significance of Correct Responses for Each Examiner	27
7. t-Test Between Mean Sizes of Female Figures Drawn for Each Female Examiner	28
8. t-Test Between Mean Sizes of Male Figures Drawn for Each Male Examiner	28
9. Mean Ratings by Judges for Each Set of Drawings Obtained by Each Examiner	31
10. t-Test Between Two Sets of Drawings	32
11. Tests on Differences Between Pairs of Means . .	33
12. Tests on Differences Between Pairs of Means . .	35

CHAPTER I

INTRODUCTION

With the development of the Draw A Person test and the first edition of her book Personality Projection in the Drawing of the Human Figure (1949) the ingenuity of author Karen Machover created a surge of interest in investigating the personality through the drawing of the human figure.

Charmingly simple in its administrative method, the instructions for the test merely require the administrator to instruct, "Draw a person." When the subject has completed this drawing he is told, "Now draw a person of the opposite sex."

Machover stated the interpretative principles and leads were reasonably verified through the clinical analysis of thousands of drawings studied with individual case records over a period of fifteen years (Machover, 1949).

But, what of the association between the administrator and the subject? What does the subject really draw? Does he draw an ego-ideal? Himself? Significant others? Or is the mere presence of the administrator enough to provide a subject with cues that he will consciously or unconsciously draw on his paper?

Are children more apt to use the examiner as a model when instructed to draw a person? If the examiner is what the subject draws, the validity of using the DAP as a projective technique must be questioned.

Statement of the problem

The problem and the purpose of this investigation was to determine the influence of the administrator on children given the DAP test.

Need for study

It can be seen that it is important to establish to what extent the examiner serves as a model for children. Throughout research on this topic this author has come across only three references to examiner variability pertaining specifically and only to the DAP. They include Sinnett and Eglash (1950), Holtzman (1952), and Datta and Drake (1968).

Machover herself tersely wrapped up any possibility that children may be influenced by the administrator by stating the child's drawing is composed of his emotional needs, meaningful experiences and maturation problems; yet, at the same time, she said no specific norms in terms of personality experiences at various ages had been established (Machover, 1949).

It has been assumed that a child, when instructed to draw a person, creates a figure representing his meaningful experiences. Then, the data drawn from the figure has been integrated to form a picture of the personality. Since its creation the DAP has been used as a projective technique for clinical assessment of personality. But if the child does not draw a figure made up of his meaningful experiences, if he uses a model such as the administrator and draws him, then the DAP would require re-assessment of its use as a clinical tool for the purpose of personality investigation.

Definition of terms

E and S. The examiners, or administrators, of the DAP are referred to as E (Bs), the subjects, the children taking the test, as S (SS).

Controls. Direct control in this investigation exists only in relation to the independent variable(s) which are the four examiners' significant difference as to height. No active control exists over extraneous variables; rather control is achieved passively by appropriate assessment and statistical analyses of variables. In this type research an attempt is made to control Ss just enough to elicit responses assumed to reflect some pre-existing characteristic of Ss; that is, S is assumed to use E as a model for

his drawings just because of that particular E's presence and his effect on S. No active attempt is made to influence the determinants of the response; only an indirect control exists over the conditions by random assignment of S to E.

FE₁, FE₂, ME₁, ME₂. Four examiners administered the DAP test. They were selected as to variation in height. FE₁ designated female examiner 1, the taller of the two female examiners. The shorter female examiner was designated as FE₂. ME₁ designated the taller male examiner, ME₂ the shorter male examiner.

Hypothesis

The hypothesis was made prior to the collection of data for this investigation: Children tend to use the administrator of the DAP test as a model for their drawings.

CHAPTER II

REVIEW OF LITERATURE

According to Goodenough (1928) Cook in 1885 and Ricci in 1887 appear to be the first to attempt a description of the nature of children's drawings. Most of the early articles on the subject of children's drawings are of a simple descriptive nature and involve much essential duplication of material.

In 1893 Barnes (from Goodenough, 1928) published an article on children's drawings and called attention to the developmental changes in drawings made by children of different ages.

Greater details and attention and analyses of children's drawings were afforded by Kerschensteiner (from Goodenough, 1928) who, in 1905, was given the task of reorganizing the course of art instruction in drawing for the folk schools of Munich. Kerschensteiner collected 100,000 drawings, made under carefully standardized conditions, by children in Munich and surrounding villages. His data was studied and statistically treated and he divided his collected drawings into three main classes: 1) purely schematic drawings in which the child is influenced chiefly

- by the knowledge of the object rather than its appearance;
- 2) drawings made in an attempt to reproduce the visual appearance of the object but in two dimensions only;
 - 3) those in which an attempt is made to give the idea of three dimensional space.

Goodenough reported that Kerschensteiner found boys excelled girls at all ages in types of drawing except in certain forms of decorative design in which girls did better. What was meant by excelling in types of drawings could not be determined by reviewing Goodenough's summary. Goodenough (1928) is, however, an excellent source from which to obtain a bibliography of the earliest investigations of children's drawings. According to her study the Leipzig laboratory in Germany contains the most extensive collection of children's drawings. A request for drawings was sent throughout the world but the number of drawings received was so great that by 1928 they had still received no adequate treatment.

Progression continued in the investigation of children's drawings and a conclusion was reached by Ayer (1916) that certain mental characteristics of individuals could be revealed through drawings. Ayer summarized the results of research studies in his reference to the differences in drawings evidenced by maturation as being reflections of

stages of development from the concrete to the abstract.

Then Goodenough, using the research of previous studies, developed the Goodenough Draw A Man test, 1926. An extension and revision of this was published under the title Goodenough-Harris Drawing Test (Anastasi, 1968). This test purports to measure the subject's intelligence through drawings (Goodenough, 1954).

Goodenough attempted to trace the development of the mental processes which govern the child's first attempts at representational drawing and led the reader back to the period of early infancy. She discussed the stages of differentiation, association, and recognition through which the child progresses and pointed out factors which tend to produce inability or defective ability in drawing, stating that an explanation of the psychological functions which underlie spontaneous drawing of children must go beyond the fields of simple visual imagery and eye-hand coordination and take account of the higher thought processes.

Beginning with Ayer in 1916 and continuing through Goodenough's investigations we find the first major uses of drawings, most of them centering around the theoretical problems regarding the relationship of intelligence and mental disturbances to drawings of children.

In 1938 Cameron presented his research on individual and social factors in the development of graphic symbolization. He felt that a child's graphic production needed to be looked upon as more than an acquisition of a skill, more than as an indicator of intelligence or as an expression of an antecedent mental picture.

This investigator feels that if we did consider a child's drawing in only these manners mentioned above we would miss something very fundamental to his growth processes.

Cameron presented his study with the attitude that drawing is an action in a social setting, developing symbolic functions in terms of individual organismic tendencies operating in a field of social modification and regularization. Drawing, stated Cameron, is primarily an organismic activity. He continued, in his study, to discuss the developmental stages of drawing.

It is quite plausible, then, that graphic communication of children can be of much clinical value. With this realization investigation of children's drawings continued and the interest in drawings as possible measures of personality increased.

It was through Goodenough's Draw A Man test that

Machover and her associates discovered individual drawings yield rich clinical data not related to the intelligence of the child.

Machover realized that communication in drawings is invaluable and sought to develop concepts underlying the technique of drawing analysis. She held that although some of the assumptions may lack experimental verification, the use of her DAP test had proved clinically valid (Machover, 1949).

The underlying assumption in Machover's work is that the human figure drawn by an individual who is directed to "Draw a person," relates intimately to the impulses, anxieties, conflicts, and compensations characteristic of that individual. The figure drawn is supposedly the person: the paper, his environment.

After extensive research and standardization Machover (1949) discussed and explained in detail the meaning of every part of an individual drawing, presenting impressive illustrative cases of normal, neurotic, and psychotic figure drawings.

What about the richness of the DAP as a supplementary clinical tool?

Studies of the DAP and of the human figure drawings

with adults and children, from 1950-1969, are extensive but concerned mainly with the validity of the drawings for differential diagnosis.

Noller and Weider (1950) found age, sex, and I.Q. to be significant factors as to what will be drawn by children. The purpose of their study was to standardize the DAP technique for children and to establish norms for age, sex, and intellectual level. In 1953 Weider and Noller again emphasized the need to investigate the characteristics of children's drawings and to show how age, sex, and intelligence are manifested.

In the years following these studies the research on the DAP included descriptions of various parts of the drawn human figure and their relationships to neurotic and psychotic trends of institutionalized patients (see Wilkinson and Schmadt, 1968). Other studies were continuations of Machover's assumption that the figure drawn represents the subject's own view of his body. Some studies showed agreement with this while others cited conflicting and inconclusive evidence for the validity of this statement.

A study by Blum (1954) concluded the DAP does not agree significantly with clinical procedures. Subjects were 31 American neuropsychiatric patients in Korea. Blum found

that ratings of these patients by psychological batteries, psychiatrists, and wardens did not agree with the DAP interpretations. "It is not a clinically valid test" (Blum, 1954).

In 1955 Swenson and Newton undertook a study of the development of sex differentiation on the DAP. They found sex differentiation improves as a function of age. Swenson and Newton administered the DAP to 163 children in grades one, three, five, seven, and eight, and to 22 college students. Pairs of drawings for each subject were rated for differentiation. It was found that girls tend to differentiate between sexes significantly better than boys until age 13; then, there is no difference. The patterns develop differently for boys and girls; girls improve from age six to eight and differentiate better than boys in pre-adolescence (Swenson and Newton, 1955).

It may be well to keep in mind, for this investigation, that Swenson and Newton claimed increased ability to differentiate between sexes is not related to the tendency for subjects to draw their own sex first. There is a fairly regular increase in sexual differentiation with increased age. There is no comparable increase in the percentage drawing their own sex first.

Two years after this study Swenson (1957) was ready to empirically evaluate human figure drawing. In examining the validity of Machover's DAP Swenson discussed the lack of definitive research on the basic meaning of human figure drawing. He maintained that few studies have proved that drawings do represent the drawer's perception of himself.

Apparently, the first study of the examiner as a variable in the DAP was done by Holtzman (1952) who was concerned with the effects of variations in the personality and sex of the examiner upon performance of male and female subjects.

The subjects were 40 male and female college students ranging in age from 18 to 58. The four Es were graduate students in psychology. Male E₁ was a foot taller and 60 pounds heavier than male E₂. The two female Es were the same size but differed significantly in the degree of feminine qualities.

The hypothesis that Ss tend to draw first a figure whose sex is similar to E's was rejected. The authors concluded that Ss tend to draw first a figure whose sex is similar to their own (Holtzman, 1952). This is a reiteration of the basic assumption by Machover.

The most recent study on the influence of the examiner

on the DAP was by Datta and Drake (1968). The authors pointed out that the sex of the administrator and its relationship to DAP performance, in the literature of children's drawings has not been considered.

In this study 947 Head Start pre-schoolers, 3-0 to 6-11 years of age, were tested individually. The Es included 12 females and 6 males. The usual administrative procedures were followed and drawings were classified as stringently differentiated if two sex appropriate characteristics appeared; leniently differentiated if one sex appropriate characteristic appeared; recognizable (as a human figure if no sex appropriate characteristics appeared (undifferentiated); unrecognizable if no form was discernible.

The results are presented in Table 1. No significant differences were found in proportion between the drawings by boys and girls of the same sex figures obtained by male Es; 44 per cent of the older girls, but only 13 per cent of the older boys tested by females drew same sex figures.

According to Table 1 Datta and Drake found that the apparent earlier development of sexual identification in girls is dependent on the sex of E.

Datta and Drake concluded that at age 5-0 to 6-11 a

TABLE 1

Per Cent of Undifferentiated, Same Sex and Opposite Sex Drawings by Child, Age and Sex and by Sex of the Examiner

	Per Cent of Drawings			
	Younger Child 3-0 to 4-11		Older Child 5-0 to 6-11	
	Boys	Girls	Boys	Girls
Same sex E				
Undifferentiated drawings	92%	81%	72%	48%
Same sex drawings	04	13	18	44
Opposite sex drawings	04	06	10	08
N	52	190	74	156
Opposite sex E				
Undifferentiated drawings	88%	89%	75%	74%
Same sex drawings	08	08	12	16
Opposite sex drawings	04	02	13	10
N	195	37	166	69

Note: From Datta and Drake (1964).

stable internalized sexual identity is not yet developed, so children are dependent on cues and models. Could the fact that boys did not demonstrate this ability to respond to sex-related stimulus characteristics indicate a later development of the modeling component?

Robach, in 1968, reviewed 18 years of research findings on the DAP. He stated that the significant majority of studies have failed to support Machover's hypothesis and the test should be removed from the battery of the clinical psychologist (Robach, 1968).

Robach brought out the much needed realization of the influence of artistic quality of the figure drawn in DAP interpretation. He cited Swenson (1957) who rejected the hypothesis that the human figure drawn represents the drawer's self-perception.

In 42 out of 45 studies Swenson and Robach concluded Machover's hypotheses were not supported, or were not generally supported, or presented conflicting evidence. In the other three studies it was found her hypotheses were not really tested (Robach, 1968).

This review of literature has discussed the development of the uses of children's drawings to obtain various measures, depending on the researcher and on what he is

seeking to determine. Abundant published material is available on the nature of children's drawings and on investigations in the various aspects of this subject. Most references cited in this chapter include bibliographies to which the reader can refer for additional information. Goodenough (1928) is a suggested source for bibliographies concerning the earliest studies of children's drawings while Robach (1968) should be consulted for a review of more recent findings.

One can hardly conclude an investigation of human figure drawings of children without discussing creativity. Two references for the meaning of creativity are Tomas (1964) and Moustakas (1967). Creativity is an elusive subject yet it is a potential found in every human being and the nature of it cannot go unrecognized and uninvestigated. For if we lose hold of it we have denied the recognition of another individual's self-expression.

Piaget (1932) discussed the arrest and development and even decline of drawing interest during the age period 8-10. (These years include the subjects used in this investigation).

This period of a child's development is of enormous significance. Piaget explained that drawing, because of its structure and conventions, is too restricted to survive as an instrument of communication in competition with the

spoken word. Advances in verbal symbolization are being rapidly made between the ages of eight and ten and Piaget maintained that progress in drawing ceases. Spoken language, Piaget explained, is multilateral; drawing, unilateral.

Cameron (1938) presented drawing as a phase within the genetic development of language. A Child between the ages of 8-10 needs to be communicated with verbally. Although graphic representation can be of great value and can lend information as to personality factors of this child, his most precious form of self-expression appears to lie in a more direct form of communication--as Piaget would hold--verbal communication.

However, graphic representation is a mode of self-expression. It is a process of creativity and should not be underestimated or overlooked.

This study is concerned with the validity of the DAP as a clinical tool, for if what the child draws does not reflect his emotions, meaningful experiences, problems of maturation, and other behavioral reactions to his environment then how can psychologists use the DAP for clinical assessment?

Through this review of literature the need for further research becomes apparent. The lack of unification and the

conflicting evidence of studies does little to enhance the potential of Machover's device as a valuable clinical tool.

CHAPTER III

RESEARCH DESIGN

Subjects and administrators

The Ss included 20 third and fourth grade boys and girls from the Horace Mann laboratory school at Kansas State College, Pittsburg, Kansas, and 20 third and fourth grade boys and girls from the George E. Nettles school, Pittsburg, Kansas. They were picked by the following random method.

The Horace Mann school included 21 third graders and 25 fourth graders. The George E. Nettles school included 22 third graders and 35 fourth graders. All students at Horace Mann were numbered from 1 to 46 according to the alphabetical order of their last names and beginning with grade 3. The same procedure was used at Nettles, numbers ranging from 1 to 51. At each school 20 numbers were then selected according to a table of random numbers. Final selection included 10 third graders and 10 fourth graders from Horace Mann and 7 third graders and 13 fourth graders from Nettles.

Age range for Ss in year-month notation was 8-4 to 10-5.

Four students at Kansas State College administered the Draw A Person test. FE₁ was 6'3" in height and weighed 170

pounds; FE₂ was 5'2", 110 pounds; ME₁ was 6'6", 230 pounds; and ME₂ was 5'7", 155 pounds. The Es were trained by this investigator to administer the test, according to the group procedure instructions in Machover (1949).

Method

The testing took place on two different days, the Ss from School 1 tested on a Thursday and the Ss from School 2 tested on a Monday. Procedures at both schools were identical.

Each of the four Es was randomly assigned to a group of five children at each of the two elementary schools; that is, each E administered the DAP to a group of five Ss at School 1 and a group of five Ss at School 2.

Standing in front of his group E instructed, "Using the paper and pencil in front of you, draw a person." The E was instructed to tell his group, "I am not interested in how well you draw a person but in how you try to draw a person." This was done to alleviate apprehension or anxiety of S about turning in a desirable "artistic" figure.

Drawing time was not to exceed 15 minutes. During this time E remained standing in front of the group. If, at the end of 10 minutes all Ss had not finished their drawings, E reminded them that they had five more minutes in which to finish their drawings.

Drawings were collected as soon as all were completed. The E then passed out another sheet of paper and instructed the group: "Now draw a person of the opposite sex. If you drew a female the first time, draw a male. If you drew a male first, draw a female."

A total of 80 drawings was collected, 40 from each school. Each drawing included the child's name and the number of the drawing. The drawings were separated, according to examiner and school, and examined.

It should be noted that Set 1, when mentioned in the following chapter, refers to the drawings of School 1 and Set 2 refers to School 2. The terms Set 1 and Set 2 do not imply that this drawing was the first or second drawing of a particular S.

CHAPTER IV

STATISTICAL ANALYSIS OF RESULTS

It was hypothesized that Ss with FE₁ would draw a larger female than male figure; Ss with FE₂ would draw a smaller female than male figure; Ss with ME₁ would draw a larger male than female figure; Ss with ME₂ would draw a smaller male than female figure.

The number and type drawings for each E and each school appear in Table 2. The first group is indicated by FE₁. Referring to the table, one boy and four girls were in this group at Horace Mann. The male S drew a larger female than male figure. Two female Ss drew a larger female than male figure and two female Ss drew a female and male figure of the same size. In this group at Horace Mann there are three correct responses, correct implying that a larger female figure was drawn in this group with FE₁.

This table will be helpful for further reference when discussion of differences between the schools is presented.

In order to determine the significance of the difference between the results obtained by the four administrators, a critical ratio of percentages was found. To do this the

TABLE 2

Type and Number Drawings Corresponding
to Examiner Group

E/Ss	Set 1 Drawings Horace Mann School				Set 2 Drawings George E. Nettles School			
	Larger Female	Larger Male	Same Size	N	Larger Female	Larger Male	Same Size	N
FE ₁ Boy	/			1	//	/	/	4
Girl	//		//	4	/			1
Total N	3	0	2	5	3	1	1	5
FE ₂ Boy			/	1	/			1
Girl		//	//	4	//	/	/	4
Total N	0	2	3	5	3	1	1	5
ME ₁ Boy	/	/	/	3	/	//	/	4
Girl	//			2			/	1
Total N	3	1	1	5	1	2	2	5
ME ₂ Boy	/	/		2	/	///		4
Girl		/	//	3	/			1
Total N	1	2	2	5	2	3		5

the percentage of "correct" drawings for each E was found. By "correct" is meant that Ss of FE₁ drew the larger female than male figure, Ss of ME₂ drew a smaller male than female figure and so on. The percentages correct from both schools were combined, yielding one percentage result for each E. By referring to Table 2 it can be found that in Group 1 (FE₁) there were 6 correct drawings from a total of 10; that is, combining the two sets, 6 Ss drew a larger female than male figure. Thus 60 per cent correct drawings for this group were obtained.

Table 3 presents the percentage of correct responses obtained by each E.

TABLE 3

Percentages of Correct Responses Obtained
by Each Examiner

E	Responses		Total	Percentage Correct
	Correct	Incorrect		
FE ₁	6	4	10	60%
FE ₂	3	7	10	30
ME ₁	4	6	10	40
ME ₂	3	7	10	30

A critical ratio of percentages was determined by comparing each E with every other E. Since FE₂ and ME₂ obtained the same number of correct responses, a z score was not obtained in this comparison. These results were converted to z scores, found in Table 4.

No significant difference was found between any Es. Therefore, it may not be concluded that one type E serves as a model more than does another type E in relation to size of pictures drawn by Ss.

To assume similarity between the two populations from which the samples were drawn, it was necessary to find the critical ratio of percentages of correct responses between the two schools. This data is found in Table 5. The z score yields 1.54, also not significant. This implies that Ss at one school do not tend to copy an E more than the Ss at another school.

Were the results obtained from Ss significant in themselves? Is the fact that 60 per cent Ss in Group 1 (FE₁) drew larger female than male figures, as was hypothesized, significant?

To determine this as χ^2 distribution was found, taking into account the obtained probabilities for each set of results. A binomial expansion was necessary, yielding the

TABLE 4

Significance of Results Obtained by Comparing Each
Examiner with Every Other Examiner

E	z score	p
FE ₁ , FE ₂	1.41	> .05
FE ₁ , ME ₁	.91	> .05
FE ₁ , ME ₂	1.41	> .05
FE ₂ , ME ₁	.47	> .05
FE ₂ , ME ₂	---	---
ME ₁ , ME ₂	.47	> .05

TABLE 5

Critical Ratio of Percentages of Correct
Responses in School 1 and School 2

School	Percentage Correct Response	z
School 1	35	1.54
School 2	45	
		p > .05

probability of obtaining a significant outcome of the
results of each group (Refer to Table 3 for group results).

After obtaining ρ for each group its logarithm is found. This data is presented in Table 6. These logarithms are then summed and substituted in the formula,

$$x^2 = (-2)(2.3026) \sum_{i=1}^k \log_{10} \rho .$$

The product of $(-2)(2.3026)$ is a constant for each of the probabilities.

Chi-square then equals

$$x^2 = (-2)(2.3026)(-3.2396)$$

$$x^2 = 14.92 .$$

Degrees of freedom equal $2k$, where k is the number of probabilities to be combined.

TABLE 6

Chi-Square Test of Significance of Correct Responses for Each Examiner

B	ρ	$\log_{10} \rho$
FE ₁	.20	9.3010 -10
FE ₂	.12	9.0792 -10
ME ₁	.20	9.3010 -10
ME ₂	.12	9.0792 -10
$x^2 = 14.92$		$\sum_{i=1}^k \log_{10} \rho = 36.7604 -40$
df = 8		$\sum_{i=1}^k \log_{10} \rho = -3.2396$
$\rho > .05$		

This value of χ^2 , 14.92, is not significant at the .05 level of confidence.

Another statistical test was applied to determine the significance of the difference between heights of female figures drawn by Ss with FE₁ and FE₂ and between heights of male figures drawn by Ss with ME₁ and ME₂. These results are presented in Tables 7 and 8. The values of t are not significant in either test.

TABLE 7

t-Test Between Mean Sizes of Female Figures
Drawn for Each Female Examiner

Examiner	Mean Size of Female Figures Drawn	
FE ₁	4.24 inches	$t = 1.17$
FE ₂	3.31 inches	

TABLE 8

t-Test Between Mean Sizes of Male Figures
Drawn for Each Male Examiner

Examiner	Mean Size of Male Figure Drawn	
ME ₁	4.01 inches	$t = 1.40$
ME ₂	5.20 inches	

The results of these tests are not significant and the hypothesis that the children tended to use the administrator as a model in the DAP must be rejected.

Although the main hypothesis of this investigation has been presented, tested, and analyzed, additional findings, obtained during the course of this study, have come to the attention of this investigator, who feels a presentation of this information would be helpful.

During early analyses of the drawings and discussion with the administrators it was casually observed that the drawings from School 1 appeared somewhat different from the drawings of School 2. With further observation it was decided that the factor which differed concerned the "creativity" of the drawings. Those in Set 1 appeared more "creative" than those in Set 2. This factor of creativity will be discussed in the following chapter.

To determine if the early observations of this investigator were correct, all drawings were rated by 15 judges. These judges included 13 students from seven areas of course majors and two elementary school teachers from schools other than those used in this study in Pittsburgh. Each judge was presented with four packets. Inside of each packet were two sets, each containing 10 drawings marked Set 1 and Set 2.

Directions were included which explained that the drawings were made by third and fourth grade students and that the judges were to indicate their opinion of the creativity (defined as mentioned previously) of the sets of drawings in each packet. The rating scale was explained and judges were informed that a rating of 1 indicated he felt this set of drawings was least creative; 2, less creative; 4, more creative; 5, most creative. A rating of 3 indicated that the judge could not accurately state if he felt this set of drawings was more or less creative.

Table 9 presents the mean ratings by judges given each set in each packet.

A t-test was performed to determine if there was a significant difference between the judges' ratings of creativity given to each school. These results are presented in Table 10. Set 1 indicates School 1; Set 2, School 2. N indicates the number of ratings. Fifteen judges rated four packets, each packet representing one of the Es. Each packet contained Set 1 and Set 2; therefore, 15 ratings for four packets, each containing two sets yields 120 total ratings, or 60 for each set.

The test proved significant beyond the .01 confidence level.

TABLE 9

Mean Ratings by Judges for Each Set of Drawings
Obtained by Each Examiner

FE ₁ Packet 1		FE ₂ Packet 2		ME ₁ Packet 3		ME ₂ Packet 4	
Set 1	Set 2	Set 1	Set 2	Set 1	Set 2	Set 1	Set 2
M 4.13	2.47	2.40	3.33	4.60	3.47	3.53	3.33
N 15	15	15	15	15	15	.5	15

TABLE 10

t-Test Between Two Sets of Drawings

Set	M	N
Set 1	3.67	60
Set 2	2.53	60
t =	6.54	$\Sigma N = 120$
df =	118	
p	< .01	

What does this mean? Before this is answered let us look at the differences in ratings given to each examiner.

To determine the significance of the differences in judges' ratings given to each E at each school, an analysis of variance was applied. An f-ratio of 42.70 was found significant at the .05 confidence level for ratings of creativity given at School 1. The q^2 statistic (see Winer, 1962, pp. 111-115 for description of this statistical procedure) was then used to test the significance of the difference of all pairs of mean ratings given each E compared with every other E at School 1. These results are presented in Table 11.

To find the difference between the total ratings given FE_1 and ME_1 , for example, we find corresponding numbers 1 and

TABLE 11

Tests on Differences Between Pairs of Means

School 1

Examiner		FE_2	ME_4	FE_1	ME_3
	Totals	36	53	62	69
FE_2 2	36	--	17	26	33
ME_4 4	53		--	9	16
FE_1 1	62			--	7
ME_3 3	69				--
	$q_{.95}(r, 42)$	2.26	2.44	3.79	
	$\sqrt{n} \text{Mres} q_{.95}(r, 42)$	1.9734	2.3736	2.6151	
	Cell	(2)	(3)	(4)	

3 indicated below FE_1 and ME_1 . Going across the top row to the extreme right to number 3, we find a total rating of 69. Going down the first column on the left we find the number 1, and reading across to 3 again, we find the difference $T_3 - T_1$ ($69 - 62$) = 7. Is this significant?

To determine this we find r , which is 2. This r is

equal to the steps apart of the totals. The totals of 1 and 3 are 2 steps apart on the table; that is, counting the 1 and the 3 yields 2 numbers or 2 steps.

Looking at cell 2, since $r = 2$ steps apart, we find a critical value of 1.97. The difference $T_3 - T_1 = 7$ is larger than our critical value 1.97; hence, this is significant.

As another illustration let us find the significance of differences between ratings given FE_1 and FE_2 . Here, the difference in totals is, looking across at 1 and down at 2, 26. The totals here are $r = 3$ steps apart; from 2 (FE_2) to 1 (FE_1) on the table are 3 numbers. Finding a critical value of 2.37 in cell 3, since $r = 3$ steps apart, we see that 26 is much larger than our critical value.

According to this table every difference, comparing each E with every other E, is significant. We can conclude that at School 1 there was a significant difference between ratings given each E, in relation to creativity of Ss drawings.

At School 2 the results are very different. An f score of 1.21 proved not significant at the .05 level of confidence. However, the q statistic was again used to find if any significant difference existed between the ratings given the

examiners. These data are presented in Table 12.

The largest difference in totals, looking at Table 12, is between FE_1 and ME_1 . So let us see if this is significant. Looking at 1 (FE_1) down, and 3 (ME_1) across, we see the difference in totals is 15 and that these totals are 4 steps apart on the table So we find Cell 4 and a critical

TABLE 12

Tests on Differences Between Pairs of Means

School 2

Examiner		FE_1 1	FE_2 2	ME_2 4	ME_1 3
	Totals	37	50	50	52
FE_1 1	37	--	13	13	15
FE_2 2	50		--	0	2
ME_2 4	50			--	2
ME_1 3	52				--
$q .95(r, 42)$		2.86	3.44	3.79	
$\sqrt{nMresq} .95(r, 42)$		17.8698	21.4938	23.6806	
Cell		(2)	(3)	(4)	

value of 23.68. The difference $T_3 - T_1 = 15$ does not reach the critical value, 23.68; hence, the difference here is not significant. This table indicates no significant differences between the ratings given each E at School 2.

CHAPTER V

DISCUSSION

Concerning those results which applied directly to the hypothesis of this study and which were presented in Chapter Iv, various questions arise. Could it be that the examiner was used as a model but that this did not appear necessarily in height of the drawing? It would be difficult to determine if a child were attempting a representation of the examiner.

Could it also be that at certain ages a subject is more likely to use the administrator as a model more so than at other ages? Does a child who lacks the ability to draw or copy fail to produce a drawing which is meaningful and which can be analyzed on Machover's terms?

Does the child, as stated in Goodenough (1928) draw what he knows rather than what he sees?

This investigator feels one needs a great deal of understanding of the developmental stages of the child and of drawing before making any analyses of the human figure figure drawing tests used today.

Concerning the creativity of the drawings obtained, it was not an easy task to define just what this factor was

that caused a difference in appearance between the two sets of drawings. As mentioned previously, with early observations, those drawings in Set 1 appeared different from those in Set 2 as to the degree of unusualness, the amount of space used on the paper, the various decorations, and the modes of expressions characterizing the drawings.

With further observation the differences became more apparent and an attempt was made to define the factor which caused the difference.

To state that the factor is creativity is done with some reservation, for how can anyone state that a child's drawing is not creative, indeed that any mode of expression in itself is not creative? Every individual embodies and contains a uniqueness which makes him unlike any other person. And so in observing a child's drawings one cannot really claim that this mode of expression is not creative. The 80 drawings obtained during this study have been included in the appendix. A casual observer will be able to notice a difference in sets 1 and 2 but may not readily or easily be able to state just what this difference is.

Growth of self continues throughout life. And within each person lies the urge to express oneself. If cultivated properly, the person moves toward an originality of expression,

his unique mode of expression leading toward actualization. It is a creative process.

Moustakas (1967) maintains that creativity is an abstraction that attains a meaningful, concrete form in a particular and unique relation. Each child's drawing must, then, contain an amount of creativity which in its final representation is meaningful to that child and presented as his drawing.

Following this line of thought this investigator would have to conclude that Machover is correct in maintaining that the child draws what is meaningful to him. With this in mind and referring also to the review of literature on creativity presented in Chapter II, it can be seen that defining creativity was not easy. No drawing could be considered non creative. The operational definition of creativity implied a drawing unlike a representation one would think a third or fourth grade student would make. A creative drawing was one in which more decoration was added; decoration included anything extra drawn on the paper outside the person but yet an integral part of the total drawing. Decoration also implied shading and extra attachments drawn on the person. Creativity did not mean adaptation. In other words, it may be that those subjects who correctly responded

to the administrator, who used the administrator as a model, were less "creative" in their drawings than those who did not use the examiner as a model. A correlational study would provide this information.

After the study was completed the administrators also reported a difference in testing atmosphere between the two schools although, as mentioned previously, the testing procedures at both schools were identical with environmental stimuli controlled.

The administrators reported a "noisier" atmosphere at School 1. Students talked aloud to one another during the testing and in some instances were more competitive in their drawings; that is, as two administrators noted, their subjects were eager to be the first ones finished and to attain a "better picture" than the students next to them.

Examiners reported that the testing atmosphere was more restrained in School 2; students completed their drawings in a more orderly manner and less talking occurred among the students.

Was it these conditions that yielded more "creative" drawings from School 1 than from School 2?

It would be interesting to ascertain why School 1 presented more creative drawings than School 2. But this would

require a great deal of additional research and a knowledge of the types of school systems and teaching techniques. There are numerous variables that would need to be taken into account.

The drawings obtained in this study are presented in the Appendix according to examiner and school. The drawings themselves afford an abundance of information and there is a great amount of research one could conduct on the subject.

In conclusion, Machover's DAP test has been held as a valuable clinical tool but, perhaps, a more unified analysis of the DAP test is necessary in order to assure and allow for its progressive and valid use.

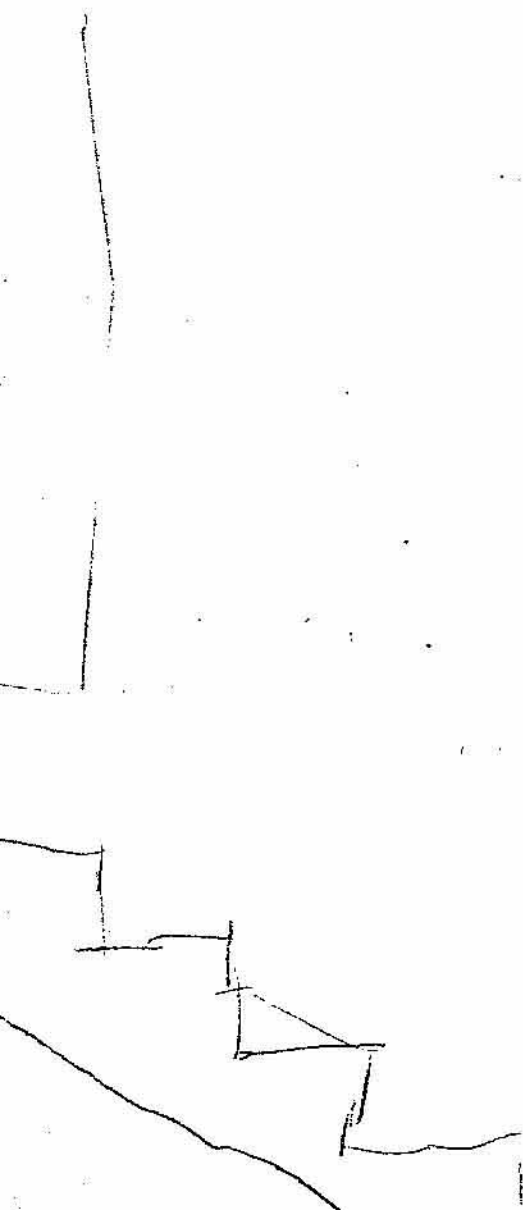
It cannot be stressed enough that a child's drawing can contain much valuable information, in part because it is simply a mode of expression. And since we cannot afford to overlook any mode of expression the child elicits then we must make certain that our clinical instruments, such as the DAP test, which convey these modes and allow for valuable interpretation, are valid.

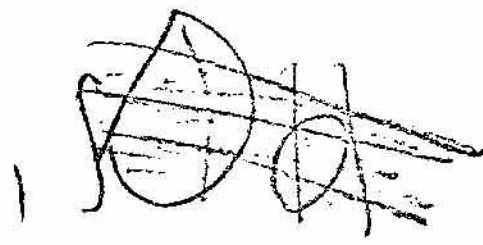
APPENDIX

Drawings Obtained by Examiners

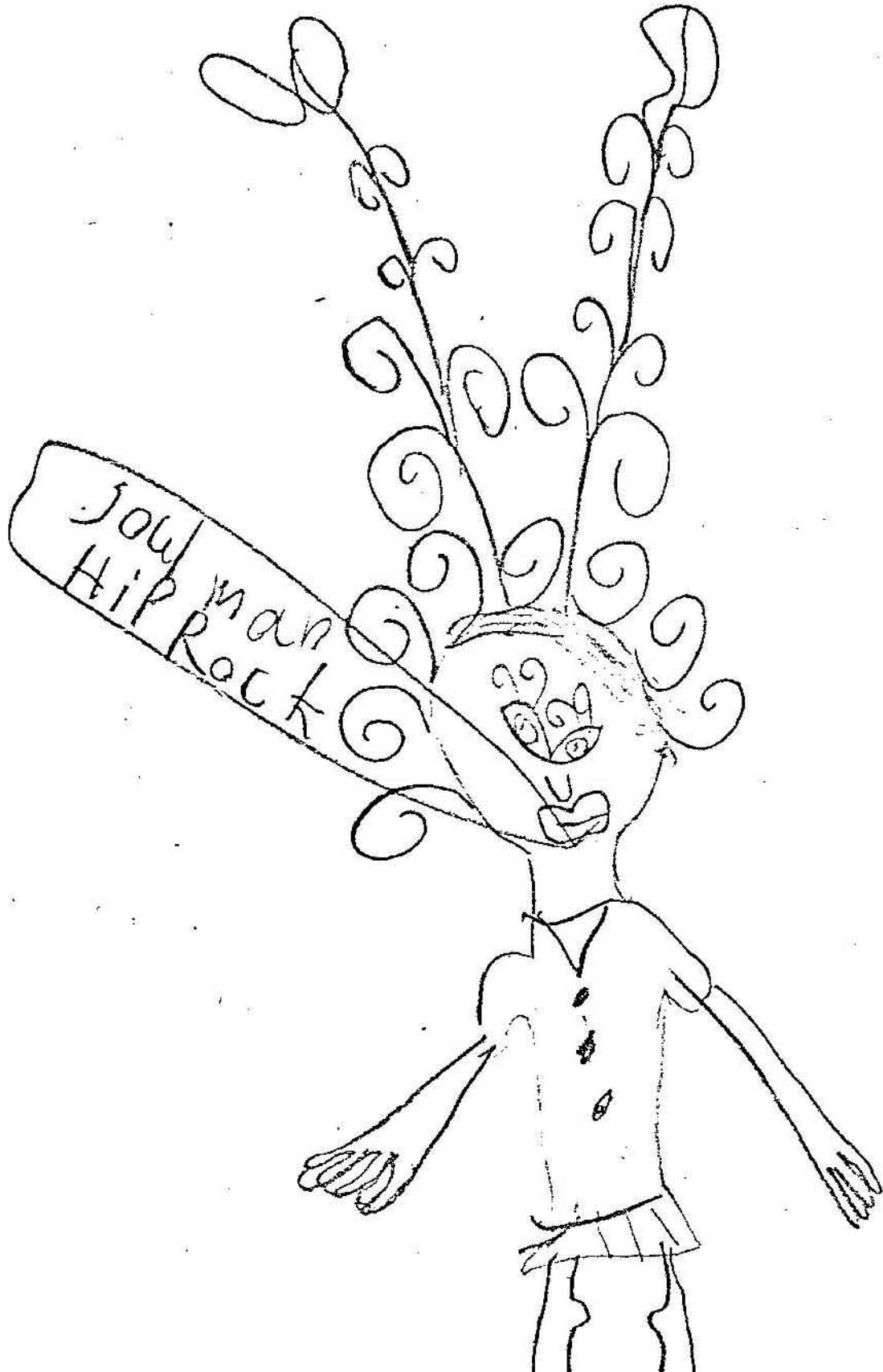
School 1

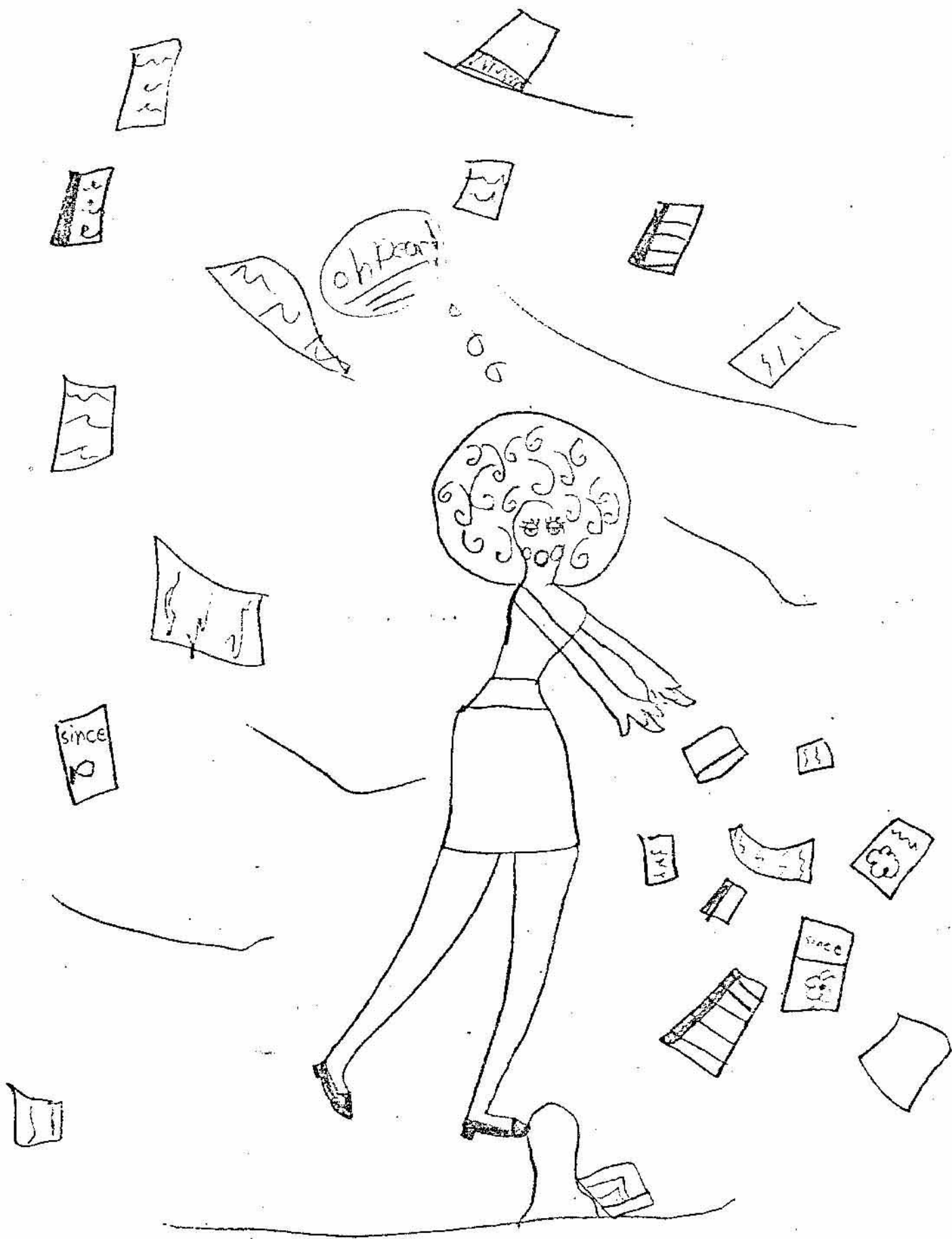
FB₁





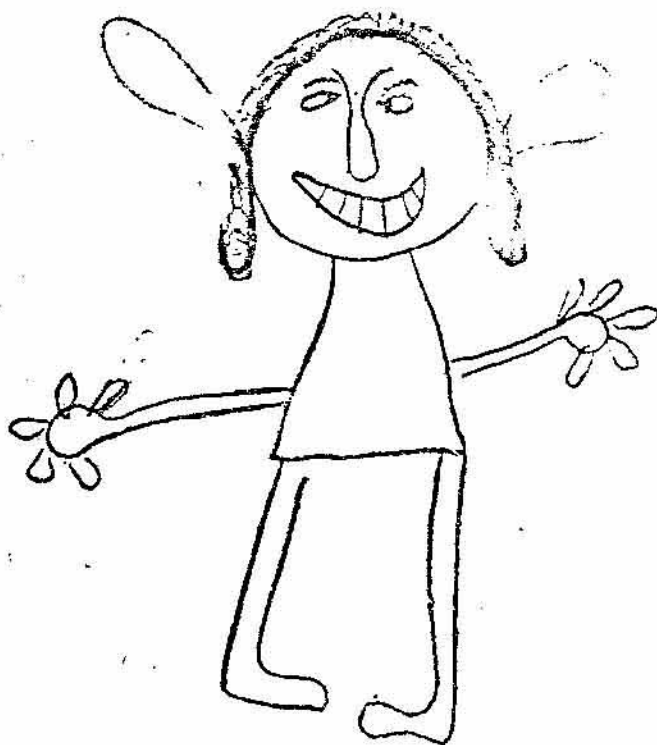
to make

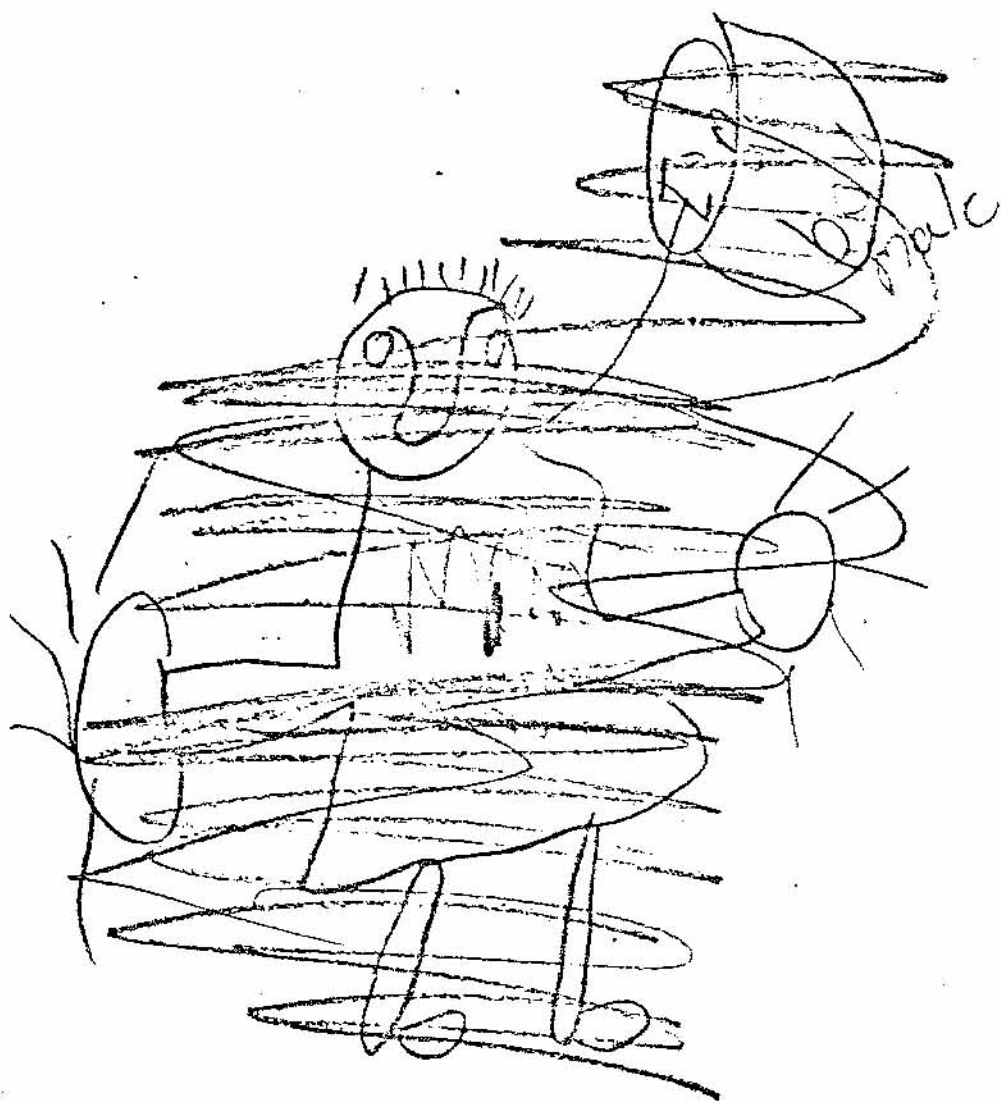


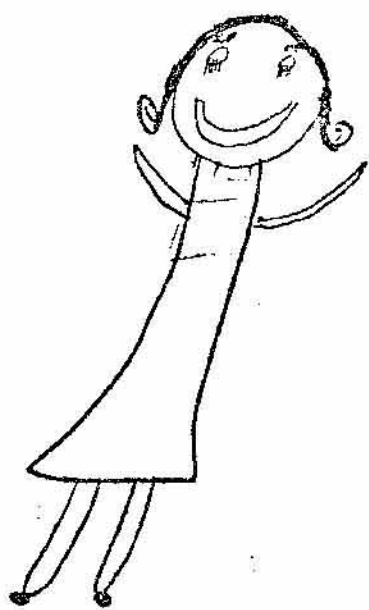


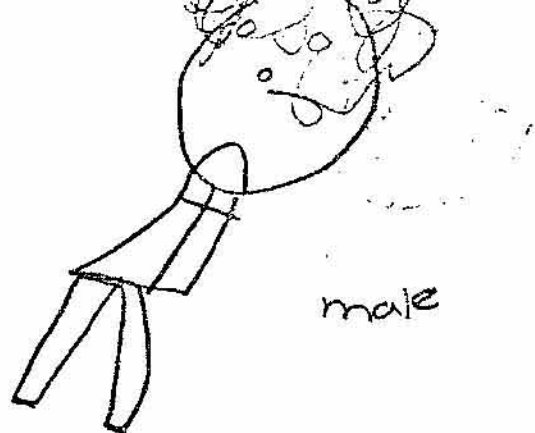
male boy



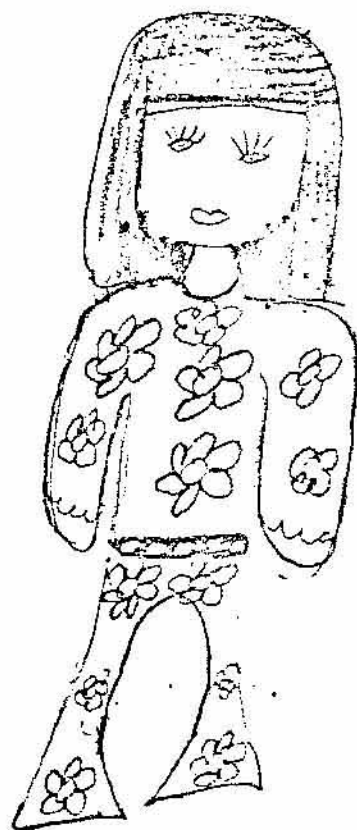


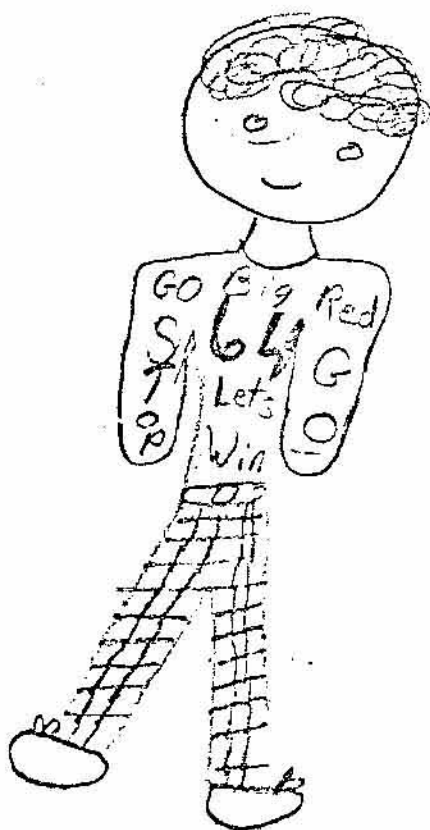






male

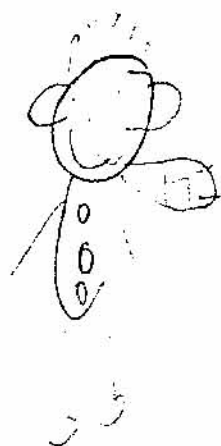


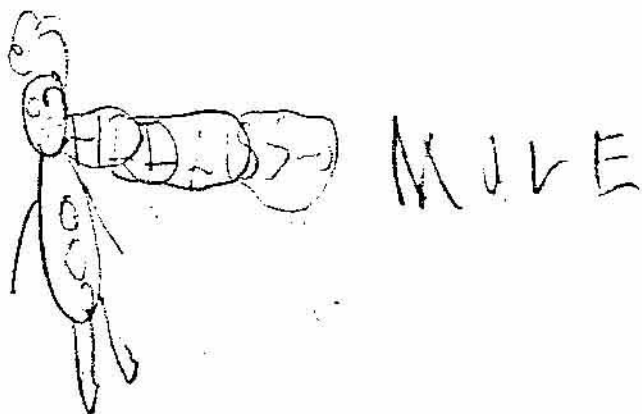


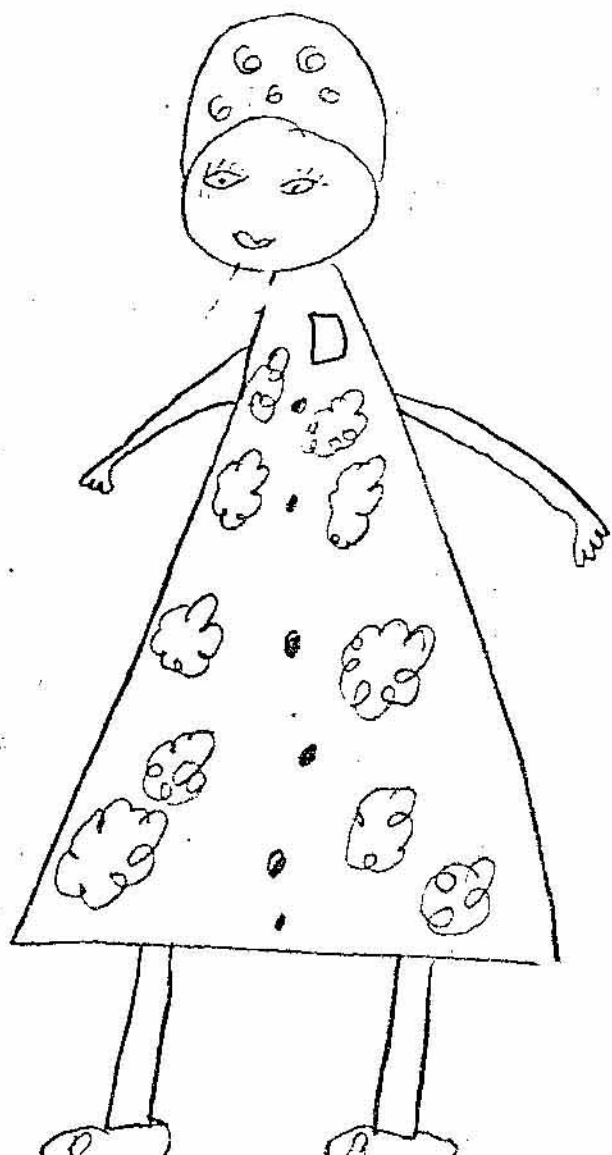
Male

School 1

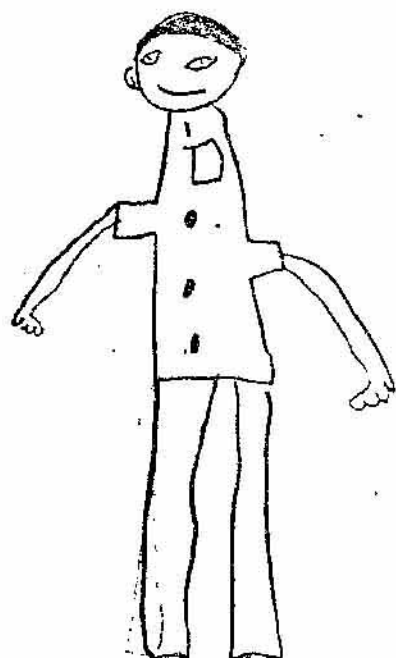
FE₂

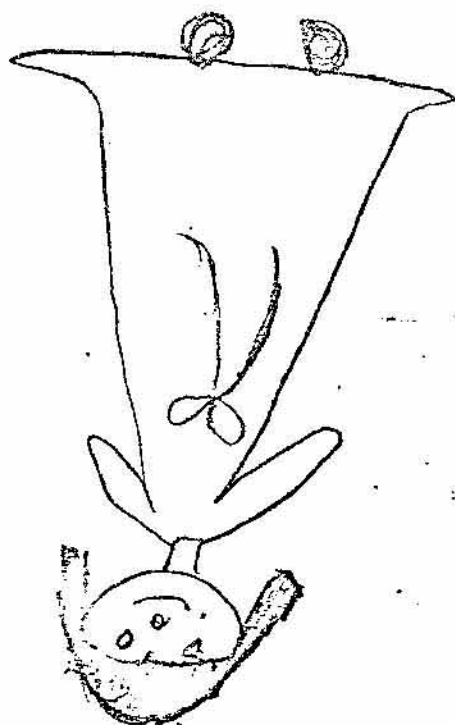


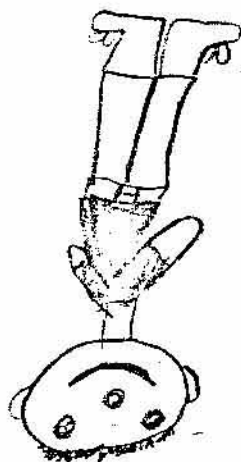




male



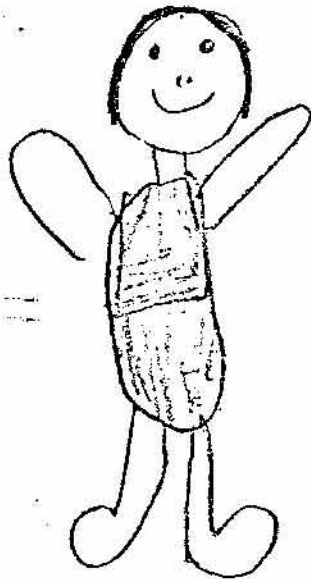




made

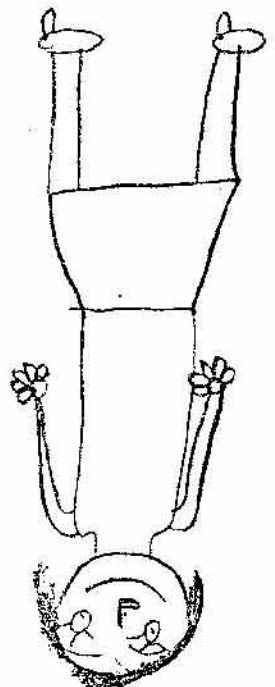
This page has been inverted
for binding purposes.



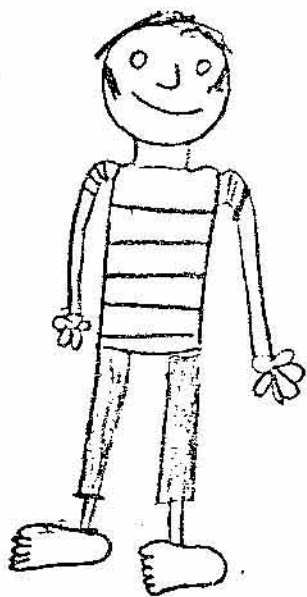


male

This page has been inverted
for binding purposes.

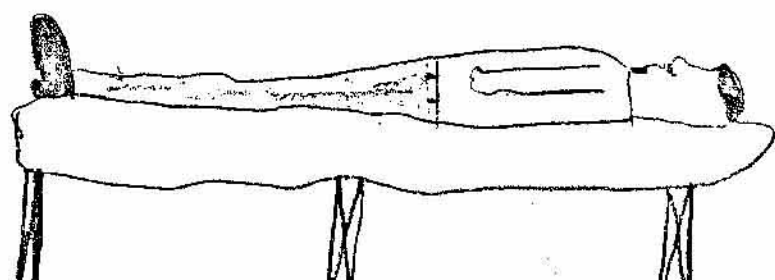


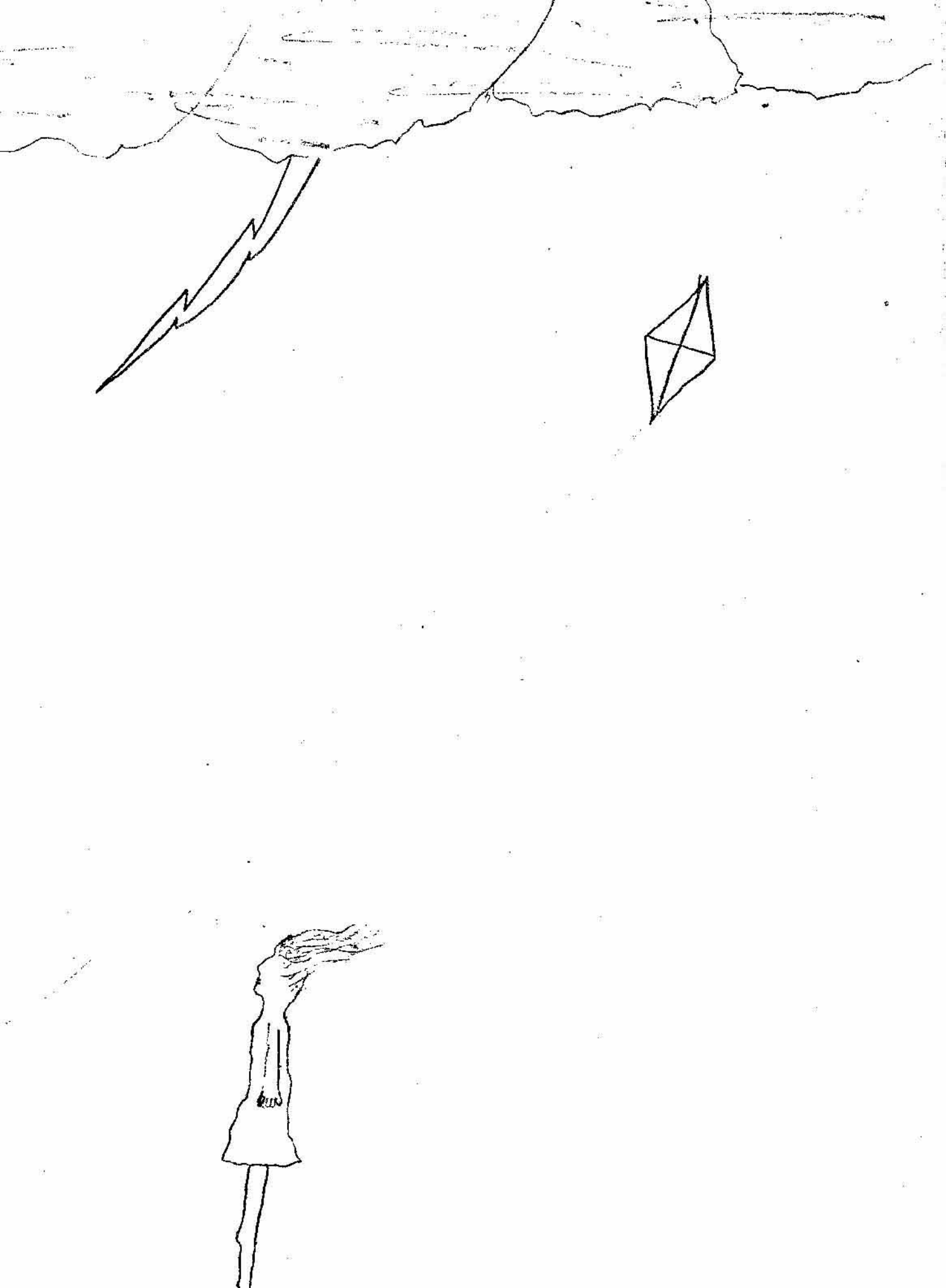
mule

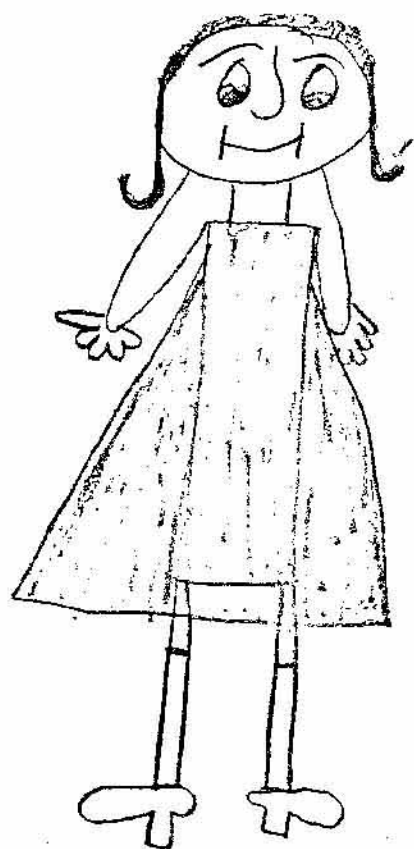


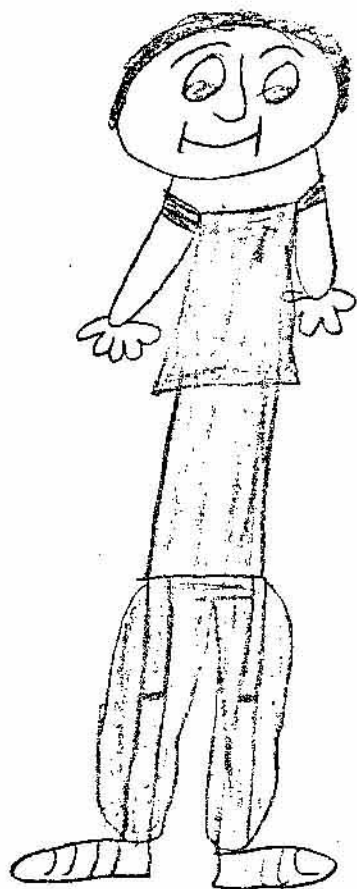
School 1

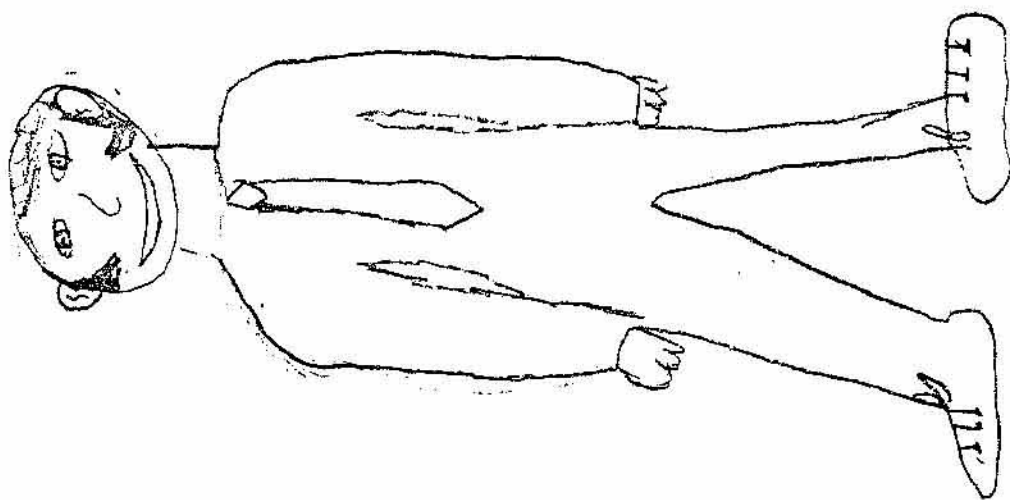
ME₁

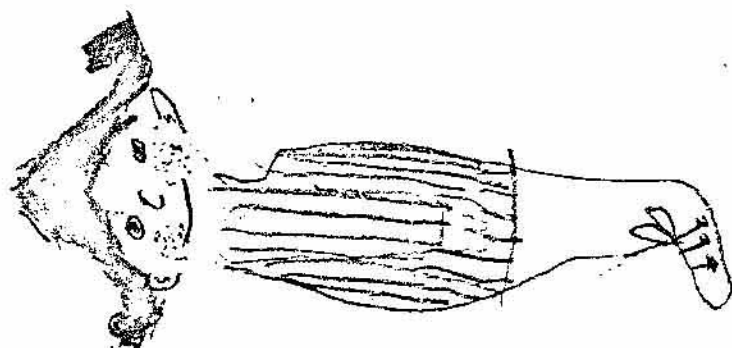


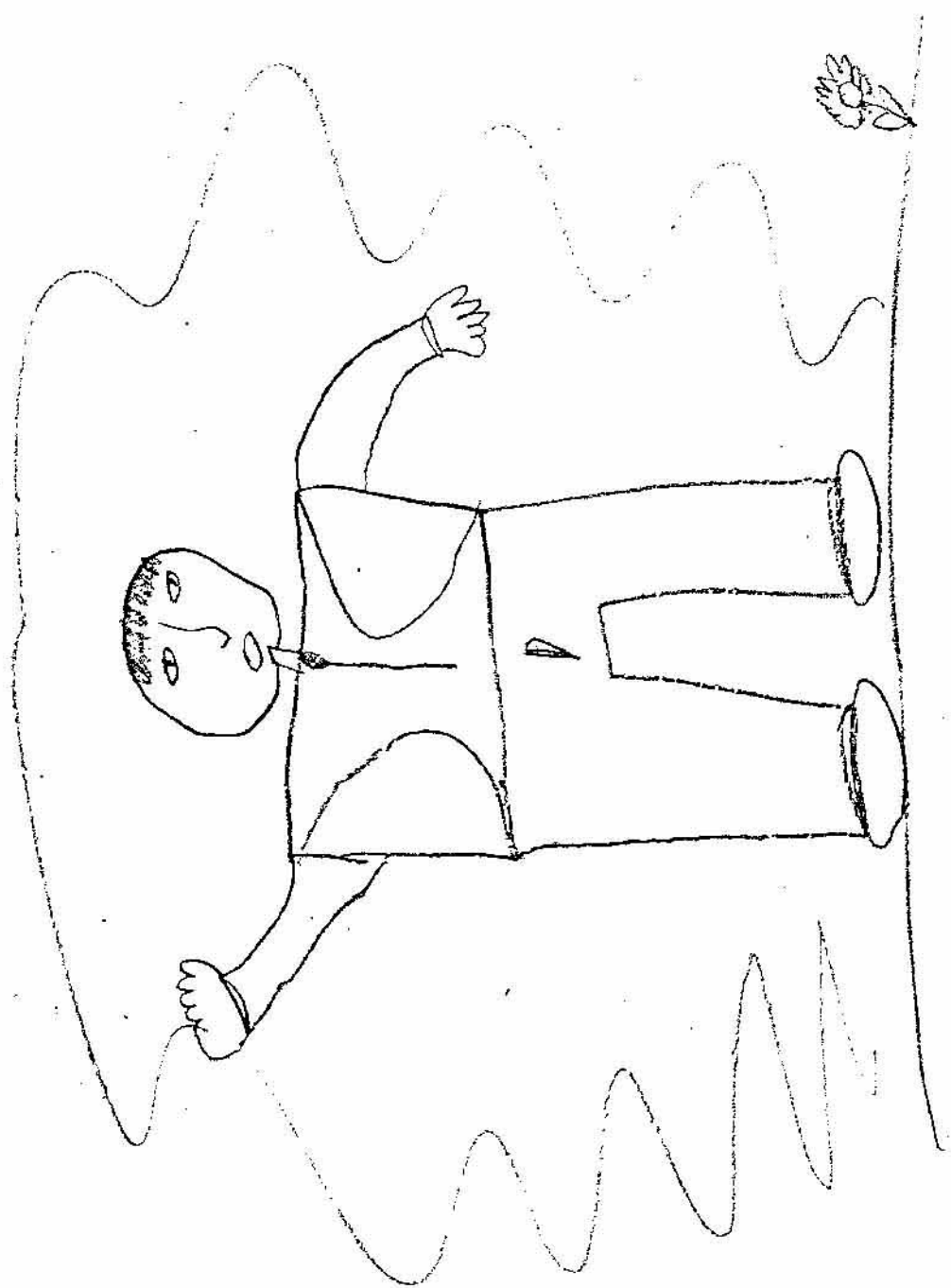




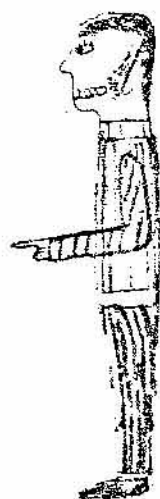


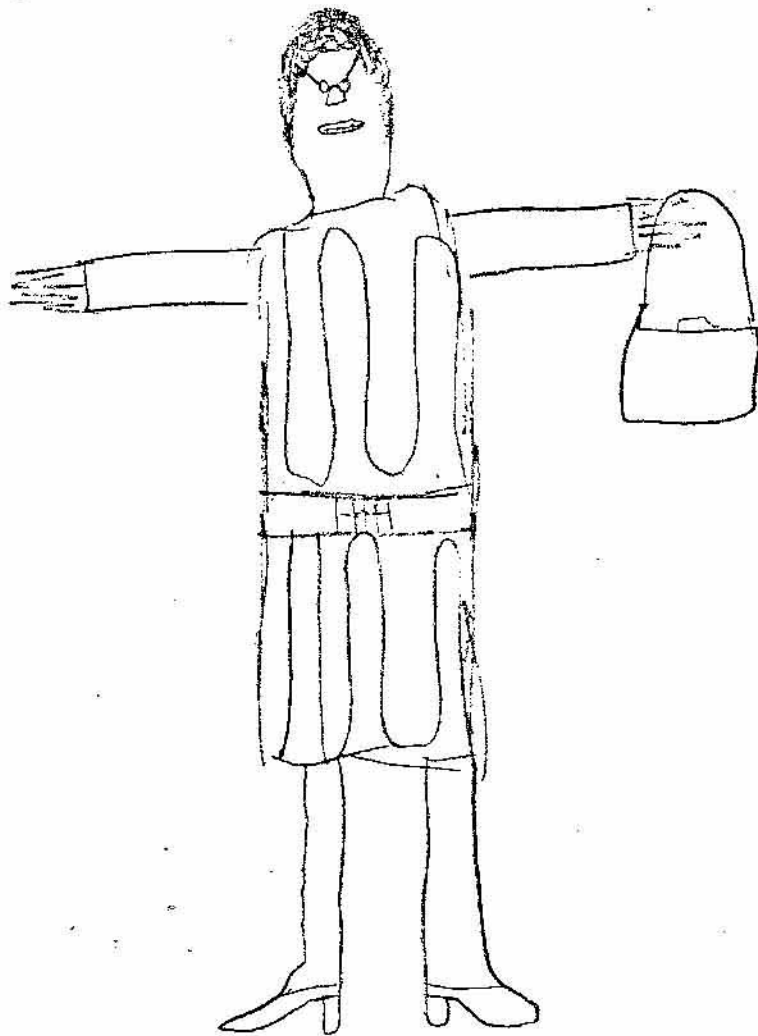








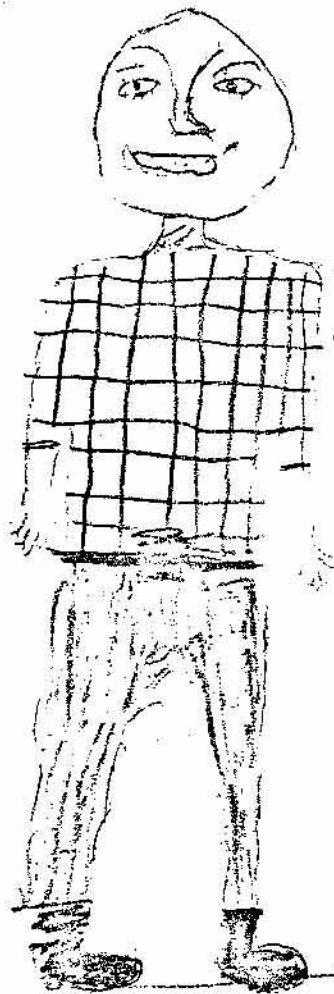




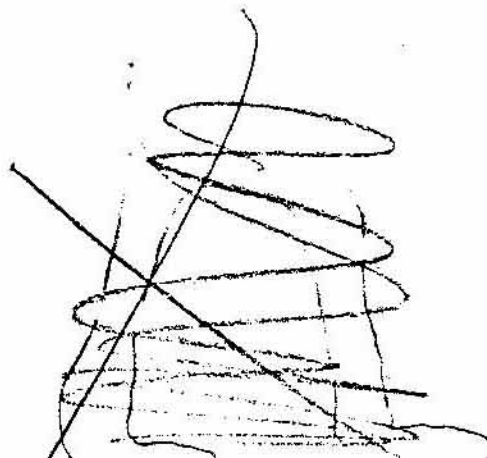
School 1

ME₂

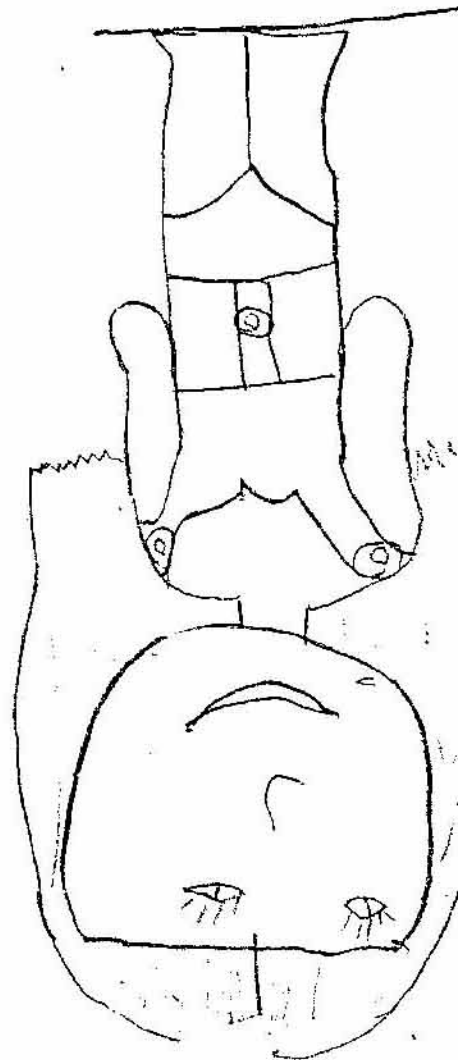
Red Berry

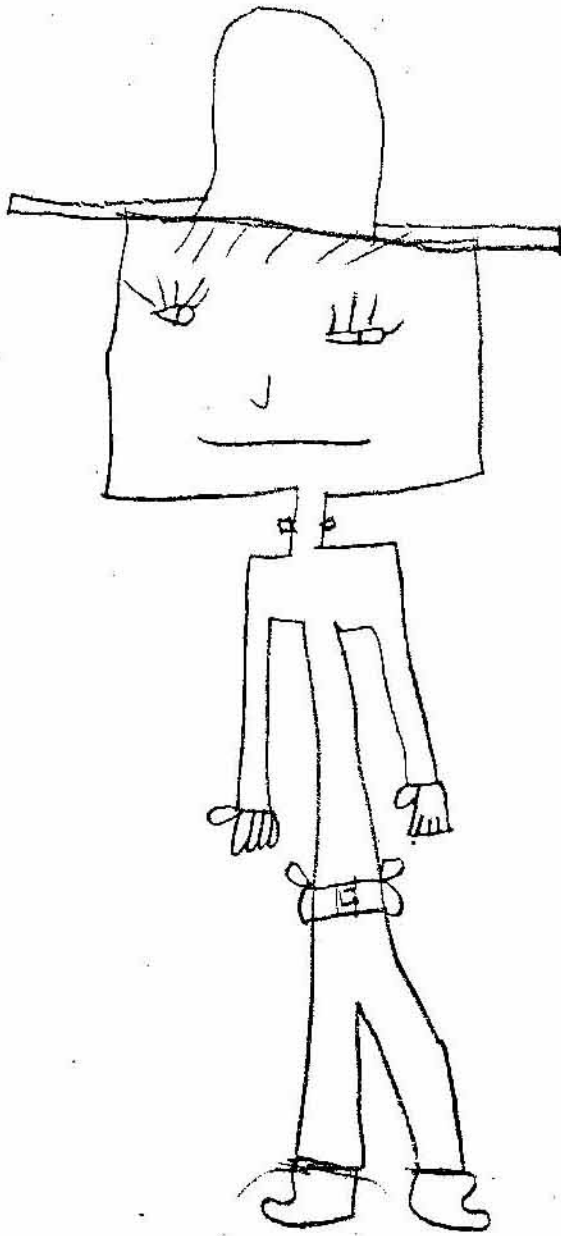


female

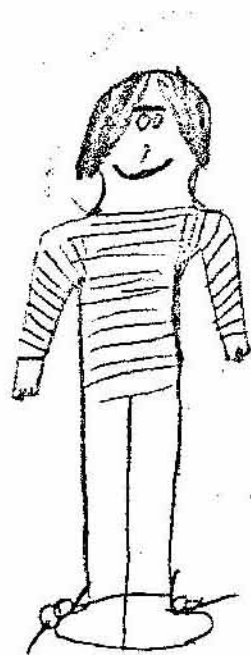


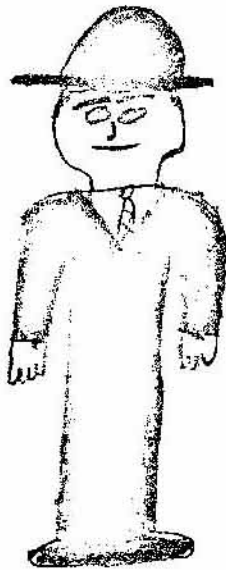
This page has been inverted
for binding purposes.



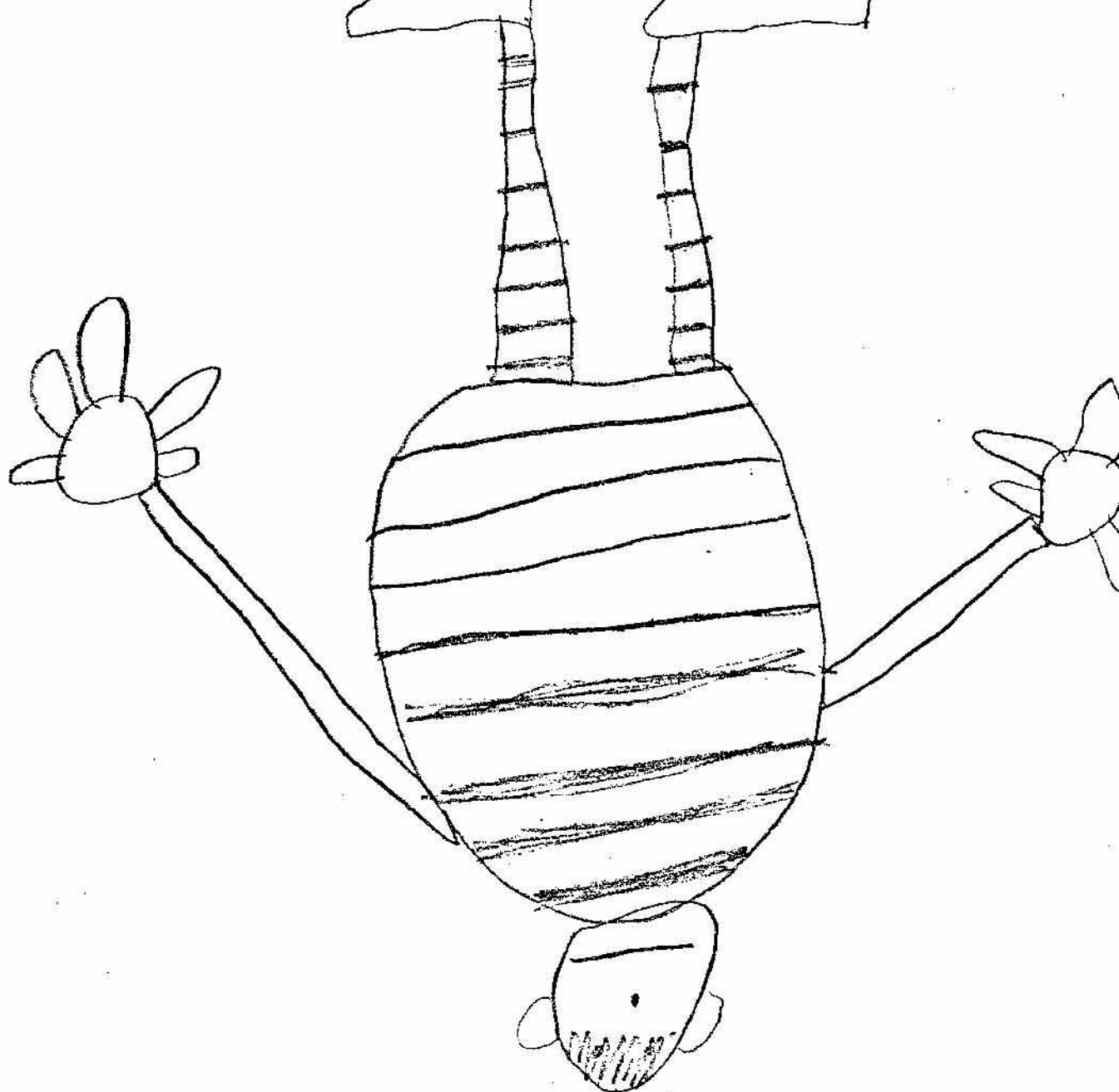


Male





Boy

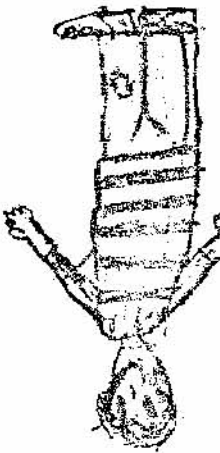


This page has been inverted
for binding purposes.

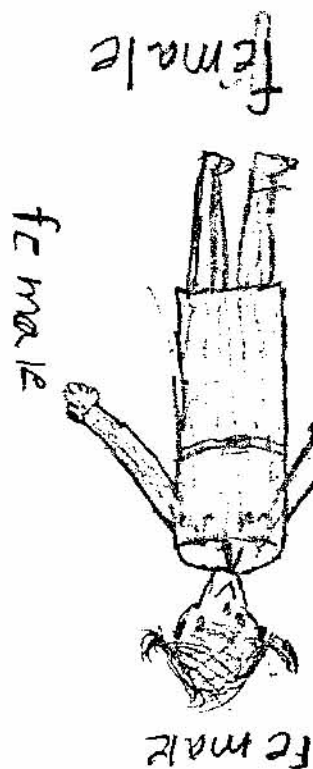
female



This page has been inverted
for binding purposes.

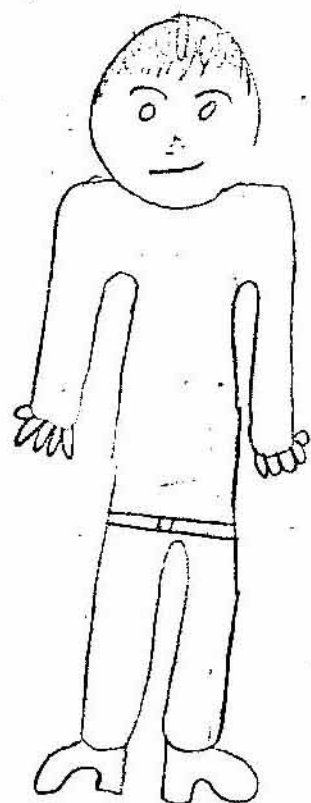


This page has been inverted
for binding purposes.

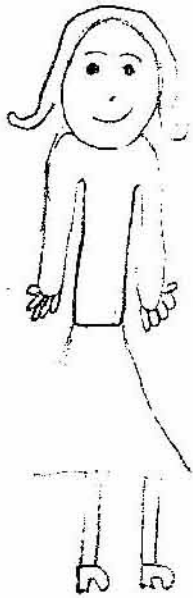


School 2

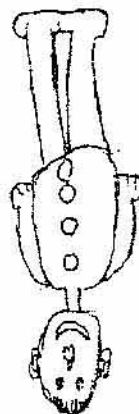
FE₁

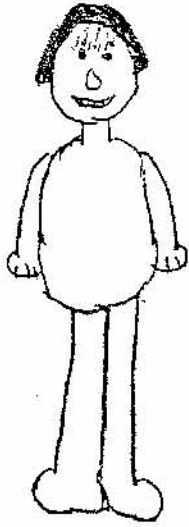


Female



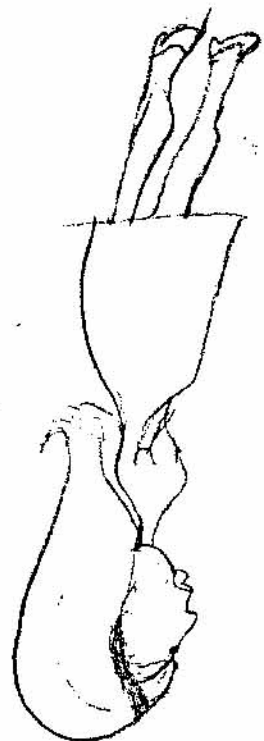
This page has been inverted
for binding purposes.



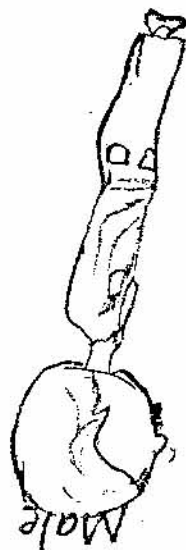


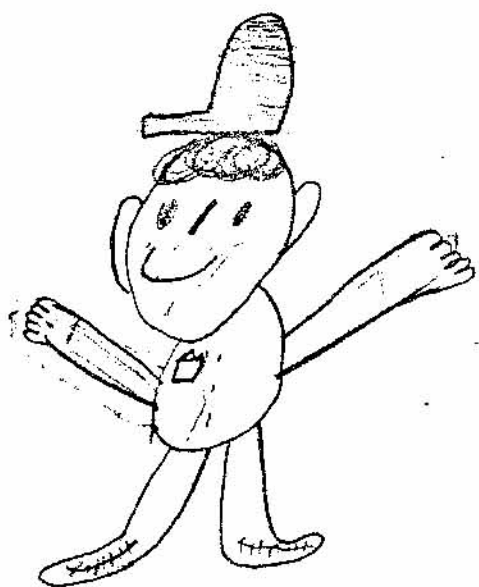
Female

This page has been inverted
for binding purposes.



This page has been inverted
for binding purposes.





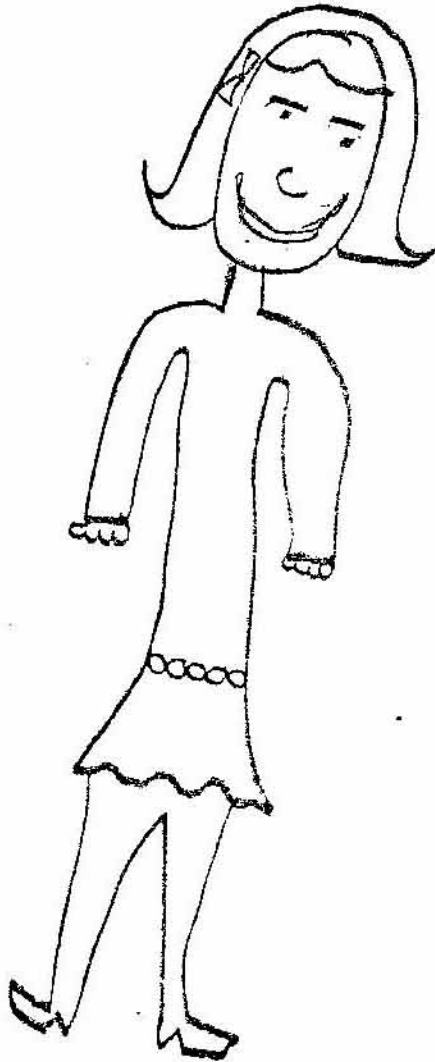
Female



This page has been inverted
for binding purposes.

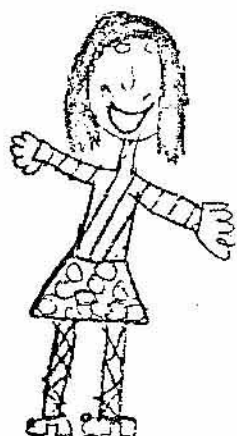


Female

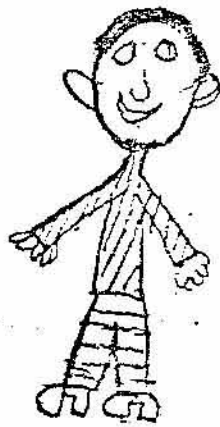


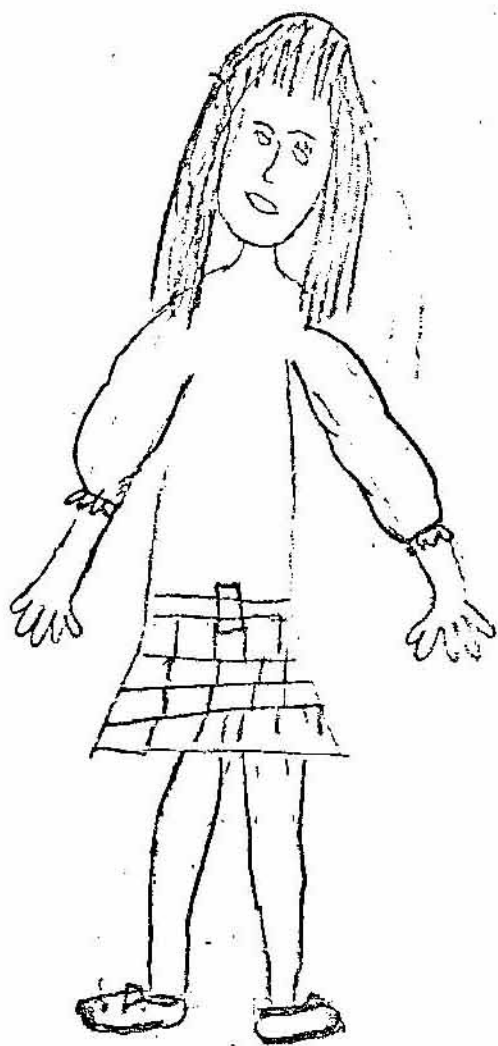
School 2

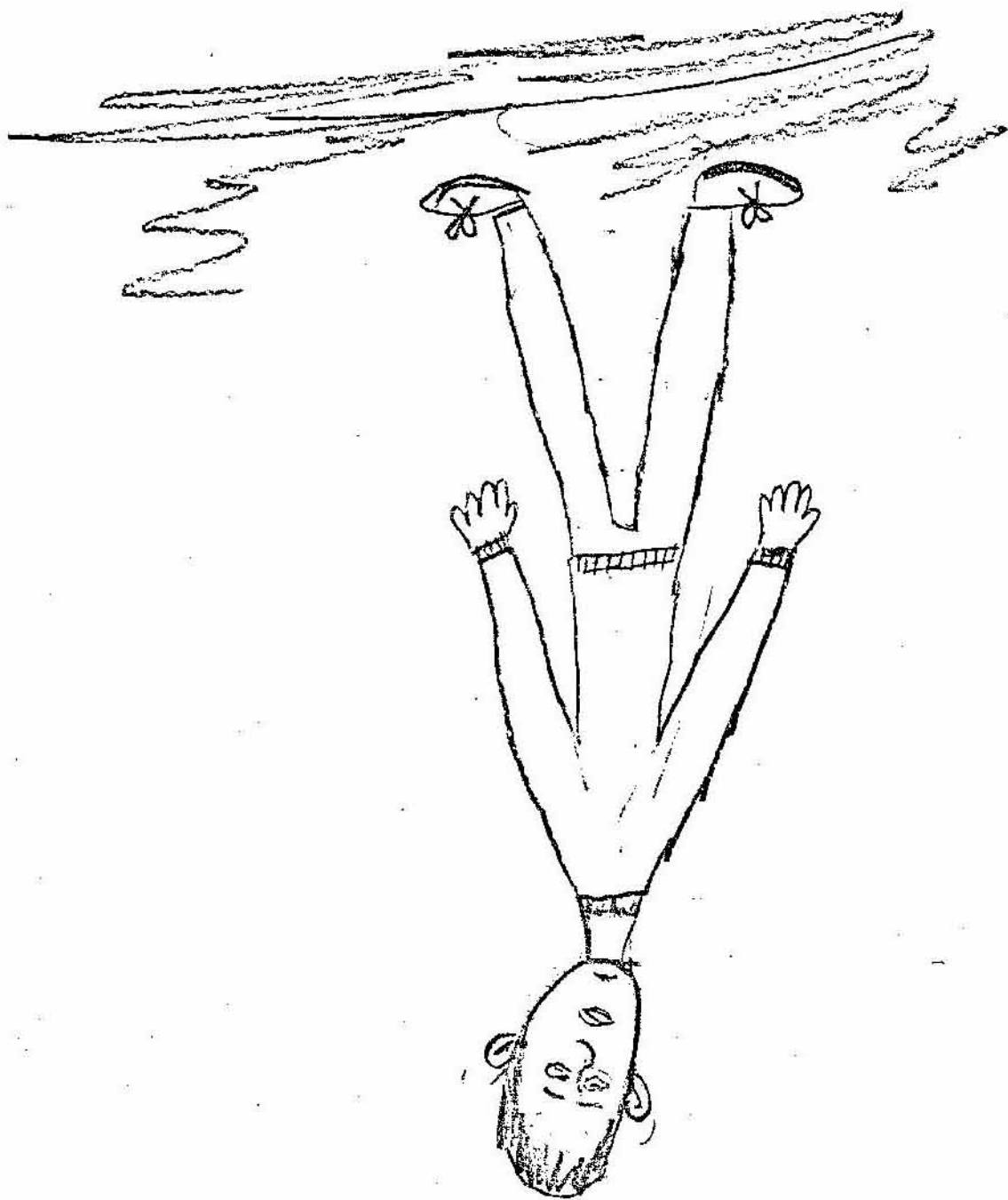
FB₂



male







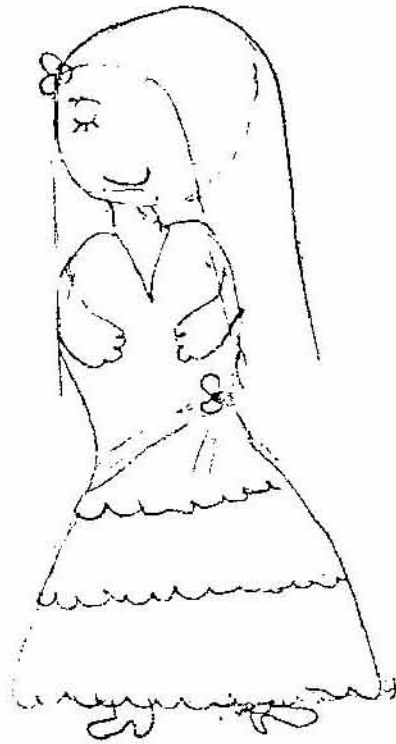
This page has been inverted
for binding purposes.

male



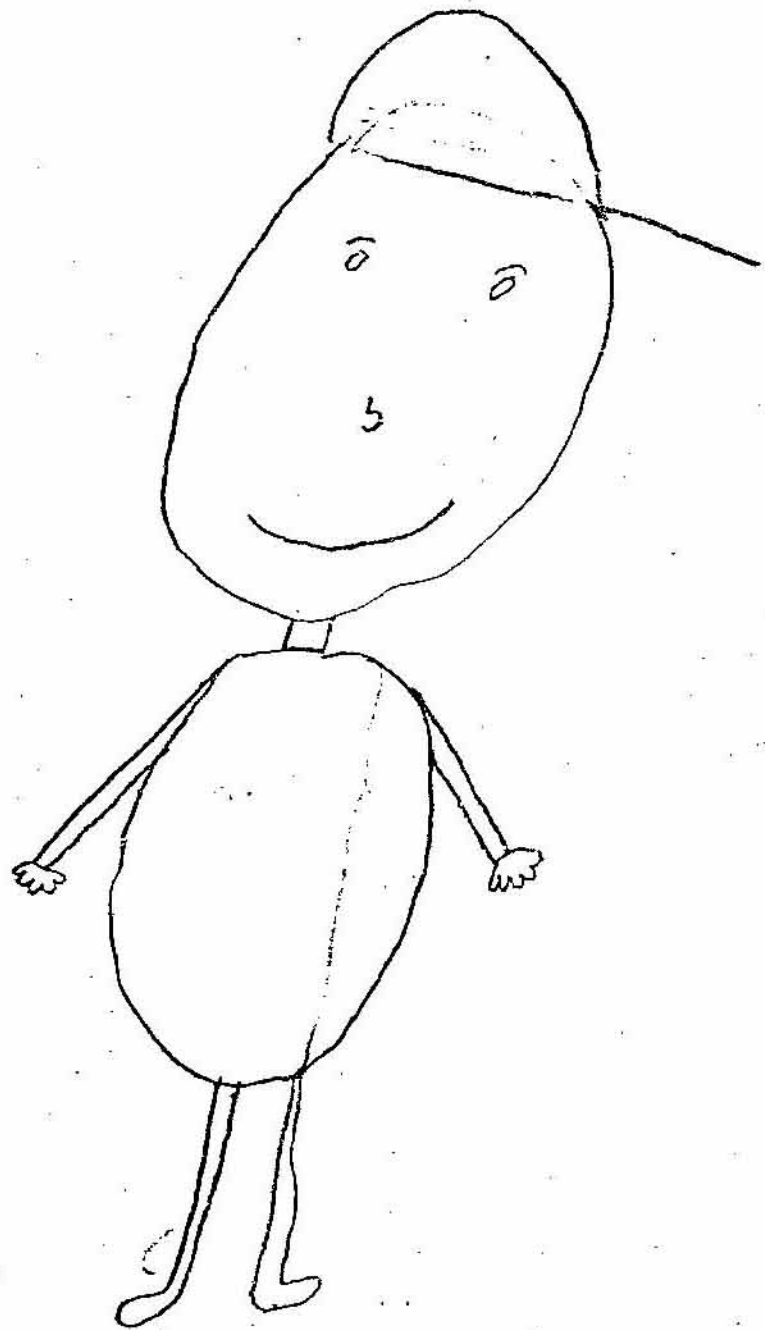
This page is inverted
for binding purposes.







c b



na re



School 2

ME₁

10

20

30

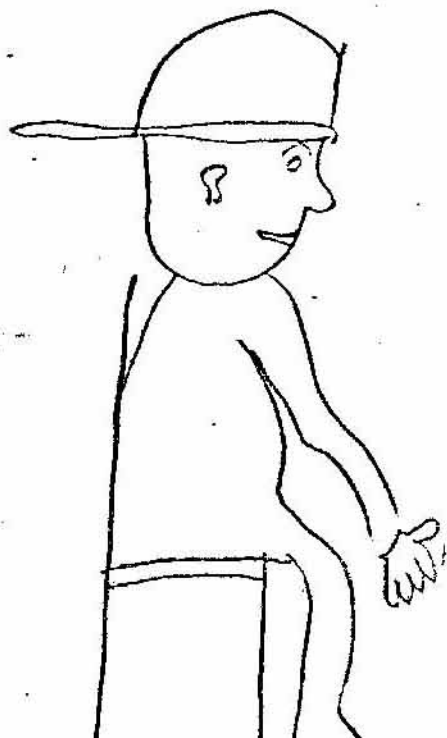
40

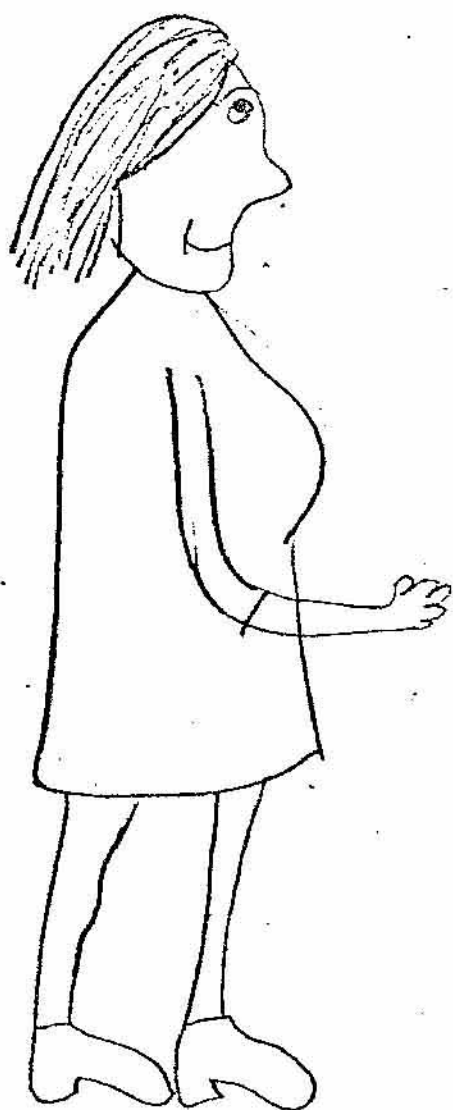
50

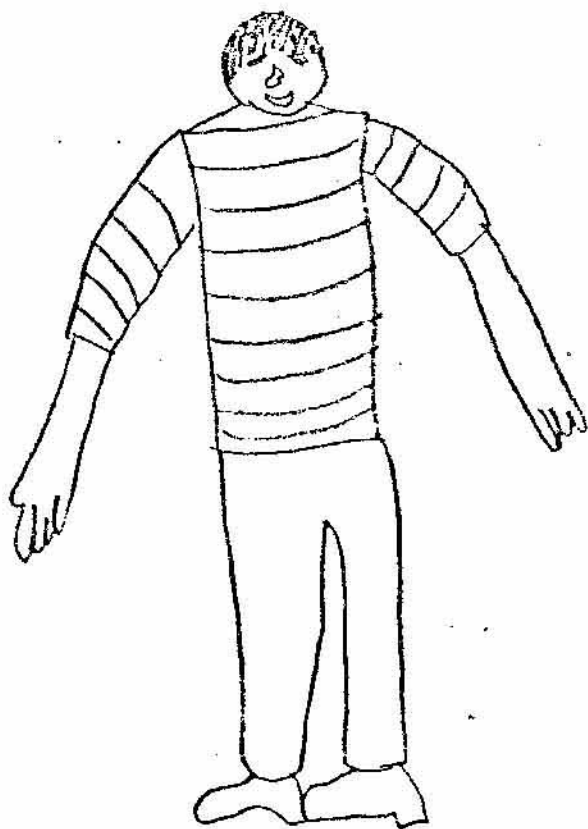
60

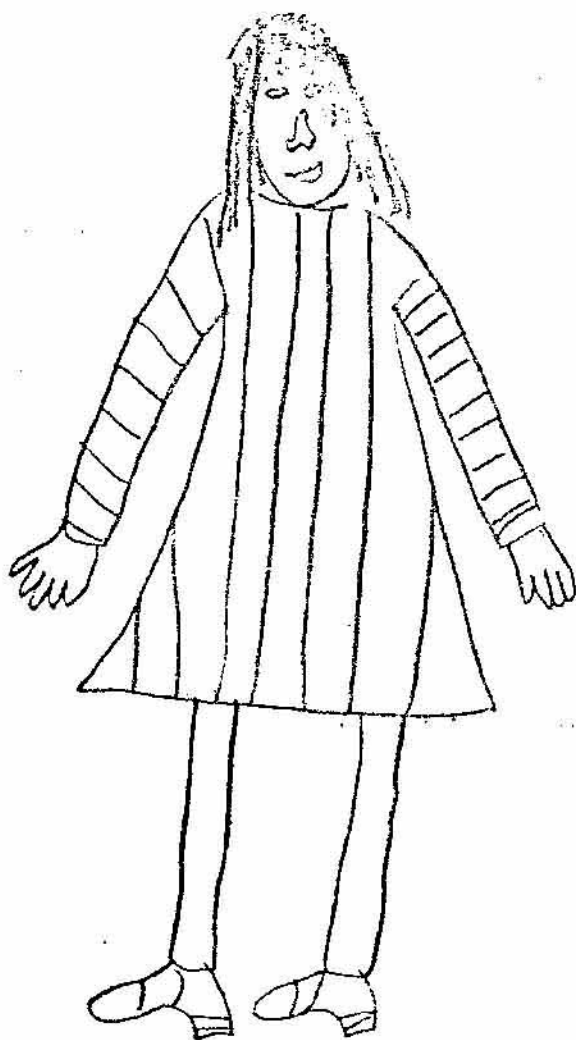
70

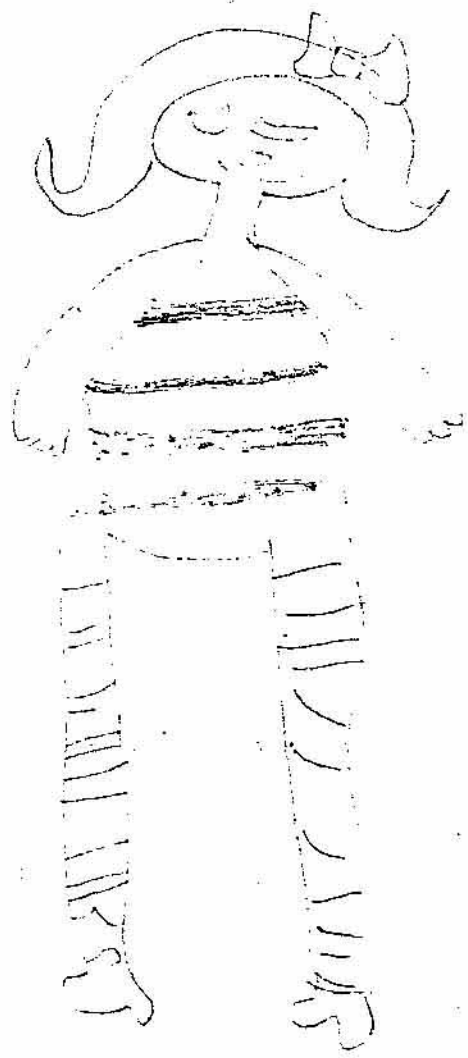
80

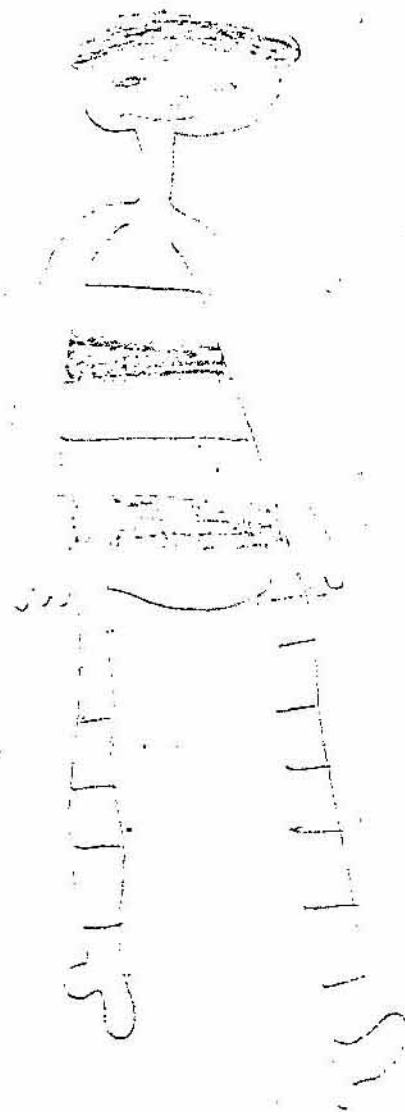


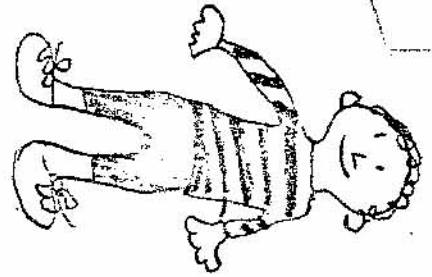




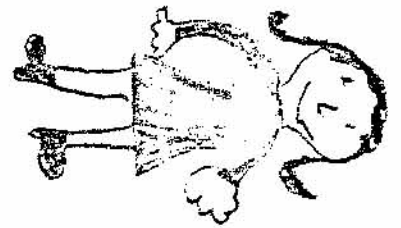




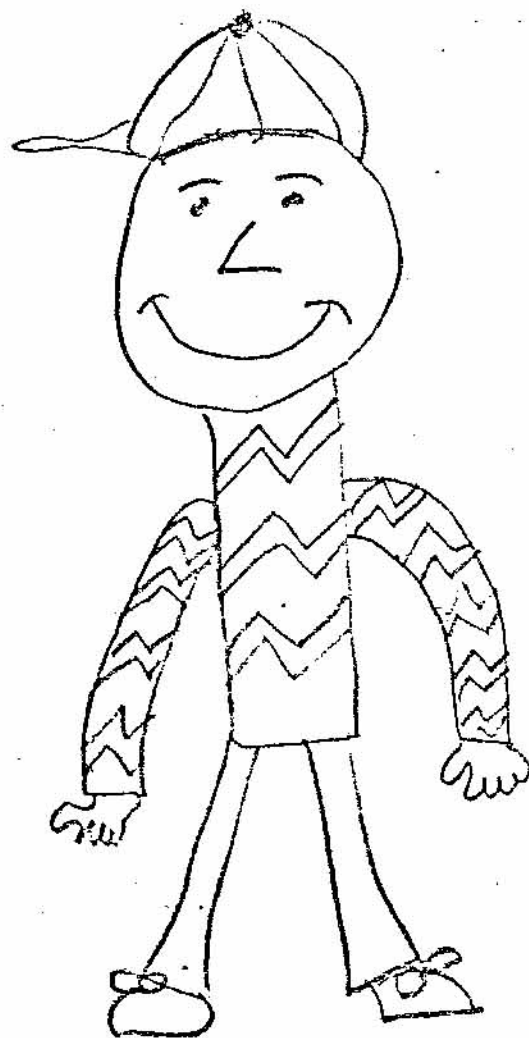


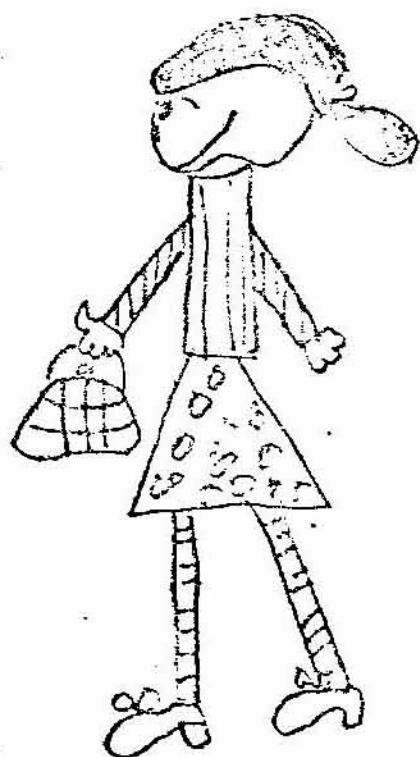


This page has been inverted
for binding purposes.



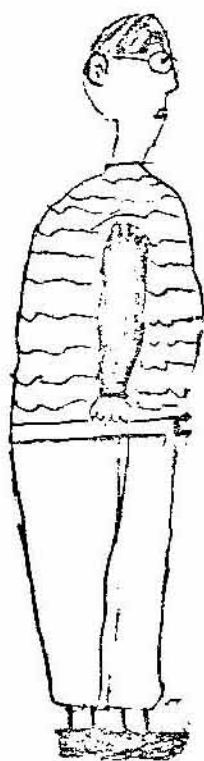
This page has been inverted
for binding purposes.

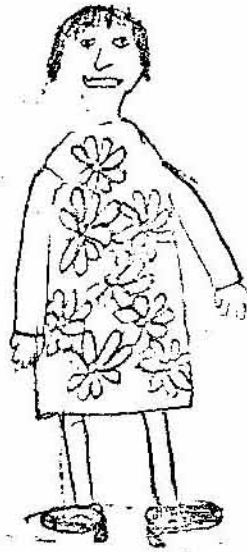




School 2

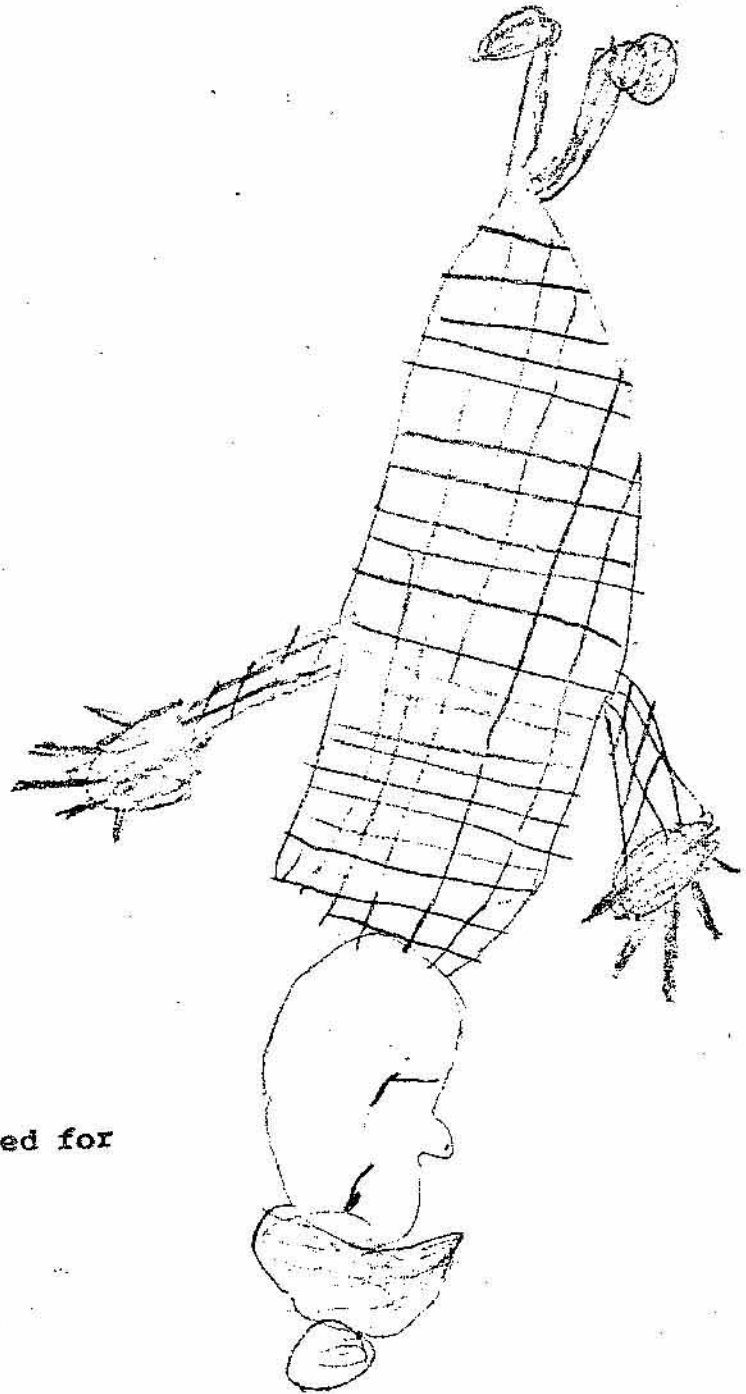
ME₂

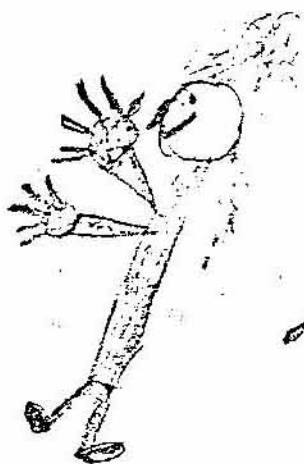




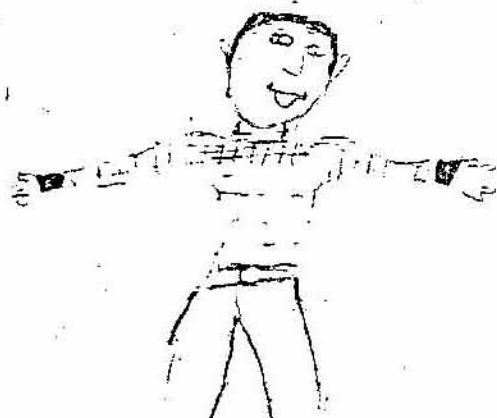
Female

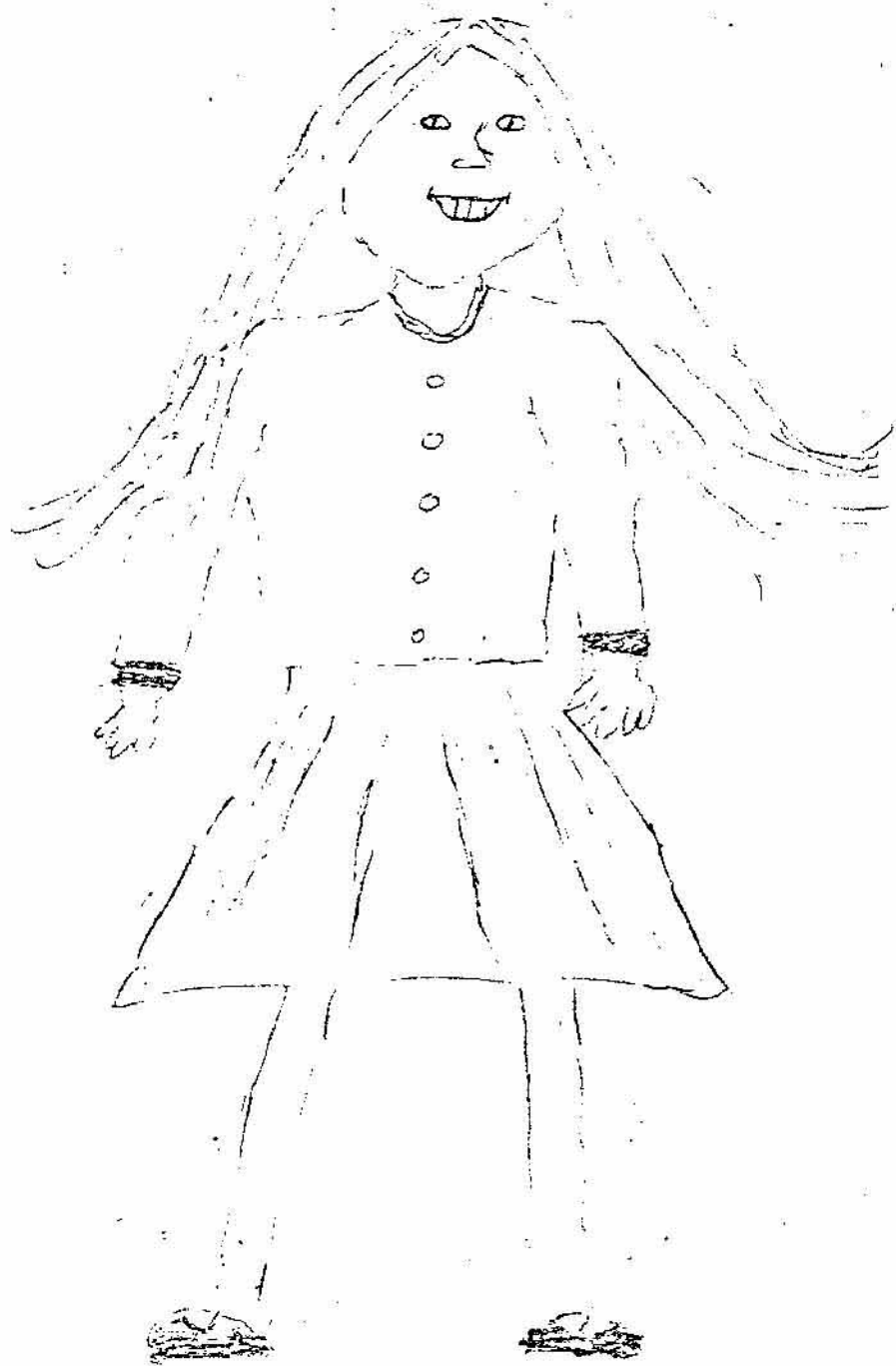
This page has been inverted for
binding purposes.



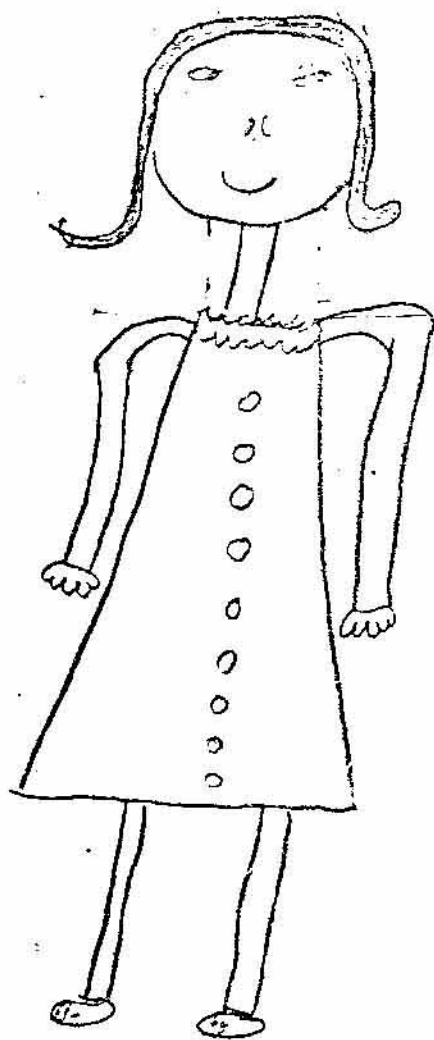


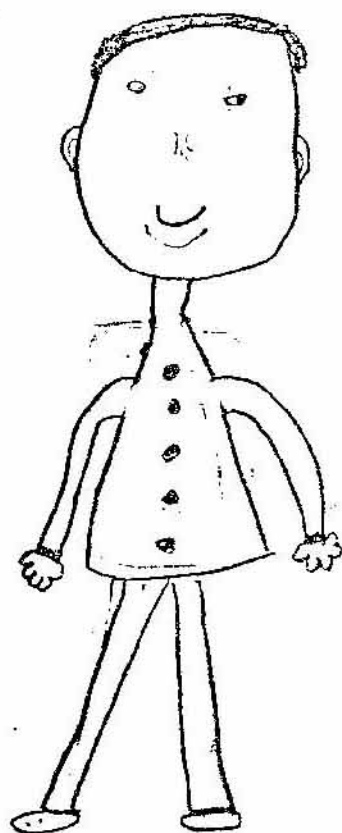
Female

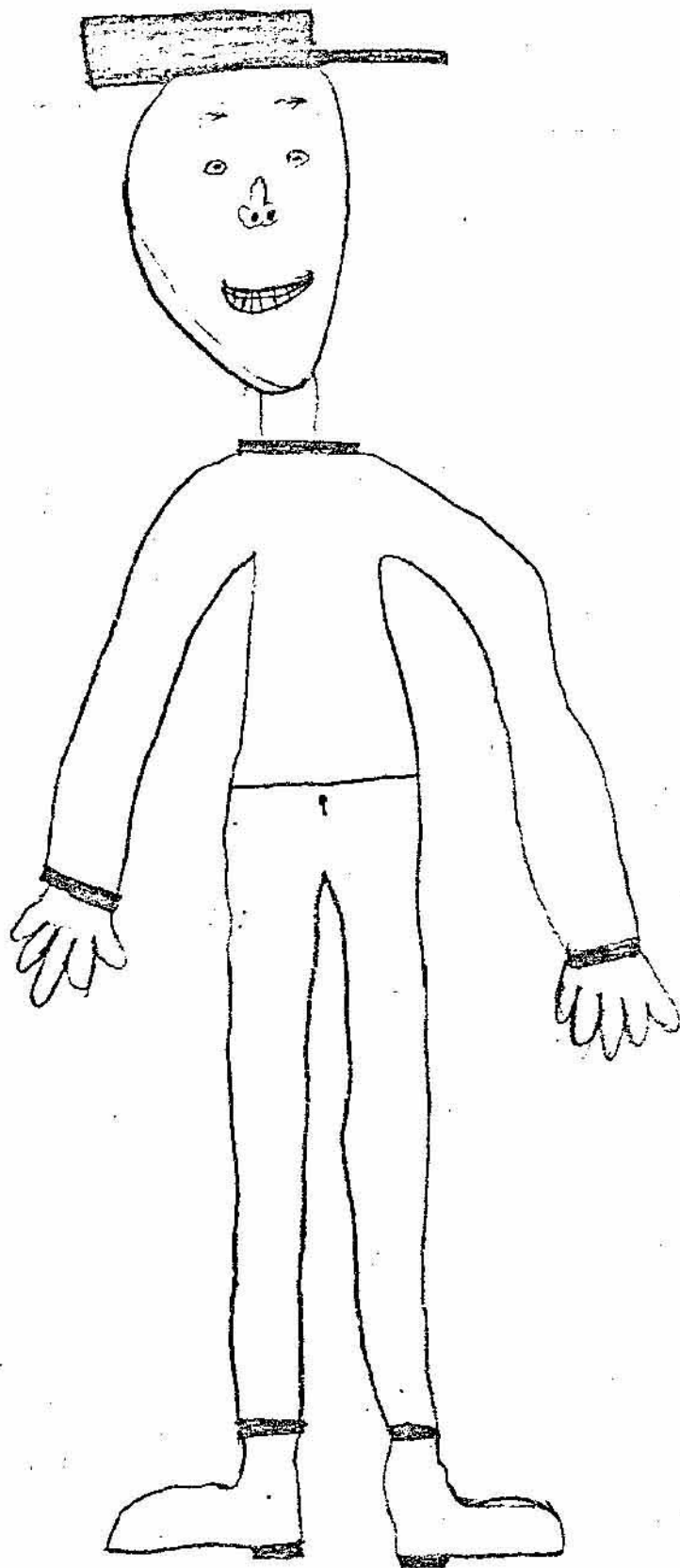


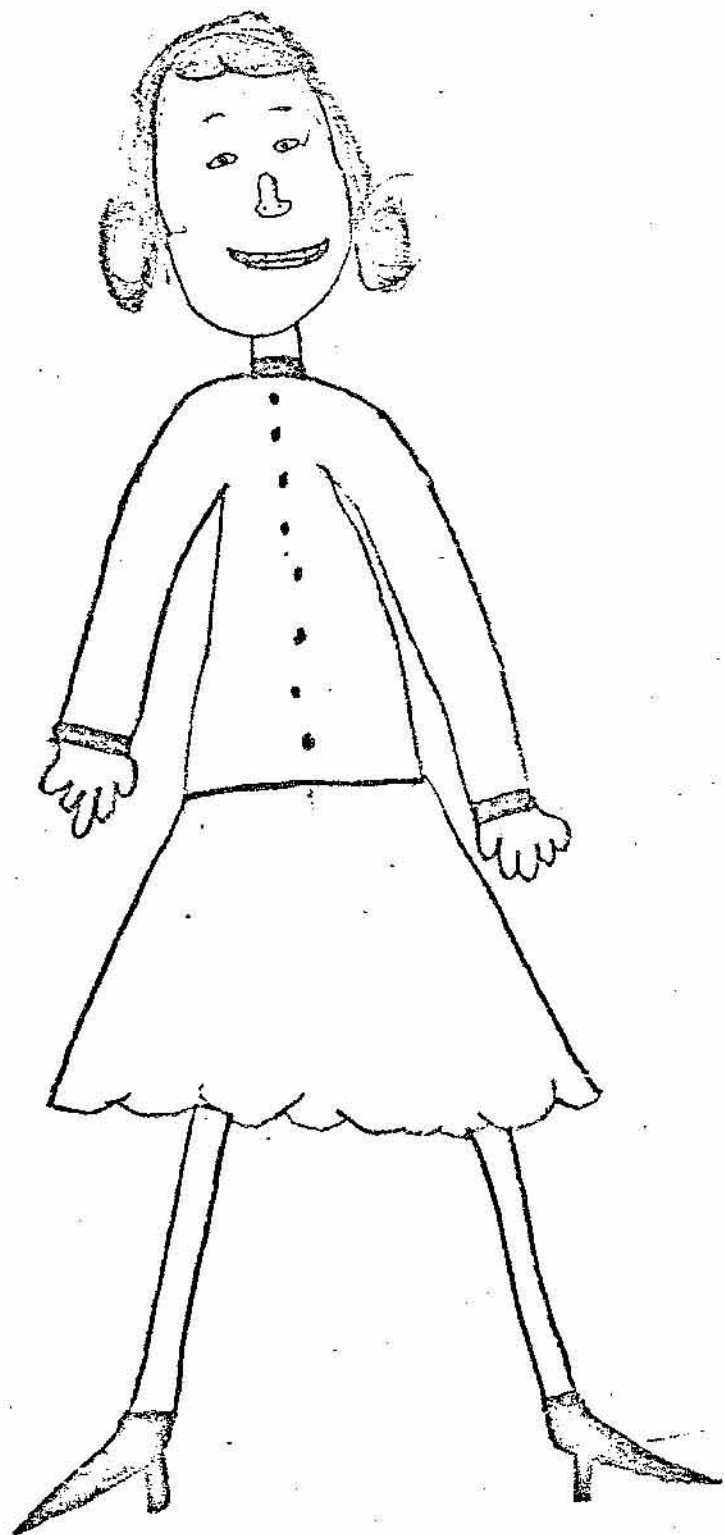


Fernal









REFERENCES

REFERENCES

1. Anastasi, A. Psychological testing. London: The Macmillan Company, 1968.
2. Ayer, F. C. The psychology of drawing. Baltimore: Warwick and York, 1916.
3. Barnes, E. Study of children's drawings. Journal of Genetic Psychology, 1893, 2, 451-463.
4. Blum, R. H. The validity of the Machover DAP technique: A study in clinical agreement. Journal of Clinical Psychology, 1954, 10, 120-125.
5. Cameron, N. Individual and social factors in the development of graphic symbolization. Journal of Psychology, 1930, 5, 165-184.
6. Cook, E. Art teaching and child nature. London Journal of Education, 1885.
7. Datta, L. E. and Drake, A. K. Examiner sex and sexual differentiation in pre-school children's figure drawings. Journal of Projective Techniques and Personality Assessment, 1968, 32 (4), 397-399.
8. Goodenough, F. L. Measurement of intelligence by drawings. New York: Harcourt, Brace and World, 1954.
9. Goodenough, F. L. Studies in the psychology of children's drawings. Psychological Bulletin, 1928, 25, 272-283.
10. Holtzman, W. H. The examiner as a variable in the Draw a Person test. Journal of Consulting Psychology, 1952, 16 (1), 145-148.
11. Kerschensteiner, D. G. Die entwicklung der zeichnerischen begabung. Munich: Gerher, 1905.
12. Luquet, G. H. Less Dessins d'un Enfant. Paris, 1913.

13. Machover, K. Personality projection in the drawing of the human figure. Springfield, Ill.: Charles C. Thomas, 1949.
14. Moustakas, C. E. Creativity and conformity. Princeton, N. J.: D. Van Nostrand, 1967.
15. Noller, P. A. and Weider, A. A normative study of human figure drawing for children. The American Psychologist, 1950, 5, 319-320.
16. Piaget, S. Judgments and reasoning in the child. Translated by M. Warden. New York; Harcourt, Brace, 1932.
17. Ricci, C. Arte dei Bambini, Bologna, 1887.
18. Robach, H. B. Human figure drawings: Their utility in the clinical psychologist's armamentarium for personality assessment. Psychological Bulletin, 1968, 70 (1), 1-19.
19. Sinnett, E. R. and Eglash, A. The examiner-subject relationship as a variable in the Draw A Person test. Paper read at the Midwest Psychological Association, Detroit, May, 1950.
20. Swensen, C. H., Jr. Empirical evaluations of human figure drawings. Psychological Bulletin, 1957, 54 (6), 431-466.
21. Swensen, C. H. and Newton, K. R. The development of sexual differentiation on the Draw A Person test. Journal of Clinical Psychology, 1955, 11, 417-419.
22. Tomas, V. Creativity in the arts. Englewood Cliffs, N. J.: Prentice Hall, 1964.
23. Weider, A. and Noller, P. A. Objective studies of children's drawings of human figures. II. Sex, age, intelligence. Journal of Clinical Psychology, 1953, 9, 20-23.
24. Wilkinson, A. E. and Schmadt, F. Human figure drawing characteristics. Journal of Clinical Psychology, 1968, 24 (2), 224-226.

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

