

AN OBSERVATIONAL LEARNING STUDY CONCERNING
SOME FACTORS IN IMITATION AND IDENTIFICATION

by

JEAN CAROL YOUNG

B.A., University of Tulsa, 1967

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

in the Department
of
Psychology

We accept this thesis as conforming to the
required standard

THE UNIVERSITY OF BRITISH COLUMBIA

April, 1970

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study.

I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the Head of my Department or by his representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of PSYCHOLOGY

The University of British Columbia
Vancouver 8, Canada

Date 12-4-70

ABSTRACT

This study was designed to investigate some features of the stimulus in observational learning which might be used to make a distinction between imitation and identification on an experimental level. The effective stimulus in imitation was considered to be the behavioral task of the model, or "the specific behavioral event" whereas in identification it was defined as general personality characteristics such as status, goodness, or intelligence which are generalized over time from numerous imitative habits to elicit a more global long-term response. On a pre-test, six year olds and nine year olds were shown two symbolic models simultaneously (an imitation model and an identification model) and were asked to perform the task that the models had done (color a picture) to assess their tendency towards similarity to one or the other (by copying one model's picture more than the other); that is, to attempt to identify with or to imitate the models. During the experimental phase, each of the two age groups were divided into two experimental treatment groups. For one experimental group the effective stimulus in the identification model was emphasized and for the other the effective stimulus in the imitation model was emphasized. It was predicted that such a procedure would alter or strengthen the predominant response. Later, a post-test was administered to see if the alteration or strengthening of the response was stable or if it had occurred only during the experimental phase.

For the most part, it was found that six year olds imitated while nine year olds identified in the pre-test. However, the experimental manipulations seemed to be most effective with the six year

olds. As well, the effective stimuli used to differentiate identification and imitation had a significant effect on the children throughout the study, confirming the position that the two responses could be differentiated on the basis of the stimuli which evoke them.

Some methodological problems in carrying out observational learning studies are discussed.

TABLE OF CONTENTS

I. Chapter 1: Introduction	1
II. Chapter 2: Method	12
III. Chapter 3: Results.	24
IV. Chapter 4: Discussion	29
V. References	35
VI. Appendix I: Stimuli	37
VII. Appendix II: Footnotes.	43

LIST OF TABLES

- I. Table 1. Preferences of 7 and 8 year old children for pair members of stimulus paintings when they are shown simultaneously15
- II. Table 2. Representation of subject ($S_1 - S_{48}$) assignment into age and experimental groups with two measures for each S . . .17
- III. Table 3. Possible marks used in scoring each child's drawing for modeling after imitation and identification paintings used in each of the phases22
- IV. Table 4. Means for imitation and identification modeling in the age and instructions group in each of the three phases . .25
- V. Table 5. Summary of analysis of variance.26

CHAPTER 1:

INTRODUCTION

It has been proposed that observational learning is the mechanism through which imitative and identificatory behaviors are acquired by an observer through exposure to a model's responses and verbalizations (Bandura, 1962, 1965, 1969). Observational learning refers to a general process in which the behavior and attitudes of a person, or such alleged behavior and attitudes of a person (Flanders, 1968), may act as a model for that of another. In this function the model may also act as a guide aiding the observer in discriminating among environmental cues and providing examples of potential responses for the observer. For example, in a study of moral behavior (Bandura and McDonald, 1963), children who exhibited predominantly objective or subjective moral orientations on the pre-test, observed adult models who expressed moral judgments counter to their own orientation; that is, the child would be presented with a situation requiring a moral judgment and make one himself, then he would observe a model responding to another similar situation but answering with the opposite orientation to that of the child. In this way the child and the model alternated giving responses over some twenty situations. The end result was that the child's predominant moral orientation (objective or subjective) was significantly altered and remained so over time. In this case the model discriminated for the observer the appropriate mode of behavior and then provided for the child numerous examples of one

type of moral judgment. It is in this function that the model's characteristics and responses provide a very potent cue or stimulus for the behavior of the observer.

Previously, observational learning has been employed in studies dealing with aggression as well as moral behavior (Bandura and Walters, 1963) in which children's behaviors have been significantly modified or novel behaviors learned through the observation of a model independent of the observer's overt response or of its reinforcement; that is, it has been demonstrated that the mere observation of a model is all that is necessary for learning to take place and therefore, any theory of social learning does not necessitate the inclusion of such concepts, for example, as practice or reinforcement for learning to occur.

The present study is intended to accomplish two things within the theoretical framework of observational learning as has been discussed above. First, as this study deals with imitation and identification, it is necessary to provide a distinction for the present study between these two terms. It should be noted, however, that other distinctions or labels than those made below might also be used to generate the same hypotheses as the ones used in this study; for example, Whiting's (1960) status envy theory of identification might result in the same predictions but unfortunately with certain limitations due to the lack of development of Whiting's theory. Therefore, imitation is defined as behavior produced by observing a model perform a particular behavioral sequence at a specific time. Thus, since imitation is the near or complete reproduction of a

specific behavioral sequence of a model, it is assumed that the behavior which the observer models himself after, or rather the type of behavior which induces the modeling, is specific, concrete and task oriented. For example, the numerous imitation studies cited by Bandura and Walters, (1963) all make use of concrete task-oriented behavior by the model. For example, the model's function might be defined by, 'Pick up the green hat, add a red feather and put the yellow gloves on.' This is typically the type of behavioral sequence which the children reproduce. However, this should not be confused with the so-called studies of imitation dealing with personality variables such as nurturance. In this case, such behaviors as nurturance on the part of the model are used as reward, vicarious reward or 'encouragement' rather than being the behavior which is to be copied; that is, certain personality variables manipulated in imitation studies are used as a class of reinforcer to study the influence versus the non-influence of it on the reproduction of a specific task, but it is not the nurturance per se which is being copied or imitated. The observer's "accepting" the task-oriented behavior of the model into his own behavioral repertoire is considered the mediatory link between the task stimuli of the model and the reproduction of them by the observer (Flanders, 1968).

Identification, however, is evoked by the subject's observation of a model whose personality characteristics are stressed as the salient features of his behavior in contrast to the task being emphasized in imitation studies; and the observer subsequently reproduces the model's responses in generalized situations over a

long period of time, in hopes of becoming similar to the model's personality. The concept of 'similarity' has been considered to be the mediatory tie between the model's behavior and the observer's generalized imitation of it (Gerwirtz and Stingle, 1968). It is also thought that many instances of imitation finally evolve into the generalized case which is commonly labelled identification, or in some cases generalized imitation. The latter term has generally been employed in an attempt to escape long standing controversies over the referents given to and the distinctions or non-distinctions made between imitation and identification as Gerwirtz (1968) has attempted to point out (which is discussed below).

Unfortunately, therefore, for the present definition of imitation and identification, these two terms in the past have been surrounded by various controversies and confusion. For example, personality theorists were likely to refer to the process of observational learning as "identification," while experimental psychologists often labelled it "imitation." To further confound the issue, Bandura (1962) has stated that both groups were actually studying the same process which encompassed the same behavioral phenomena. However, it will be shown, that imitation and identification do differ on the basis of the stimuli which potentially evoke them (task variables versus personality variables respectively) and, that they appear to be subsets of observational learning. In support of this notion, and in contrast to Bandura's (1962) view, a review of the research reveals that the two groups, classified as personality theorists and experimental psychologists, are working within

different frames of experimental reference which may be distinguished from one another: identification studies usually deal with general personality characteristics (e. g., Heilbrun, 1965) while imitation studies deal with specific behavioral events (e. g., Bandura and McDonald, 1963; Thelen, 1969).

Theoretically, however, apart from Bandura's view, a distinction between the two concepts has been made tangentially by Parsons (1951) who differentiates between imitation as behavioral specificity and identification as behavioral generality. Even though Parsons is not overly clear about what he means by behavioral specificity and generality, it seem that he was indicating that one could differentiate between the two concepts on the basis of responses made to specific situations and responses that have been generalized to more abstract conditions. In addition, the thoughts of other writers add merit to this formulation in relation to identification and imitation; for example, Seward (1954) has suggested that identification is a high level abstraction from numerous imitative habits. Other writers (e. g., Lazowick, 1955; Osgood, Suci, and Tannenbaum, 1957) have used the term identification for observational learning dealing with categories of responses delineated as "meanings" and reserved the label "imitation" for specific acts. Still another similar distinction may be made by employing more formal personality theory terminology by considering that imitation deals with "specific traits" while identification deals with "core traits."

The second major intention of the present study, and most important to it, is to emphasize that it is the environmental stimuli (that is, it is the discriminative cues for behavior given by the model which are in this case "task" cues to produce an imitative response and "personality" cues to evoke an identificatory response and any relevant reinforcements which strengthen the discriminability of these cues) which make possible a distinction between what may be termed "imitative" or "identificatory" on an experimental level. The actual content of the resulting behavior of the observer is irrelevant to the distinction--what is relevant is the stimulus which cues, directs, shapes or alters the behavior of the observer. The stimulus here is most important because imitation and identification, by definition, require a behavioral model and do not occur spontaneously, without direction or without reference to the behavior or verbalizations of another. Therefore, the characteristics of the model and what types of behavior the model performs, as has been discussed above, are crucial to the occurrence of imitation or identification. To give an example of what is meant here, (since imitation has been defined as modeling the specific behavior of a person at a specific time and identification as modeling the more general personality characteristics over a longer period of time) an "observer" may stand at a bus-stop, then get on a bus, and then sit in the first seat on that bus. This example of behavior may become representative of either imitation or identification dependent upon the stimulus cues that produced it while the content of the behavior remains constant. Therefore, in the first case (i. e.,

given that this may be used as an example of imitation) a child carried out the behavioral sequence by following the actions of an older child (the model) in order to get to the park. Here there is no long term relationship--the behavior is direct and simple and leads to an immediate and direct end of getting to the park by following a model. The child has accepted the behavior of the model deemed necessary for getting to the park into his own behavioral repertoire and had reproduced it, thus fulfilling the defined requirements of imitation. On the other hand, if the bus driver had been the child's father who represented to the child a person of high status, competence, etc., and whom the child wished to be like and had imitated small behavioral sequences in the past for which he had been rewarded at least partially, then this particular sequence could be offered as an instance of identification whereby the child is copying the model's behavior for a long-term goal with no immediate reward; i. e. to be like the father in generalized situations, or as Gerwirtz and Stingle (1968) would have it, to be "similar" to the father.

Therefore, to demonstrate the difference between imitation and identification on the basis of differing environmental stimuli, the present study has used symbolic models so that model characteristics or setting conditions may be varied systematically (i. e., the models were described and an example of their behavior shown to the children as it was thought that live models introduced too many irrelevant and extraneous factors which would confound the study, the importance of which has been demonstrated by Batt (1970).

in a study of person perception showing that previously supposed "irrelevant factors" do indeed affect evaluation of live models. For the imitation condition, one model was described only in terms of the quality of the task he performed (a painting) and the reward he received for this painting and others. Thus, as a live model was not present, the children could only evaluate this model in terms of the task, or rather the specific behavior of the model, and thus, identificatory personality variables were not contained in this condition. Conversely, however, for the identification condition, the model was described only in terms of favorable personality characteristics which would be salient to school children, i. e., this model was described as a good athlete, a kind person and a good scholar and that everyone admired him for being such a good all-round person. His painting was intended to represent one of the many part-imitation cues which make up the entire generalized imitation response (or identification). As children are socialized to do well in school and achieve success there, it was assumed that providing an exemplary model of this socialization process could be viewed as providing one of the many sequences which, put together, form the generalized, long term identification response.

Working hypotheses for this study would be simple, if the models were presented singly to the children; however, in this case the problem for prediction occurs when the models are presented simultaneously as would most probably occur in natural settings. Therefore, the initial problem concerns whether the children will imitate or identify with the models and if these setting conditions

do in fact provide relevant, discriminable stimulus differences between imitation and identification. The predictions are derived from Gerwirtz's (1969; Gerwirtz and Stingle, 1968) treatment of the two behaviors. He defines identification in terms of generalized imitation and states that it occurs later in development and is a more complex response than simple imitation. Thus it may be queried whether younger children are more likely to imitate while older children are more likely to identify? Thus a change of dominant response from imitation to identification is assumed during development when models for both are presented simultaneously. Gerwirtz considers that the changes in behavior, from simple imitation to a more complex identification response, or changes in "developmental" behavior over time, occur in the following manner:

Behavior changes can often be accounted for by increased "responsivity" to stimuli, increasingly fine discriminations between stimuli (Bijou and Baer, 1963), and by the increasing complexity of the stimulus patterns (e. g., number, type, range and spatial and temporal relationship of the stimuli) that acquire control over various behaviors. . . By directing attention to changes in the stimulus side of the S-R unit, it may often be found that systematic increases in the complexity of an older child's behavior, relative to that of a younger child's, are primarily due to systematic increases in the complexity of the stimuli provided by the controlling environment (in part, perhaps, because parents or teachers assume that only the older child is capable of responding to complex stimuli, although for many behavior systems this may not necessarily be so). Thus, the characteristics (some would term "developmental level") of a child's response systems could be determined by the range of functional stimuli to which he has been exposed. (Gerwirtz, 1969, pp. 112-113).

Thus in the present study the more complex stimuli (for producing identification) are defined in such terms as "long-term general characteristics" while the simpler imitation stimulus is defined in terms of specific model behaviors in a specific situation. Thus if a child shows a predominant response to a model displaying "long-term general personality characteristics" that is defined as an identification producing model, then one could assume that he has identified with it because he has made his response "similar" to it (and fulfilled the traditional mediatory definitions of identification by behavioral similarity; v. Gerwirtz and Stingle, 1968) or has accepted the imitation model's response as his own and incorporated it into his own behavioral system (as Flanders, 1968, would define the necessary link between the child's and the model's behavior).

Specifically, it is then hypothesized that younger children (six year olds) will be predominantly more responsive to simple imitation model cues, while older children (nine year olds) will be predominantly more responsive to more complex identification model cues.

A secondary question involves the possible modification of either the predominant imitation or identification response to the two models. This procedure is very similar to that of Bandura and McDonald (1963), except that imitation responses are emphasized in the model for one half of the children at each of the two age levels, and identification responses are emphasized for the other

half of the children. Generally, it is predicted that this procedure will alter the predominant response when the non-dominant one is emphasized (e. g., imitation might take the place of identification in the nine year olds as the predominant response in this study), or if the predominant response is emphasized then it will be strengthened. Specifically, then, it is predicted that (1) emphasizing imitation for six year olds will strengthen the tendency to imitate while (2) emphasizing identification for six year olds will alter the predominant response from imitation to identification. Conversely, it would be predicted that in the case of nine year olds that (1) emphasizing imitation would alter the predominant tendency from identifying to imitating while (2) emphasizing identification would strengthen the identification response instead.

CHAPTER TWO:

METHOD

Subjects

The subjects were twenty-five boys and twenty-three girls enrolled in the first and fourth grades at Holland Hall School, Tulsa, Oklahoma. Since there were two sections at each grade level each of which had been formed randomly, one section from each grade level was arbitrarily assigned to the "imitation" instructions condition while the remaining section at each level was assigned to the "identification" instructions condition.

Thirty-nine additional subjects were discarded due to absence, or failure to sign their names on their drawings in at least one of the three phases so that the progress of these children could not be plotted for all three phases.

Stimulus Materials

All subjects viewed the same pair of symbolic models for each of the three phases. These consisted of three pairs of water color paintings with the subject matter within each identical but with detail varied. For example, for one phase the behavior of the symbolic models was represented by two paintings of clowns; however, the clowns were painted in different colors, they wore different hats and they carried different objects in their hands so that the differences between them could easily be discriminable. Obviously drawings of the same theme were chosen to avoid children copying one because they preferred the subject matter of it over

another independent of the symbolic model who supposedly painted it.

The paintings were 15" x 20" each and were done on standard water color paper. Each pair of the paintings is described below with the "imitation" or "identification" instructions assigned to each as indicated. (Photographs of these paintings appear in Appendix 1).

1. Pair "1" used in Phase 1:

The subject of this pair of paintings was clowns. The first one of the pair which had "identification model" instructions assigned to it was a clown painted in yellow, red and purple. The clown had bell-toed shoes, carried a balloon and wore a large hat which contained a stemless flower. The other clown (used for the "imitation model") was painted in blue, green, and orange, and wore round toed shoes, carried an umbrella, and wore a hat with a flower on a long stem hanging from it.

2. Pair "2" used in Phase 2:

Vases and fruit on a table were used as the theme of this pair. The first one (the identification model) was painted in blue, green and orange. The vase was a round shape and grapes and oranges were shown on the table. The second vase (the imitation model painting) was of a square shape with an apple and bananas on the table. The painting contained purple, yellow and red as the prominent colors.

3. Pair "3" used in Phase 3:

The theme of this pair was racing cars. The first car painting (the identification model painting) was painted in red, yellow and purple. The car was pointed in the right hand direction, had star shaped hub caps and a complex double front side window visor. The other painting (the imitation model's painting) was painted in orange, green, and blue. The car pointed to the left, had spoke wheels and a single line visor.

All paintings were done in a simple fashion so that they could easily be imitated equally well by six year olds and by nine year olds, as imitation was scored by the quantity of aspects appearing in the child's drawing (e. g., a red and yellow two-storey house) rather than the quality or perfection of work. In addition the paintings were designed and painted by an elementary school art teacher who should be able to make a competent judgment as to the capabilities of six and nine year olds. (In support of this contention, the artist also holds an M. A. degree in water-color painting and has served recently as the national chairman for Art of the National Independent School Association). The pairs were shown to a separate group of children who were asked to give their preference for one painting in each pair to insure that each painting was equally attractive. As the first and fourth grades were to be used as experimental subjects, the second and third grades of the same school were used as painting judges. The data for their responses are presented in Table 1. As may be seen from these data, the children were split approximately half and half for the paintings.

Table 1. Preferences of 7 and 8 year old children for pair members of stimulus paintings when they are shown simultaneously.

<u>Pair</u>	<u>Number of children who favored</u>
Pair 1: Clowns	
Red, etc. clown	41 ¹
Blue, etc. clown	45
Pair 2: Vases	
Blue, etc. vase	45
Red, etc. vase	43
Pair 3: Cars	
Red car, etc.	45
Blue car, etc.	42

1. Totals for each pair vary as preferences were obtained on different days and the number of children absent varied.

Design

The design is a $2 \times 2 \times 2 \times 3$ factor design with two factors repeated. Table 2 provides a diagram of the factors involved. All subjects took part in all three phases. Subjects 1-12 and 25-36 were six year olds from the first grade while subjects 13-24 and 37-48 were nine year olds from the fourth grade. All subjects were scored both for the amount of modeling after the imitation model and for the amount of modeling after the identification painting in all three phases. (See Table 2, Stimulus Matching scores). Subjects 1-24 appear in the identification emphasis groups (i. e., the attempt at altering the dominant response by highlighting the non-dominant response during Phase 2 as Bandura and McDonald did with moral judgments) while subjects 25-48 appear in the imitation emphasis groups.

Procedure

The children were tested during three phases. Two weeks elapsed between the pretest (Phase 1) and the experimental phase (Phase 2) and four weeks elapsed between the experimental phase (Phase 2) and the post test (Phase 3). (It was hoped that Phase 3 would indicate the permanency of the effects of the experimental emphasis procedure instituted during Phase 2). The children were tested in their regularly scheduled art periods by their regular art teacher so as not to disrupt them or add uncontrolled experimenter effects via a vis strange visitors to schools create excitement and this could disrupt observational learning tasks such as

Table 2. Representation of subject (S_1 to S_{48}) assignment into age and experimental groups with two measures for each subject.

Groups:			Phase 1: Pretest	Phase 2: Experimental Emphasis	Phase 3: Post test
Experimental Emphasis	Age	Stimulus Scores for:			
Identification	6	Identification	$S_1 - S_{12}$	$S_1 - S_{12}$	$S_1 - S_{12}$
Identification	6	Imitation	$S_1 - S_{12}$	$S_1 - S_{12}$	$S_1 - S_{12}$
Identification	9	Identification	$S_{13} - S_{24}$	$S_{13} - S_{24}$	$S_{13} - S_{24}$
Identification	9	Imitation	$S_{13} - S_{24}$	$S_{13} - S_{24}$	$S_{13} - S_{24}$
Imitation	6	Identification	$S_{25} - S_{36}$	$S_{25} - S_{36}$	$S_{25} - S_{36}$
Imitation	6	Imitation	$S_{25} - S_{36}$	$S_{25} - S_{36}$	$S_{25} - S_{36}$
Imitation	9	Identification	$S_{37} - S_{48}$	$S_{37} - S_{48}$	$S_{37} - S_{48}$
Imitation	9	Imitation	$S_{37} - S_{48}$	$S_{37} - S_{48}$	$S_{37} - S_{48}$

is presented here.

Each child was given a sheet of 16" x 24" newsprint paper and a box of eight crayons containing the colors red, yellow, blue, purple, orange, green, black, and brown at the beginning of each test period. The children were told that they were to do drawings for an exchange of drawings between their school and a similar school in Fort Worth, Texas. In addition they were told that the two paintings which they observed during each test period were painted by pupils at the Fort Worth school.¹ (These paintings served as symbolic models to be imitated).

During Phase 1, the children were shown the clown paintings. They were given these stimulus instructions about each drawing in the Pair:

I have brought to class today two paintings done by some students from an independent school in Fort Worth. We are going to exchange art work with this school from time to time. These paintings I have today were done by two high school boys. The first one (pointing to the "identification model" painting) was done by a boy who was on the honor roll and captain of the football team. He was very popular with everyone because of his kindness. The other painting (pointing to the "imitation model" painting) was done by a boy of the same age who entered his art work in judged art contests and shows, and his work has won lots of prizes for its excellent quality.

As the children proceeded with the task, the art teacher made an effort to make sure that the children were not copying from each other and that they did not discuss among themselves their own drawings or the model drawings. Children that queried the teacher about how to do their own drawing were told to do whatever they pleased and that she could not tell them what or how to draw.

When they had completed the task, the papers and crayons were then collected and discussion about the paintings or the task was not allowed.

Phase 2 or the Experimental Phase occurred two weeks after Phase 1. Phase 1 had been administered to provide a base level preference for models displaying imitation characteristics as defined previously (see the Introduction) or for models displaying the defined identification characteristics, so that the results of Phase 2 emphasis on either imitation or identification could be compared. Thus, the purpose of Phase 2 was to experimentally attempt to alter the children's dominant response for imitation or identification by highlighting the imitation or identification response by offering rewards to the children on either an imitation or an identification dimension. This was basically the same type of attempt at experimentally manipulating developmentally determined dominant and nondominant responses in children as was used by Bandura and McDonald (see Chapter One for a discussion of their procedure).

During Phase 2 the children were shown the vase and fruit (a "still-life") paintings. They were told the following about each painting:

I have brought to class today two more paintings from the Fort Worth school. The paintings I have were done by the same two high school boys. The first one (pointing to the identification model painting) was done by a boy who was on the honor roll and was captain of the football team. He was very popular with everyone because of his kindness. The other

painting (pointing to the imitation model painting) was done by a boy of the same age who entered his art work in judged art shows and has won lots of prizes for his art work.

In addition, the imitation emphasis group received the following instructions (that is, one section each of grades 1 and 4 received them):

Today, after everyone has finished their work I am going to give the student who does the best drawing an extra "Effort Grade."

The other sections of grades 1 and 4 were given the following instructions (which constitute the identification emphasis groups):

Today, after everyone has finished their drawings I am going to give one student in the class an extra "Effort Grade" for the student who is the best behaved.²

Again, after the task was completed the drawings were collected.

Four weeks after Phase 2 the children were given the final post test to determine the learned or lasting effects of the experimental treatments on imitation and identification. They were shown the race car paintings and told:

I have brought to class today two more paintings from the Fort Worth school. The paintings I have today were also done by the two high school boys. The first one (Pointing to the identification emphasis painting) was done by a boy who was on the honor roll and captain of the football team. He was very popular with everyone because of his kindness. The other painting (pointing to the imitation emphasis one) was done by a boy of the same age who entered his art work in judged art shows and has won lots of prizes and awards for his work.

The drawings were collected when the children had finished the task and they were told that this was the last set of drawings

to be exchanged with the Fort Worth school.

After all three phases had been completed, the children's drawings were sorted so that there was a set of three identifiable (by name) drawings for each child. Drawings for which this could not be done were discarded. Then each drawing was scored for the amount of content that was similar to that in the imitation model drawing and for the amount of content that was similar to that in the identification model drawing to yield two scores for each drawing, imitation modeling and identification modeling. Scoring procedures are described below.

Scoring of Imitative Behavior

Each child's drawing in each phase was scored out of a possible six marks for copying the identification drawing and six marks for copying the imitation drawings. For example, in Phase 1, if a child had drawn and colored a yellow, red and blue clown with bell toed shoes, holding an umbrella and wearing a hat with a stemless flower, he would receive 4 marks for identification modeling and 2 marks for imitation modeling based on the system outlined in Table . However, as he had the choice of nonimitation, if he had drawn and colored a brown and black clown that was barefooted but carried a balloon and wore a hat with a long stem lower in it, he would receive a score of 1 for identification and 1 for imitation. Therefore, it was possible for each drawing to be scored from 0 to 6 separately for identification and imitation. As well, indecisive children could use all six colors, for example, and receive 3 points

Table 3. Possible marks used in scoring each child's drawing for modeling after imitation and identification paintings used in each of the phases.

<u>Identification Painting</u>	<u>Possible marks</u>	<u>Imitation Painting</u>	<u>Possible marks</u>
Phase 1 Clowns:			
1. Yellow color	1	1. Blue color	1
2. Red Color	1	2. Green color	1
3. Purple color	1	3. Orange color	1
4. Bell toed shoes	1	4. Round toed shoes	1
5. Balloon	1	5. Umbrella	1
6. Stemless flower	1	6. Long stem flower	1
Total	<u>6</u>		<u>6</u>
Phase 2 Vases:			
1. Blue color	1	1. Yellow color	1
2. Green color	1	2. Red color	1
3. Orange color	1	3. Purple color	1
4. Round vase	1	4. Square vase	1
5. Grapes	1	5. Apple	1
6. Oranges	1	6. Bananas	1
Total	<u>6</u>		<u>6</u>
Phase 3 Race Cars:			
1. Red color	1	1. Green color	1
2. Yellow color	1	2. Blue color	1
3. Purple color	1	3. Orange color	1
4. Points right	1	4. Points left	1
5. Star hubs	1	5. Spoke wheels	1
6. Double visor	1	6. Single visor	1
Total	<u>6</u>		<u>6</u>

credit for both imitation and identification. Thus, in no way were the children "forced" to obtain any score for imitation or identification. The complete criteria for which the drawings were scored are given in Table .

As may be noted the drawings were scored for the quantity of copied attributes but not for quality (e. g., using red versus yellow was not scored, just the fact that one color or two colors were used was the determining factor). This was done in an effort to remove the qualitative bias in drawing skill due to age differences between the nine year olds and the six year olds.

CHAPTER THREE:

RESULTS

Mean modeling scores for the identification and imitation stimuli in each of the three phases for both instructions and both age groups are presented in Table 4. An analysis of variance (a $2 \times 2 \times 2 \times 3$ factor design with two repeated measures) was carried out on the data. A summary of the results of this analysis appears in Table 5.

It may be noted that the means for imitation modeling are greater for six year olds than the mean modeling scores for identification in Phase 1 (See Table 4). This is in the expected direction. Conversely, however, in the case of nine year olds, the means for matching the identification stimuli are greater than those for the imitation stimuli in Phase 1. This indicates, that six year olds at least show some preference for modeling after the imitation model while nine year olds show some preference for modeling after the identification model.

It may also be noted in Table 5 that there are three significant interactions, while the remaining ones did not reach the criterion level of significance of .05. The main effects also did not reach an acceptable level of significance. First, the Stimuli \times Age interaction was significant at better than the .025 level ($F, 6.889; df, 1, 44$). This supports the notion that

Table 4. Means for imitation and identification modeling in the age and instructions groups in each of the three phases.

<u>Instructions Emphasis</u>	<u>Age</u>	<u>Stimuli</u>	<u>Phase 1</u>	<u>Phase 2</u>	<u>Phase 3</u>
Identification	6	Identification	2.00	3.50	2.83
Identification	6	Imitation	2.92	2.00	1.75
Imitation	6	Identification	2.50	2.08	1.58
Imitation	6	Imitation	2.83	3.58	3.00
Identification	9	Identification	2.75	3.00	2.83
Identification	9	Imitation	2.42	1.92	2.00
Imitation	9	Identification	3.58	2.00	2.25
Imitation	9	Imitation	1.75	3.17	2.92

Table 5. Summary of analysis of variance for instructions, phase, stimuli and age factors (2 x 3 x 2 x 2 respectively).

Factors	df	F
Instructions	1	0.553
Age	1	-0.000
Instructions x Age	1	0.009
SSW	44	
Phase	2	1.663
Instructions x Phase	2	0.023
Instructions x Phase x age	2	0.120
Phase x Age	2	1.357
PXS	88	
Stimuli	1	0.209
Instructions x Stimuli	1	24.113 ¹
Stimuli x Age	1	6.899 ²
Instructions x Stimuli x Age	1	3.338
SXS	44	
Phase x Stimuli	2	0.309
Instructions x Phase x Stimuli	2	13.068 ¹
Phase x Stimuli x Age	2	2.985
Instructions x Phase x Stimuli x Age	2	0.014
PSXS	88	

1. Significant at better than .001 level.
2. Significant at better than .025 level.

there is a discriminable difference between what is defined as imitation stimuli and what is defined as identification stimuli and this difference is dependent upon age (or "developmental level" if one uses a Gerwirtz type definition of the term.

In addition, the Instructions x Stimuli interaction was significant at better than the .001 level ($F, 24.113; df, 1, 44$). Inspection of Table 4 shows that marked changes take place in the children's responses after the instructions (emphasizing imitation for half of the children and emphasizing identification for the other half of the children) have been given at the start of Phase 2. This would support the predictions on the effects of the instructions given in the Introduction, while visual inspection of the means in Table 4 indicates that the direction of the results is generally as was predicted in the Introduction. All groups indicated clearly the prediction except for the nine year olds receiving the identification emphasis instructions. It may be that the identification response for nine year olds had reached its peak and that the emphasis does not increase the magnitude of the response as a result. In addition, the Instructions x Phase x Stimuli interaction was significant at better than the .001 level ($F, 13.068; df, 2, 88$). This would indicate that the effects of the instructions on the stimuli are apparent across the three phases.

No main effects were found to be significant; but this was expected in that the predictions indicated that the responses to the stimuli (for identification and imitation) would be age-dependent

and that the direction of the effect of the experimental instructions introduced in Phase 2 would be dependent upon the child's predominant response for imitation or identification stimuli (e. g., imitation emphasis would increase the magnitude of the six year olds' predominant imitation response whereas it would alter the predominant response in nine year olds to imitation).

CHAPTER FOUR:

DISCUSSION

The results showed that in Phase 1 six year olds modeled their work more frequently after the imitation model while nine year olds modeled their work more frequently after the identification model. To extrapolate from these findings that younger children imitate and older children identify and that the two responses differ in some way is based on several assumptions. First, these two types of behavior (identification and imitation), traditionally, have been thought to have been mediated by the child considering himself similar, in the case of identification, to the model (Gerwirtz and Stingle, 1968) or "accepting." in the case of imitation, the model's behavior into his own behavioral repertoire and reproducing it (Flanders, 1968).

Secondly, to say, in this study, that a child identifies, as a response distinct from imitation, it was necessary to point out the stimuli which evoke identification. Thus for identification, the model displays a favorable general set of personality characteristics. Since the socialization process has imbedded in the child that he should become similar to such a favorable model, and since the model emits a response (in this case a painting) which is within the scope of the child to model after, then if the child does make himself similar to that model by copying his behavior then he has identified with it by definition. Thus by being similar to the model the child has fulfilled the theoretical mediatory link for identificatory

behavior as stated by Gerwirtz and Stingle (1968). However, in the case of simple imitation, the model is seen to produce a specific response for which he has been rewarded (a first prize painting) and then the model may emit this response in the presence of the child who "accepts" this particular behavior as rewarding, and proceeds to reproduce the behavior himself and thus "imitates" the model.

Gerwirtz and Stingle (1968) support the view that identification and imitation are indeed different responses and are evoked by different model aspects. They state that "reduction of these terms (meaning identification and imitation) to the same level of analysis in basic paradigms open to a learning analysis is necessary and may show that apparent differences among them can be attributed to. . .the particular stimuli evoking the responses, and the functional reinforcers available, factors that do not ordinarily justify separate paradigms" (Gerwirtz and Stingle, 1968, p. 390).

Thus, it may be concluded in the present study on the basis of the data in Phase 1 and the above assumption that identification and imitation models do differentially evoke different responses in children. It may be said that six year olds "imitated" the imitation model by predominantly responding to his drawings (i. e., they fulfilled the "similarity" in behavior assumption of Flanders by modeling themselves after him). As well, the nine year olds "identified" with the identification model by predominantly responding (by copying) to his drawing.

Given these age differences, and the significant Stimuli x Age interaction, the findings lend support to the supposition of Gerwirtz (1969) that imitation and identification are age dependent or "developmental level" dependent; that is, they would be operating at different developmental levels depending on the history and amount of multiple imitations, reinforcements and instrumental learning that went into the formation of a level for the child. Or, according to Gerwirtz and Stingle (1968) this age difference could be accounted for on the basis of the ensuing quantity and quality of reinforcements or "a systematic shift in the discriminative conditions under which imitative and identificatory behaviors are reinforced" (Gerwirtz and Stingle, 1968, p. 391). What is meant by this explanation is that over time the child is reinforced differentially; that is, (within the present conceptualization) at first, the child is reinforced for behaviors in specific settings but as time goes on he becomes increasingly reinforced in generalized settings and for producing certain classes of behaviors in these generalized settings. Thus, the child would come to expect or increase his probability estimate for reinforcement from specific situations to general conditions, or as Seward (1954) suggests, that reinforcement is now related to a higher level of abstraction (identification) from numerous instances of reinforced imitative habits.

In addition, these findings would support the conceptualizations of Parsons (1951), Osgood, Suci, and Tannenbaum (1957),

Lazowick (1955), and Whiting (1960) who also have differentiated between imitation and identification.

Another important finding in the results was that the instructions given in Phase 2 significantly altered the predominant effect of the imitation and identification stimuli on the children. The possible effects of the instructions were presented in the Introduction. A reference to Table 4 will show that the predictions given in the Introduction are supported generally by the data. It was also noted in the section on results that these changes were statistically significant for the Instructions x Stimuli interaction, and the Instructions x Stimuli x Phase interaction. It may be concluded, then, that the existent tendency in young children to imitate by emphasizing imitation, and in older children to identify by emphasizing identification, may be strengthened. As well, the predominant tendency to imitate may be altered by emphasizing the aspects of identification for six year olds. Conversely, the predominant response of identification in nine year olds may be altered by emphasizing the aspects of imitation. Thus, as Gerwirtz and Stingle (1968) have suggested, it was shown that identificatory behaviors are indeed reversible as well as imitative behaviors which had previously been shown to be reversible (Bandura and McDonald, 1963).

In addition, it may be seen that the experimentally induced changes did not seriously deteriorate in Phase 3 which occurred four weeks after Phase 2 (see Table 4). This finding is an important aspect of the data in that social learning and imitation studies

have most frequently been attacked for their lack of "follow-up" data to see if the experimental manipulations are in some sense permanent or whether they are merely transitory. As an entire body of theory has been based on such studies (v. Bandura and Walters, 1963; Gerwirtz, 1969; Bandura, 1969) it adds support to their conclusions to remove this past experimental weakness and still be able to obtain results similar to those found at the time of experimental manipulation (that is, the post test yielded results similar to the experimental phase).

All of these results, however, are limited in a statistical sense. The two groups of six year olds and the two groups of nine year olds are assumed to each come from the same population, initially. As was stated in the method section, one "class" of six year olds was assigned to one experimental groups and the other section was assigned to the other experimental group. The same procedure was followed with the nine year olds. Ideally, one would have had two or more sections of each age assigned to each experimental group, however, this was not possible as there were only two sections of each grade level in this particular school. However, the subjects were tested in their regular art period by their regular art teacher and it is hoped that within the art classroom, the past experiences would have been enough alike to remove any sectional differences. It was not possible to run subjects in a public school as the classes are generally too large and twice the size of the school actually used. The size factor is important because in very

large classes one would be unable to stop the children from talking or copying from one another.

In this connection, it should be mentioned that a study similar to the present one was attempted in a public school in which the writer served as the experimenter. This was found to be disastrous for an imitation study. The writer, a stranger introduced into the classroom routine, caused the children to become apprehensive and agitated. The result was an audience effect which completely disrupted any attempt to get at typical imitative tendencies. One might be referred to a review article by Cottrell (1968) to gain some insight into the nebulous effects of audience. As was noted in the section on method, the regular art teacher acted as experimenter in the present study in a way so as not to allow the children to know that they were taking part in an experiment.

REFERENCES

- Bandura, A. Social learning through imitation. Nebraska Symposium on Motivation. 1962, 10, 211-269.
- Bandura, A. Vicarious processes: A case of no-trial learning. In L. Berkowitz (Ed.), Advances in experimental social psychology. Vol. 2, New York: Academic Press, 1965. pp. 1-55.
- Bandura, A. Social learning theory of identificatory processes. In D. A. Goslin (Ed.), Handbook of Socialization theory and research. Chicago: Rand McNally, 1969, Ch. 3.
- Bandura, A. and McDonald, F. J. Influence of social reinforcement and behavior of models in shaping children's moral judgments. Journal of Abnormal and Social Psychology, 1963, 67, 274-281.
- Bandura, A. and Walters, R. Social learning and personality development. New York: Holt, Rinehart, and Winston, 1963.
- Batt, B. S. Aspects of impression formation. Unpublished Master's thesis. University of British Columbia, 1970.
- Flanders, J. P. A review of research on imitative behavior. Psychological Bulletin. 1968, 69, 316-337.
- Gerwirtz, J. L. Mechanisms of social learning. In D. A. Goslin (Ed.) Handbook of socialization theory and research. Chicago: Rand-McNally, 1969, Ch. 2.
- Gerwirtz, J. L. and Stingle, K. G. Learning of generalized imitation as the basis for identification. Psychological Review, 1968, 75, 374-397.
- Heilbrun, A. B. The measurement of identification. Child Development, 1965, 36, 111-127.
- Lazowick, L. M. On the nature of identification. Journal of Abnormal and Social Psychology, 1955, 51, 175-183.
- Osgood, C. E.; Suci, G. J. and Tannenbaum, P. H. The measurement of meaning. Urbana, Ill.: University of Illinois Press, 1957.
- Parsons, T. The social system. New York: Free Press, 1951.
- Seward, J. P. Learning theory and identification: II. Role of punishment. Journal of Genetic Psychology 1954, 84, 201-210.

- Thelen, M. H. Modeling of Verbal reactions to failure. Developmental Psychology, 1969, 1, 297.
- Whiting, J. W. M. Resource mediation and learning by identification. In I. Iscoe and H. W. Stevenson (Eds.), Personality Development in children. Austin: University of Texas Press, 1960, pp. 112-126.
- Cottrell, N. B. Performance in the Presence of other human beings: mere presence, audience, and affiliation effects. In E. C. Simmel, R. A. Hoppe, and G. A. Milton (Eds.) Social Facilitation and Imitative Behavior. Boston: Allyn and Bacon, 1968, Ch. 5.



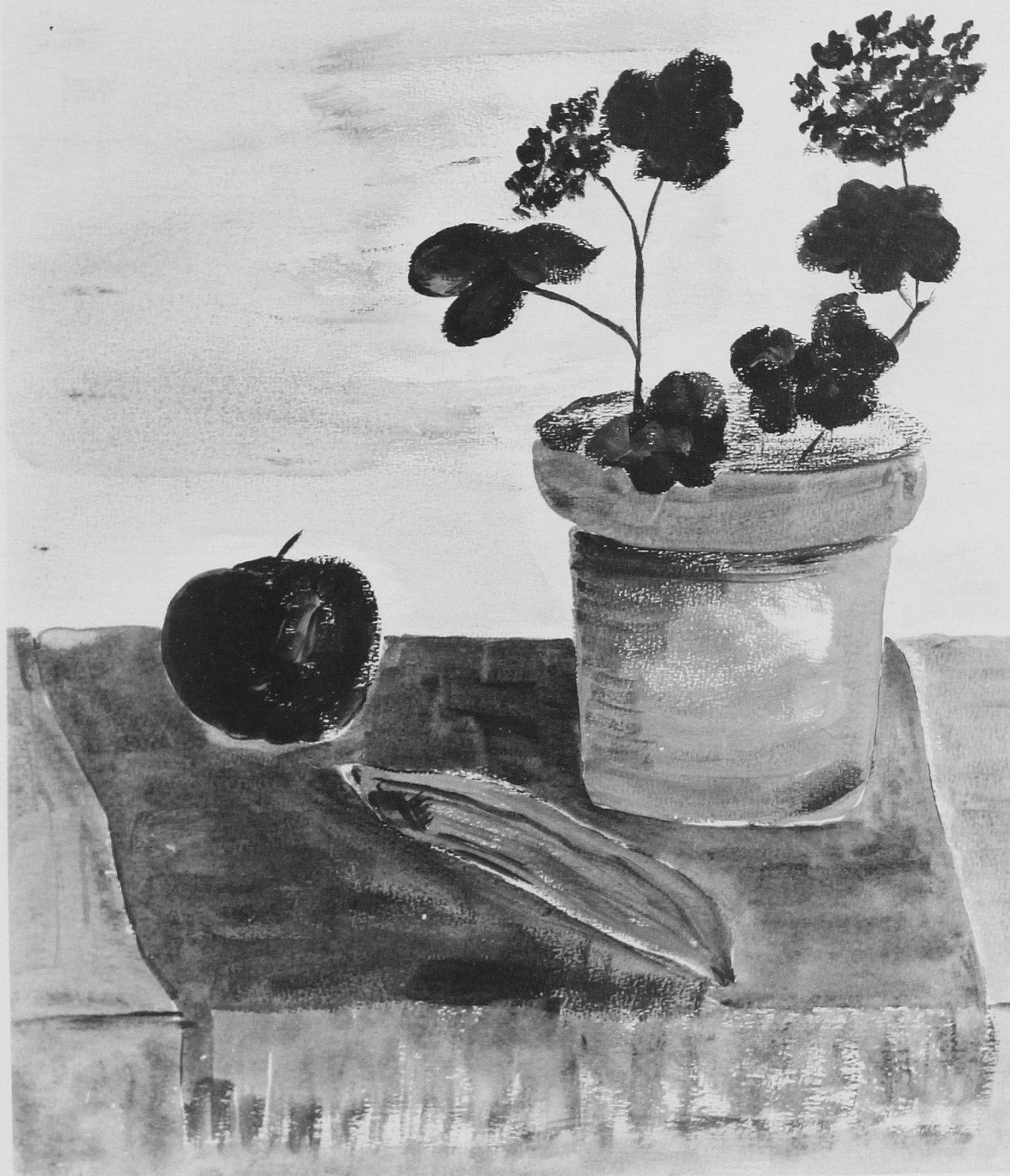
Stimulus 1: Identification model used in Phase 1.



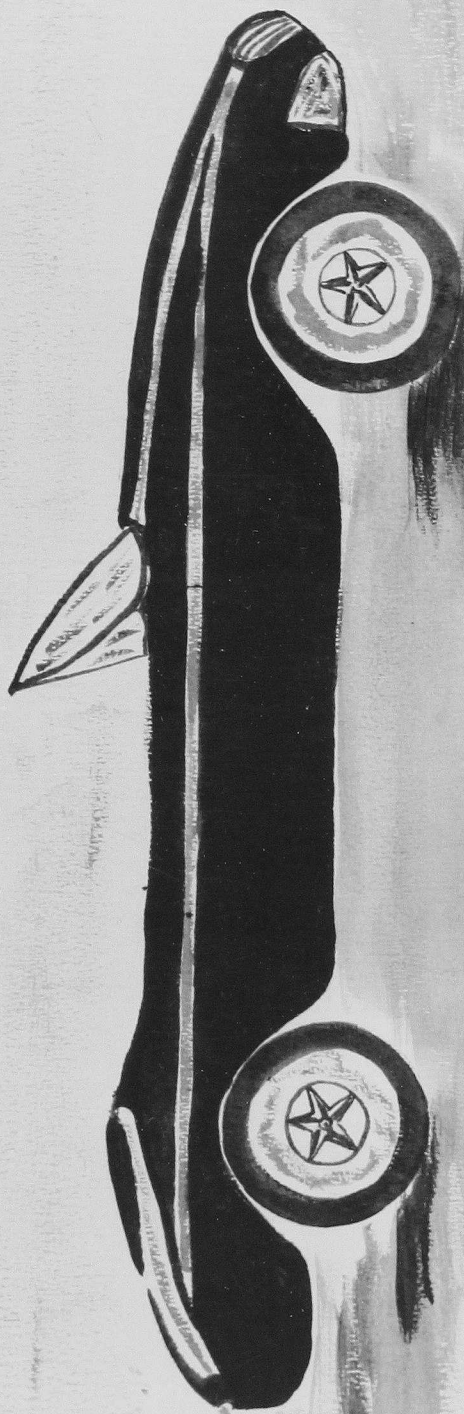
Stimulus 2: Imitation model used in Phase 1.



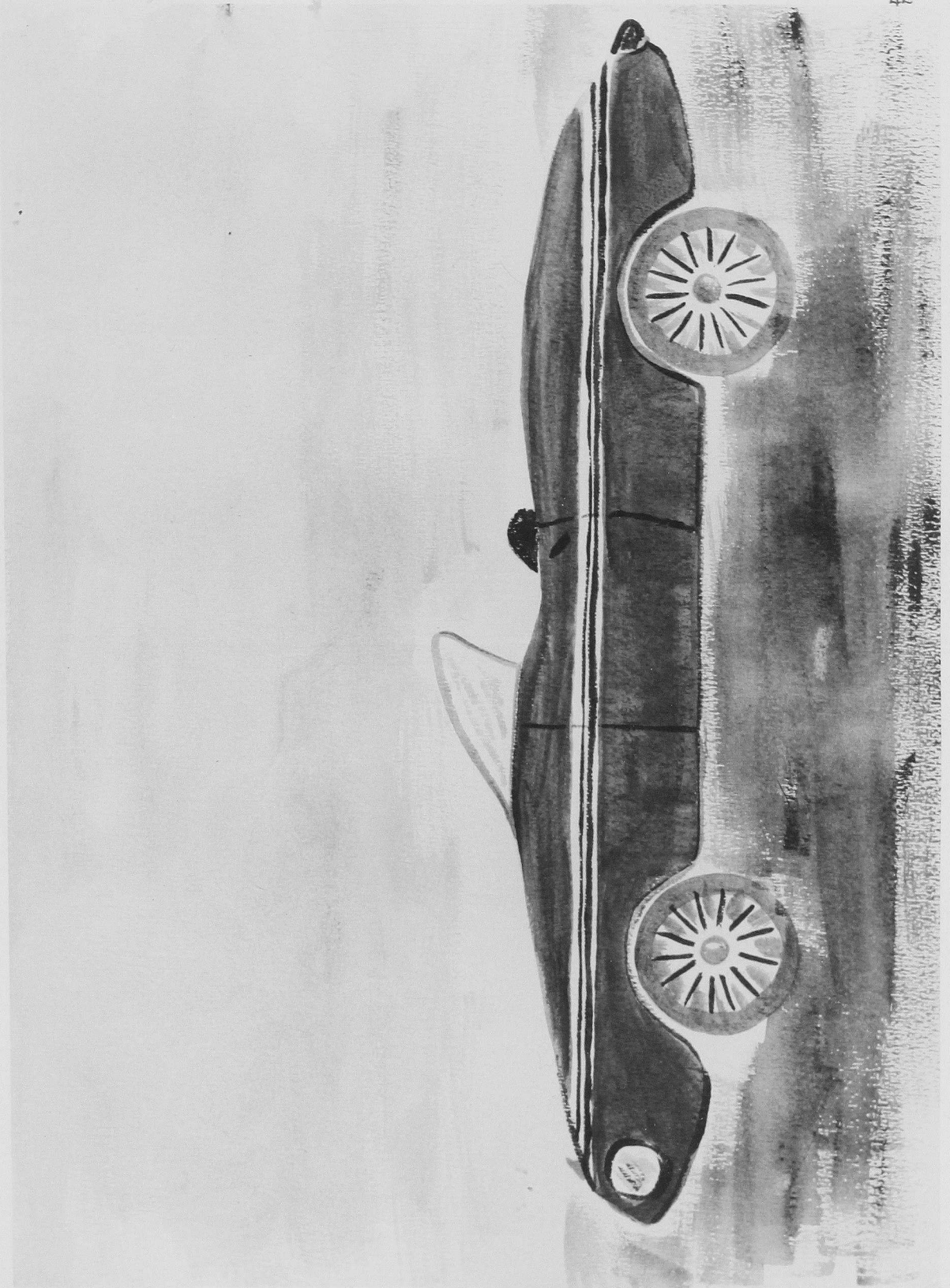
Stimulus 3: Identification model used in Phase 2.



Stimulus 4: Imitation model used in Phase 2.



Stimulus 5: Identification model used in Phase 3.



Stimulus 6: Imitation model used in Phase 3.

APPENDIX TWO:

FOOTNOTES

1. These instructions were given to induce the children to believe that the paintings were part of the normal school routine and not for an experiment in an effort to avoid the disruption of behavior that would result if they realized what the drawings were for.

2. This school regularly gives "effort grades" in art rather than the traditional grading system of A, B, C. etc. These grades are based on skill, progress, attitude, attention paid in class and general classroom behavior. Offering additional Effort Grades for class behavior or skills is in line with Effort Grade criteria and reasonable and plausible to the children.