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ABSTRACT

This a report of several studies of children's artistic behavior carried out at Cornell University with 3- to 5-year-old nursery school children. The studies involved: (1) taping comments children made while painting at nursery school; (2) determining if there was a difference in difficulty between two- and three-dimensional representations; (3) seeing whether giving a child an opportunity to handle an object before drawing it affected the finished drawing; (4) training children in copying a square to see if improvement could be brought about; (5) studying the relationship between matching, recognition, tracing and copying of geometric forms; (6) determining whether meaningfulness of a form affected children's ability to copy it; (7) comparing children's drawing and writing ability; (8) comparing children's drawing of geometric forms on various shaped backgrounds; (9) determining the effect of selected experiences upon children's drawing; and (10) making videotapes of children using art materials. Implications include the importance of the teacher as a catalyst in the drawing process, especially if the teacher is a non-interfering one; the greater importance of process rather than product to the child; the clear developmental differences between 3-year-olds and 4-year-olds. It is suggested that little can be done to speed up or change a child's ability or developmental level in artistic expression. Improved drawing ability seems to result from something other than improved motor coordination or perceptual skill. (MS)

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Analysis of Artistic Behavior in Young Children¹

Final Report, Project C-BD

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Introduction

To a great extent, this project has been exploratory in nature. Since there have been few concrete studies available in the realm of children's art, particularly relating to the early marks and scribbles that children make, a good deal of time has been spent in exploring possibilities for research rather than on hypothesis testing. Possibly it would be better to view this report as a preliminary view of the potentialities of art expression for preschool children rather than as a completed project.

This report is divided into three main sections. The first section deals primarily with the first two years of work. In part, some of this information has been reported elsewhere, so that the first section is essentially a summary of some of the earlier explorations. The next section deals with the few hypotheses that have been tested this past year. This represents an attempt at building theory rather than the usual carefully controlled experiment. The last section tries to draw some implications from the work completed to date.

Although the staff on this project consisted primarily of the principal investigator and one research assistant, there are many who have

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contributed voluntarily or on a part-time basis to our findings. This includes not only staff members at Cornell and graduate students who have been attracted to this area but also the nursery school teachers and particularly, of course, the children themselves.

I. Early Investigations

Much of the initial investigations into the area of preschool art have been reported in detail elsewhere (Brittain, 1969; Brittain, 1970). Included here is only a brief summary of some of the directions taken in the early stages of work. A good deal of time was spent observing nursery school children while they were drawing and painting. It became obvious why more work had not been done in this area, since the scribbles are not easy for adults to understand, and the investigators found it somewhat difficult to go beyond the mere enjoyment of the art itself.

A. Observational studies

After spending some time trying to tape comments that children make while painting at the nursery school easel, it was discovered that an adult was an important part of the recording process. A dozen of the 16 four-year-old children seemed to enjoy having an adult near by and were often very free with their comments about what they were painting and drawing. By comparing these taped comments of both the child and the adult with the finished product, some inferences were drawn.

Scribbles do have meaning to the child who is making the drawings. Often a drawing of an object is not a visual representation of the object, but a haptic response to the object. That is, a dog is not shown as a photographic representation, but may be shown as a series of up and down scribbles representing the movement of the dog rather than the dog's appearance. A better way to explain this might be to say that the drawing instrument becomes the dog which bounds across the page.

The drawings tended to change as they were worked on, and the drawn image was incorporated into a changing representation. Often the finished picture looked little like it did at the beginning, and the amount of drawing had little relationship to when the child said it was complete. All comments that the children made about the drawings were in the present tense and it appeared that there was no preplanning. The completed

drawing was apparently a record of the thinking process rather than a concrete representation of a particular thought or image.

Generally children did not recognize their own paintings the day after they were completed. Even those that were recognized were not identified by what was portrayed as much as by a recall of the process. Mixing paints and placing paint on the paper was more important than the visual image, or possibly the visual image was not retained from one day to the next.

A good deal of painting was manipulative in nature; the color and tactile quality of paint seemed to be enjoyable experiences. In fact, much scribbling is simply the result of manipulation rather than attempts at representation. No child attempted to draw a specified, preconceived picture. However, all children tended to draw longer with an adult present, not so much to give encouragement or praise but rather to serve as a sounding board.

B. Two and three dimensional representation

Representational drawing requires abstracting from a three dimensional object its essential characteristics and placing these on a two dimensional surface. It would seem much simpler to represent a three dimensional object with a three dimensional material, such as clay; therefore it might be easier for young children to portray parts of their environment in clay rather than by drawing on a flat surface.

One of the local nursery schools provided the population for an exploratory study of this assumption. Half the children were asked to draw a man and a few days later were asked to make a man out of clay. The other half of the children were asked to make the clay representation first. The drawings and clay forms were analyzed, first using the Goodenough-Harris Draw-a-Man-Scale, next they were judged for quality, on a five point scale, and then the products were examined on the basis of individual differences in expression.

No piece of clay work was judged higher than any drawing for any child. There was no indication that working with clay was a better measure of a child's representational abilities than was his drawing.

In fact, some children tried to represent a man by rolling balls of clay into a snake form and using this as a drawing material, and essentially made a two dimensional representation. The three dimensional material did not provide for greater ease or higher quality representation.

C. Drawing objects

Several three dimensional geometric forms, some with open ends or holes in one or more sides, of varying sizes from nine to 12 inches tall, were given to about 12 four-year-olds at the Cornell Nursery School to draw. Each child was given the opportunity to examine and manipulate these objects and then he was asked to draw these forms with a felt pen on white paper.

The drawings ranged from big scribbles to a few drawings that could be interpreted as attempted representations of the object. However, of most interest were the drawings that fell between these two extremes. Some children drew only those parts of the forms with which they had contact and sometimes the hole in an object would be shown with a vague form surrounding it. For example, a cylinder was portrayed as circular shapes with nondescript lines around them. Apparently children were drawing a representation of an experience with an object rather than a visual representation of the object itself.

D. Drawing squares

Seventy five children, from three to five years of age, were asked to copy a square. These drawings ranged from scribbles to a good square representation. As would be expected, most three-year-olds could not make a square representation, whereas most five-year-olds could. This corresponds closely to studies of geometric form copying as reported in the literature. Between these extremes, those forms which were almost squares were made primarily by four-year-olds. It was decided to see if it was possible to help these children make better squares.

Children from the Cornell Nursery School, ranging in age from 42 months to 49 months, were used for this experiment. The children were pretested by asking them to copy a square using a felt pen and white

paper. It was thought that an adult's interest in squares might be a key factor, so sessions were planned to provide extensive training to a decreasing number of children. The whole group was given cardboard squares to feel and trace around. The next session, which consisted of two fewer children, were then shown how to draw four separate lines and were assisted in completing a square. Fewer and fewer children were given more and more help until the last few children had been thoroughly saturated with a variety of exercises such as finding squares in the environment, constructing squares out of paper strips, cutting out predrawn squares, and so on.

Approximately one month later a posttest was given. Again the instructions were for the child to copy a square. The pretest and posttest samples were mixed together and arranged on a continuum. Although the posttest copies came out a little better than the pretest, there seemed to be no consistency, and some children drew a poorer square on the posttest samples. The results showed that the variety and degree of training seemed to have no effect on the ability of these children to copy squares.

II. Recent Investigations

The past year has been spent completing earlier studies, and testing hypotheses that evolved from earlier investigations. In addition, an attempt was made to follow with video tape the process that children use in developing their art product. Each of these areas will be discussed in some detail.

A. Square copying ability

From the preliminary investigation mentioned above, it was hypothesized that administering square copying exercises to preschool children will not improve their square copying ability. A complete report of the study appears as a thesis by Williams (1970). One hundred and four preschool children comprised the population. There were an equal number of boys and girls of three and four years of age. Each child was in one of four groups for square copying exercises.

Group A saw a film which showed a square being made. This method was limited to a visual image, based on the stimulus-oriented theory of Gibson (1966) which suggests the use of visual feedback in image making. Group B utilized a flat wooden board of about three feet square which had four removable sides. The child was encouraged to manipulate and replace the four sides. This method was based in part on some of Piaget's (1967) theories. Group C was shown several cards; upon each was a square or some other shape. As the child was shown the cards there was an accompanying verbal description showing how the shape on each card was like or unlike a square. This method was based on the response-oriented theory of Olson (1968). Group D was a control group; these children were engaged in nursery school pleasantries for a comparable length of time.

A pretest of copying a square was followed by three training sessions of five to ten minutes each, within a period of several days. The post-test was also simply copying a square.

All copies of the squares were put into a pile. Seven judges then independently sorted these, from poorest to best.

Although the degree of change was often small, a significant number of children in the card sorting group (C) and a nonsignificant number of children in the wood square group (B) improved in square copying ability. Girls tended to improve in ability after the verbal task (C) and boys did better after the activity task (B). Boys tended to draw larger after the activity task, whereas girls drew large after the verbal task. There was great variation in strategy for all groups, particularly for younger children, although the control group's ability remained fairly constant.

Considering the relatively small degree of improvement observed in the copying ability of children, there seems no justification for establishing such training activities for preschool children. It came as a surprise that differences between boys and girls could be observed. Results were clearly defined for the four-year-old group. Since girls tended to improve after a verbal task and boys after an activity task, it may be that a combination of methods would provide a means for developing successful copying abilities. It appears that the interaction between the child and the stimuli is an important consideration in such a learning task.

It should be emphasized that the investigators were not interested in developing methods to improve square making ability, but saw this task as one means of determining some of the questions that are important to consider in analyzing drawing behavior. Certainly the small degree of improvement in square making ability by the population indicates that it would be far easier to wait a year for three to four year old children to mature sufficiently to perform such a task than it would be to spend nearly the same length of time in what is basically a frustrating task for both the child and the teacher.

B. Matching, recognition,
tracing, and copying

The following study was concerned with a question of whether the inability to copy a geometric form is caused either by perceptual problems or by lack of motor ability. The study is reported in full as a thesis by Collett (1971). For purposes of this experiment a triangle was chosen as the stimulus figure, because ordinarily children of this age would not be able to perform this task successfully. The age norm for copying a triangle is slightly over five years (Gesell, 1940).

Four tasks were designed to test the children's matching, recognition, tracing, and triangle making capacities. The first task was simply to see if the child could identify another triangle when he saw one. He was given a sheet of paper with a triangle at the top and a series of geometric forms below, including a triangle. He was asked to put a mark on the triangle which looked just like the one above. The second task was similar except that there was no comparison triangle. The child was given a series of geometric forms and asked to put a dot on the triangle. The third task was a tracing exercise. He was shown a triangle printed on a sheet of paper and given a yellow marker and asked to trace right over the triangle. The fourth task consisted of giving the child an empty sheet of paper and asking him to copy a triangle which appeared on a separate sheet. The model triangle was left for him to refer to if he wished.

The subjects for this study were 48 preschool children ranging in age from 3 years 7 months to 5 years 7 months. There were an equal

number of boys and girls and most of them were from middle-class backgrounds.

The matching and the recognition tasks could be scored objectively. A rating scale for judging the tracing and copying tasks was devised and two judges scored these tasks separately, with an interrelator reliability of .94 on the tracing task and .91 on the copying task.

All the children were able to discriminate a triangular form from other geometric figures. All but one child also performed the recognition task successfully (this one child could do none of the production tasks).

As was expected, children improved in their ability to trace a triangle as they grew older. There was a similar pattern in the copying task. Apparently the tasks were relatively difficult for the three-year-old, but the four- and five-year-olds could approximate a triangle on both the tracing and copying tasks.

Of interest is the fact that there was a correlation ($r = .70$) for the tracing and copying tasks for the youngest group only. The middle and older groups had no correlation between tracing and copying. Although the three-year-olds had considerable variation and ability, those who seemed to do well in tracing also did well in copying. But among children about five years old, some can trace better than they can copy, some can copy better than they can trace, and some can do both well. It appears that the ability to do a good job of tracing does not necessarily precede the ability to copy.

Although the sample in this study was small ($n = 48$) it does raise questions relative to the relationship between tracing and copying. It seems clear that the ability to discriminate and recognize comes early. However, for older children the tracing and copying tasks seemed to require different abilities. Tracing is usually regarded as a motor task; it would seem logical that the development of perceptual skills (as in discriminating and recognizing triangles) plus motor ability (as in tracing over triangles) would provide the copying ability necessary to produce forms. Because this does not seem to be the case, it may be that some of the present teaching methods following this pattern of development

should be open to question. Possibly copying skills are cognitive and may take antecedents other than perceptual and motor ability.

C. Meaningfulness and copying ability

Apparently it is a difficult task for young children to copy geometric forms. However, if these forms have a meaning for the child, the ability to copy might be accomplished sooner than is possible than if a child is merely asked to do this task for a meaningless shape. It was hypothesized that asking a child to copy a familiar form would be an easier task than having the child copy a comparable geometric form.

A triangle shape was selected as the stimulus since three- to five-year-olds would show various degrees of ability in their attempts to reproduce it. The normal age for success in triangle copying is about five years, three months (Gesell, 1940). The subjects for this study were the same 48 preschool children mentioned previously. They ranged in age from three years, seven months to five years, seven months. The subjects were tested individually and were first shown a triangle on a separate piece of paper and then were asked to "make one just like this on your paper". The second task was to copy a witch's hat. This hat was shown as a drawing along with three other hats including a top hat, a lady's hat, and a mountain climber's hat. The witch's hat was a triangle with an accentuated peak and an elongated base.

The two sets of triangles (copies of the simple triangle and copies of the witch's hat) numbering some 96 reproductions, were judged for accuracy. There was no significant difference in the production methods of copying the triangle versus copying the hat.

The ability to accurately copy a triangle followed a definite progression with age. Twenty-one of the 48 children scored equally well on their copies of both the triangle and the hat. These copies were examined more carefully and most of the reproductions of the hat indicated either a more clearly recognizable peak or elongated base. Although the triangle shape was not easier to reproduce when put into a familiar context, the children were able to "see" it as a witch's hat.

The study gave some indication that altering the geometric shape and putting it into a familiar context seems to have little influence on children's copying ability. A detailed report appears in a thesis by Trisdorfer (1972).

D. A television record of the drawing process

During the spring of 1970, an attempt was made to record on videotape the drawing process of preschool children. The initial attempts were unsuccessful, because of several technical problems. The use of one inch tapes and the Ampex equipment was discarded in favor of the greater portability and versatility of the half inch tape used on Sony equipment. The portable camera and battery-supplied-current made the task of following particular children much easier. The problem of sound reproduction was solved by supplying wireless microphones for individual children and picking up their voices through an FM receiver. This permitted easy monitoring of the conversation between a particular child and an adult.

Some eight to ten 20-minute tapes were gathered and these were viewed during the past year. It is obvious that there are many things occurring in the drawing process, and the possibilities of capturing and analyzing this material are great. At this point, however, little has been done systematically with these tapes, but there are some interesting sequences which should be mentioned.

For most children the use of art materials is serious business. The gripping of the crayon, the holding of the brush, and the twisting of the clay are all done with a sense of purpose and urgency. We have no examples of "fooling around" with art materials. One sequence shows a youngster trying to cut a piece of light cardboard with a pair of scissors. It is obvious that this is a real struggle and although other things intervene, the task goes on for nearly 15 minutes before completion. The satisfaction in completing the task is obvious and no particular use was made of the pieces once they were cut. Apparently satisfaction comes from the accomplishment and resulted from the process itself.

The role of the teacher was looked at closely. It seems as if an adult can be an intrusion as often as a help. For example, one youngster was pasting a collage; the nursery school teacher, seeing the difficulty, assisted the youngster, at which time the child promptly stopped the activity and pushed it aside. In another sequence two girls were exchanging clay biscuits and pretending to eat them. The arrival of the teacher halted this bit of dramatic play as though the children thought it was undesirable for an adult to see such activities.

There are further assumptions that can be drawn from these tapes, but the testing of these hypotheses would have to be done systematically with a large population. The use of these tapes is providing an opportunity to build theory but not to test it.

It must be mentioned in passing that isolated sequences within these tapes, properly edited and with commentary, would provide an excellent means for the education of those who question the value of art materials for children. It was fairly obvious to this observer that the manipulation of materials, the creation of forms, and the solving of artistic problems provided self-learning experiences for these children.

E. A comparison of drawing and writing

The following study was relatively simple and was carried out during the summer of 1970 at one of the local Ithaca nursery schools. Preliminary observations of children's drawings seemed to indicate that those children who could write their names were also children who had progressed beyond scribbling in drawings. In other words, there seemed to be a parallel development between the achievement of forms in the drawings and achievement of forms in the writing. Although there were exceptions, these may be motivational.

Several drawings were gathered from some 40 preschool children over a period of two weeks. Each child was asked to put his name on his drawing, and if he said he could not do this task, he was given encouragement or told that he could "make believe" he was writing his name. The drawings and attempts at name making were compared on some 100 drawings on which both appeared. Only those drawings were examined in which the

drawing medium was the same for both expression and name making.

The results were quite clear in supporting the hypothesis that if a child makes closed forms in drawings, his writing also includes closed forms. If the child is still scribbling over a page, the writing sample, although smaller, is also primarily a scribble. Those children who were making recognizable objects in their drawings were also making recognizable letters.

Although the above study was relatively simple, the results were so apparent that no further plans have been made to enlarge the sample or replicate the experiment. It became obvious to the investigator that the production of forms would be parallel in both drawing and writing. The implications of this take on some importance in the teaching of writing. Obviously some children at the kindergarten level will not be making forms that are closed, or naming that which they have made, or even making recognizable objects in their drawings. Writing exercises would be beyond the abilities of these youngsters and could be frustrating. Since there seem to be ample differences between the size of the drawing and the writing (even the youngest children made the writing much smaller), it would appear that problems of muscle control or coordination are not the prime factors in achieving success in writing. The ability to form concepts and portray recognizable objects seem more basic to both methods of form making.

F. The drawing of geometric forms on various shaped backgrounds

This is a preliminary study using only 10 children aged three years to four years, three months of age. Each child was asked to copy a circle, a square, and a triangle on a circular piece of paper; he was then asked to copy the same three forms on a square piece of paper; and finally he was asked to repeat the process on a triangular piece of paper. The tasks were spread out over a month's time so that each child would not grow tired of copying so many forms. The form to be copied and the shape of the paper upon which it was drawn were randomly distributed over the time and with the population.

As might be expected, every child could draw a reasonably good circle on a circular piece of paper. Each child was also able to draw a circle on the square piece of paper. However, only five children were able to draw a circle on a triangular piece of paper, and four of these were the older children.

As was mentioned earlier, normally at the age of four a child can copy a square. However, only two of the older children were able to copy a square on a circular piece of paper. Seven of the ten children were able to copy a square on a square piece of paper and only one child was able to copy a square on a triangular piece of paper.

Normally it is not until after five years of age that a youngster can copy a triangle. Only one child was able to copy a triangle on a circular piece of paper. This same child was able to perform this task on a square piece of paper. However, five children were able to make recognizable triangles on a triangular piece of paper and all of the children were well under five years of age.

All of this raises some serious questions relative to the norms of accomplishment for the task of geometric form copying. A good deal of speculation has gone on as to why the triangle is a difficult task for youngsters to accomplish (Olson, 1968). It may be that different results would be obtained if triangular pieces of paper were used as a drawing base instead of the usual rectangular piece of paper. An equal number of children were able to draw the circle upon the triangular paper as could draw the triangle on the triangular paper. The square, on the other hand, was very difficult to accomplish on the triangular paper, with only one child being successful in this task. This raises the question of whether the youngsters see the geometric form as a mass, or whether these forms are seen as merely individual lines that touch at random points. If the latter, then the shape of the paper can be used as a reference, and therefore the paper shape plays an important role in determining the success of such copying. It is anticipated that most adults see the linear representation of a geometric form as being a positive shape and readily recognizable as having a form which could be removed from the paper. However, it may be that some children do not have

this concept and see the outline as merely the random placing of lines on a paper. Understanding the task as the latter would make the copying procedures much more complex and difficult. Obviously more work needs to be done on this aspect of form copying.

G. The effect of experience upon preschool children's drawings

One of the problems that faced us was the question of how much children's drawings were effected by their immediate experiences. Therefore, an attempt was made to see what changes would be made in preschool children's drawings after a series of selected experiences. This material is reported in detail in a thesis by Mauer (1971). Thirty two preschool children were involved in the study. They ranged in age from three years, two months to five years, six months. It was hypothesized that there would be a change in the drawings of children after they had had a variety of experiences. A pretest and posttest drawing were collected from each child at several sessions with a variety of experiences and at one control session with no experience. The experiences included having each child examine carefully his own first drawing, asking him to rub and feel a variety of textures, showing him a series of pictures and cardboard constructions, asking him to examine a set of human figure drawings and also presenting him with an elaborate jack-in-the-box toy.

Record was kept of the time spent on each drawing, and judges compared the pretest and posttest for each experience. These were judged for a variety of artistic characteristics, including the amount of representation, the amount of detail, the area covered, the pressure used, and so forth.

Although some interesting things evolved from the study, the analysis of the data did not support the hypothesis. Apparently experiences such as the above have no immediate effect upon children's drawings. As might be expected, older children drew more representations, girls drew more human figures than boys, middle-class children drew more human figures than poor children, and the time spent in drawing a picture increased with age. From the drawings produced, it seems as if the three-year-old

is more involved in the kinesthetic activity since his drawings are primarily scribbles, whereas the five-year-old seems more visually aware of his environment.

Since the influence of the effect of the experience was not seen in subsequent drawings, it can only be assumed that differences in drawings are caused by deep-seated reactions to the environment and are not influenced by the immediate experience. Such deep-seated influences include developmental changes which may be the one most important factor. In other words, three-year-olds draw more like three-year-olds and five-year-olds draw more like five-year-olds, than do three- and five-year-olds draw like each other after having had the same experience.

III. Implications from the Work Completed to Date

Appearing again and again in these studies is the importance of the teacher as a catalyst in the drawing process. Youngsters are generally eager to draw with an adult present as compared to a setting with no adult present. Children were also eager to discuss their drawings with an adult, which gives some indication that the art activity performed in isolation may not be as educationally valuable. However, the teacher does not need to worry about the proper verbal stimulation since it appears that an occasional grunt or nod of head does quite well. The work with the "square copying" tasks and the "drawing after experiences" study also points out the importance of an adult giving support and acting as a sounding board for young children. It should also be noted that a nursery school teacher can inadvertently halt or change activities; some of the television tapes gathered show this quite clearly. It almost appears that a grunting or nodding adult may be a more positive influence than a constantly verbal directing one.

Another interesting factor that has come up again and again in these studies is that the process seems to be more important to the children than the product itself. For young children the manipulation of colors or the achievement of control over a pair of scissors is enough satisfaction without having to have a definite displayable art product. Many children could not recognize their own paintings the following day.

Even children who had just completed making copies of squares could not identify their own attempts as squares. This raises serious questions about the usual nursery school art activities that tend to focus on a particular product that youngsters often are expected to take home.

Developmental differences became quite clear when comparing products of the three-year-old and the four-year-old. The longer the investigators worked with children, the more apparent these differences became. For example, three-year-olds tended to draw their experience with objects rather than the objects themselves. However, older children tried to represent the visual qualities of these objects. The four- and five-year-olds include many more attempts at human figure drawing than do younger children, although these may not be easily recognized by the casual observer. Varying the art material apparently does not influence these developmental differences, although the crayon, pencil, or felt pen does give the youngster fewer problems in controlling the art media, and therefore more detail and consequently more clear representations emerge. These drawing differences are closely related to the copying abilities of youngsters and the three-year-old who is not drawing recognizable objects is also not able to copy geometric forms.

It seems that there is little that can be done to speed up or change the drawing ability or developmental level in artistic expression. An immediate experience seems not to be reflected in drawings, and even trying to change or improve the copying ability of youngsters over a period of time does not seem to be particularly successful. However, some small change was seen in those abilities when manipulative activity and verbal discussion was carried on between a child and an adult experimenter. Certainly some of these possibilities are worth further exploration.

It seems that the young child does not increase in his drawing ability only because his motor coordination improves. That is, there are other factors that seem to be more important in drawing than the ability to control a pencil. Even three-year-olds when attempting to write their names made the marks much smaller than when attempting to draw objects. Nor does perceptual skill hold the key to artistic expression. All three-year-olds tested in one study could easily pick a triangle from a series

of geometric forms, yet the task of copying a triangle was very difficult. Even tracing, which could be seen as a motor skill, did not necessarily precede copying abilities. It would then seem that each of these tasks (recognition, tracing, and copying) are related not as much to each other as to a developmental pattern. Putting a triangle into a meaningful context didn't make the task any easier. Form copying appears to be an abstract process closely related to a child's ability to draw pictures of his environment. The cognitive functionings of the child apparently need to be developed to a level that makes it possible to conceptualize shapes and forms before either task, copying or picture making, can be accomplished.

Young children use various strategies in drawing activities; even the hand grip changes. The ability to copy forms fluctuates over a short period of time; the ability to produce a square does not proceed in a straight line from a scribble to a near square-like form. Possibly the youngster is seeing these forms not as closed shapes but rather as independent lines placed on the page in what may seem like a random order. That the shape of the paper upon which he is drawing can change the child's ability to copy some of these forms needs to be examined more closely. This could be upsetting to all of the work that has been done on establishing norms for geometric form copying, all of which may well have been done on rectangular paper.

The literature about preschool art is plentiful. However, most of it deals with projects and activities that are considered suitable for the nursery school. Recently, however, some experimental work has been reported; this undoubtedly reflects the growing concern about the importance of the preschool years in influencing and setting the stage for later growth. This does not seem to be the place for the review of some of the more interesting studies that have been done, but a review of the pertinent literature appears in the completed theses mentioned earlier.

The nursery school has become an integral part of our educational system. Art activities normally play an important role in the usual nursery school program. The importance of understanding what is involved when children perform a range of art tasks needs to be thoroughly examined. It seems as if we are just beginning this task.

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