

ORIGINAL THINKING IN PRESCHOOL CHILDREN AND
PARENTAL CHILDREARING ATTITUDES

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ORIGINAL THINKING IN PRESCHOOL CHILDREN
AND PARENTAL CHILDBREARING ATTITUDES

Creative thinking and original problem solving are becoming increasingly more important in our society. In a rapidly changing world there are new challenges to be met and problems to be solved in an innovative way. Thus it has become necessary for individuals to be flexible, adaptable, independent decision makers, willing to search for and try new ideas. These creative thinking abilities prepare individuals to be successful in coping with the demands of daily life.

Research shows that parents are the primary socializing agents for young children. It has been demonstrated that the various childrearing styles have differential influence on children's development. Baumrind (1970) has identified three patterns of childrearing and their consequences on children's development. The authoritative pattern of childrearing is related to children who are self-reliant and explorative. Parents of discontent, withdrawn and anxious children are generally authoritarian; while the permissive parents tend to have children who are immature and discontent. Baldwin, Cole, and Baldwin's (1983) research has also indicated the importance of parent-child relationship on children's development. Their research has indicated that the degree of warmth

and affection in parent-child interaction directly affects the child's cognitive and social development. It is therefore, conceivable that parental behavior and childrearing attitudes may have an effect on children's original thinking ability.

Parental childrearing attitudes as related to children's creativity have been examined in a number of studies. However, the majority of these studies involved elementary or high school age children and their parents (Aldous, 1973; Dewing & Taft, 1973; Maw & Maw, 1966; Nichols, 1964); or retrospective accounts of creative adults (MacKinnon, 1962). Studies pertinent to parental influences on original thinking and creativity in preschool children are fewer in number.

Fu, Moran, Sawyers, and Milgram (1983) using the Multidimensional Stimulus Fluency Measure (MSFM) investigated the relationship between original thinking in preschool children and parental personality factors, creativity, and childrearing attitudes. The Myers-Briggs Type Indicator was used to measure the parents' personality and the Parental Attitude Research Instrument (PARI) was used to measure parental childrearing attitudes. No significant relationships

were found between the parent and child variables. Schwartz (1976) found a negative relationship between parental authoritarianism, as measured by the Authoritarian Family Ideology scale; and children's creativity scores. Creativity was defined as ideational fluency on uses, instances, and patterns tasks. Dreyer and Wells (1966) examining children's ideational fluency and its relationships with various demographic and parental variables, reported that mothers of high creative children were less concerned with place in the community, stressed emotional security, and placed less emphasis on companionship.

Creative potential in young children, defined as behaviors and characteristics that promote novel responses, was studied in relation to parental conceptual systems and the home play environment by Bishop and Chace (1971). The play behavior of 3- and 4-year-old children was rated for complexity and variety during a play task. The mothers' attitudes regarding play and the home play environment were assessed on a concrete-abstract conceptual continuum. The results indicated that the more abstract mothers who valued play conditions that allowed flexibility,

exploration, and autonomy, have children who exhibited more complexity and variety in their behaviors during the play task.

The subjects in the above studies were either university laboratory school or nursery school children from middle or upper class families. This seems to indicate that the samples in these studies tend to be from relatively homogeneous SES backgrounds. This limitation has been recognized by previous authors who often regarded the lack of SES distinction a probable explanation for inconclusive or indistinct results pertaining to parental childrearing as related to preschool children's original thinking ability (Dreyer & Wells, 1966; Fu et al., 1983; Schwartz, 1976). Fu (1977) using subtest from the Torrance Tests of Creative Thinking, investigated the creative performance of children from middle and lower incomes homes. She found both sex and social class differences in the children's creative performance. The boys produced more original responses than the girls; and middle class children scored higher in creative fluency. It has been suggested (Fu et al., 1983) that utilizing parents and children from a broad range of

socioeconomic classes is needed to clarify the relationship of parenting behaviors and preschoolers' creativity. Sex differences in original thinking, which only appear infrequently in the literature, may become evident among preschool children from more diverse backgrounds.

The purpose of this study is to investigate preschool children's original problem solving abilities and mothers' childrearing attitudes. Specifically, this study examined the relationships between children's original problem solving and SES, IQ, age, and mothers' childrearing attitudes.

Method

Subjects

The sample consisted of 60 (28 girls, 32 boys) preschool children (mean age=57 months; range= 48-67 months). Twenty-seven children were enrolled in a university laboratory school; 13 children were enrolled in a community college laboratory school; and 20 children attended a Head Start program in the same community. The children's IQ (extrapolated from the Information and Picture Completion subtests of the WPPSI) ranged from 60-155, with a mean IQ score of 116.

Parents were selected such that those who were currently students (thereby artificially depressing income) were omitted from the sample. Children's participation was dependent upon parental consent and the mothers' willingness to participate in the study. Although, parental participation was approximately 75% in the two lab school programs, only 50% of the parents of the Head Start children chose to participate.

Information regarding family and parental income, occupation, and education on each family was obtained. The families' annual income ranged from less than \$4,999 (15.0%) to over \$50,000 (8.3%). The mothers' education ranged from seventh grade to completion of graduate school at the doctoral level. Fathers' education and occupation were not used due to insufficient data.

Instruments

Original Thinking. Original problem solving was measured by the Multidimensional Stimulus Fluency Measure (MSFM) (Godwin, 1984; Moran, Sawyers, Fu, & Milgram, 1984). The MSFM consists of the instances, patterns meanings and, alternate uses tests. This study used the six item version that consists of two

items in each test.

The responses were scored as popular or original i.e., those given by more or less than five percent of the normative group, respectively. This form of scoring was developed by Wallach and Kogan (1965) and has been used by several researchers (Ward, 1968; Milgram & Milgram, 1976; Moran, Sawyers, Fu, & Milgram, in press). Repeat and bizarre answers were not coded. Construct validity of the MSFM was established based on the criteria that creativity is distinct from intelligence, quantity is related to quality, evidence of a response hierarchy such that popular responses precede original responses, and interitem correlations (Godwin, 1984). Test-retest reliability, $r=.54$, $p<.01$, has been established by Moore and Sawyers (1984). In addition, Godwin demonstrated interscorer reliability of .98 using standard scoring instructions and protocols.

Parental Attitudes. Strom's (1982) Parent as a Teacher Inventory (PAAT) was used to assess parental childrearing attitudes. The PAAT (Strom, 1982) consists of 50 statements which measures parents' expectations of, interactions with, and reactions to their children. Each statement is to be rated on a

four-point rating scale, ranging from "strong yes" to "strong no". Specifically, the PAAT assesses five subsets of parental childrearing attitudes:

- 1) Creativity--parents acceptance of functioning in their child and desire to encourage or suppress its development;
- 2) Frustration--parental childrearing frustration and focus of the frustration;
- 3) Control--parental feelings about control and the extent to which parental control of child behavior is deemed necessary;
- 4) Play--parental understanding of play and its influence on child development;
- 5) Teaching-Learning--parents' perception of their ability to facilitate the teaching-learning process for their child (Strom, 1982).

Internal reliability is reported to range from .70 to .88. Validity of the instrument was established by matching the parent's expressed feelings with observed behavior. Panetta (1980) found an 85% agreement between parental responses on the PAAT and actual behavior with low income families, although Strom and

Johnson (1978) found a slightly lower level of consistency (66%) with families representing three separate SES levels.

Intelligence. IQ scores were extrapolated from the Information and Picture Completion subsets of the Wechsler Preschool and Primary Scale of Intelligence using the procedure of Tellgren and Briggs (1967). Silverstein (1970) reported a relatively high correlation, $r=.86$ of this subsets with full scale IQ.

Procedure

The ideational fluency tasks were individually administered to each child, by four trained examiners, at their child's preschool. All ideational fluency tasks were administered in one session with no set time limit and the IQ test was administered during a second session at least one week after the first session.

Each mother was interviewed individually by an interviewer at her home or at the child's school. During the interview the family's demographic information and the mother's responses to the PAAT were collected. In administering the PAAT, the mother was given a card describing the possible responses (Strong Yes, Yes, No, Strong No). As the interviewer read each

statement to the mother, the mother was asked to respond to each statement in reference to the responses printed on the card.

Results

Multiple regression was used to determine the effect of nine independent variables (five PAAT subsets, sex, age, IQ, and family income) on preschoolers' original thinking. Separate regression analyses were performed on the two original thinking scores; original, and fluency. The regression for fluency resulted in a nonsignificant relationship. A multiple R of .45 ($R^2 = .20$) was found between the original scores and the nine independent variables. Age was the only variable that contributed significantly, $r = .35$, $p < .05$, to the original scores (see Table 1). Specifically, older children gave more original responses than younger children.

Insert Table 1 About Here

Pearson product moment correlations showed a significant relationship between family income and IQ, $r = .54$, $p < .0001$. Children from higher income families

scored significantly higher than those from lower income families. As a result of this significant relationship, multiple regression was done to determine the effect the above independent variables (less IQ) have on IQ. A multiple R of .68 ($R^2 = .48$) was found. Income was found to contribute significantly ($p < .0001$) to IQ (see Table 2).

Insert Table 2 About Here

Discussion

The purpose of this study was to assess what effects mothers' childrearing attitudes, family income, and the age, sex, and IQ of the child have on original thinking in preschoolers. Age was the only variable found to be a significant predictor of the children's original scores. Specifically, older children gave more original responses than younger children. However, the other independent variables were not found to be significantly related to any of the original thinking scores.

The age effect is probably due to the verbal nature of the original thinking tasks. Older preschool

children may be more verbally fluent thus providing more responses, which in turn may generate more original responses. As has been demonstrated by previous studies, by giving more responses, it is possible to establish a response hierarchy and that the quality (or original) of responses is related to the quantity (fluency) of responses given (Moran, Milgram, Sawyers, & Fu, 1983a, 1983b; Sawyers, Moran, Fu & Milgram, 1983)

The lack of significant relationships between original thinking and the other independent variables warrants some discussion. In a way, these results are congruent with previous studies on parental childrearing attitudes and original thinking in preschoolers, which either did not find significant relationships or have inconclusive results. One of the reasons cited for the lack of significant findings in previous studies was the homogeneity of the samples. Although the mothers in the present sample were from a wide range of income and educational backgrounds, this study still did not find a relationship between parental childrearing attitudes and original thinking in preschool children.

It is possible that the present study's definition of SES, using family income has some limitations in defining real SES differences. In Fu's (1977) study which reported social class differences in creative fluency, father's occupation was used to define SES.

Furthermore, PAAT may not be sensitive enough to tap the subtle differences in childrearing attitudes, which may have an effect on children's original thinking. It is possible that the expressed attitudes assessed by the PAAT may not be relevant to original thinking abilities as assessed by the MSFM. Of particular interest, is the lack of significant relationships between the original thinking scores and the creativity subset. These findings appear to question the construct validity of this instrument in regard to mothers' attitudes on creativity.

An alternative explanation could be that the MSFM is not a sensitive measure of young children's original thinking as with other measures of preschool children in general. Internal consistencies are usually rather low. This is a reflection of the difficulty in measuring young children's various functioning. For example, the only reported data on MSFM internal

consistency over time is $r=.54$, $p<.01$ (Moore & Sawyers, 1984). This correlation was based on test-retest reliability of children over a three year period. Test-retest reliability over a shorter time span has not been established. If such information is available a better evaluation of the MSEM as a valid and reliable measure of young children's original thinking can then be made.

Another explanation may be that childrearing attitudes may vary as a function of development. Some previous studies with older children using the PARI have demonstrated relationships between parental childrearing attitudes and children's original thinking (Dewing & Taft, 1973; Maw & Maw, 1966; Nichols, 1967). This seems to suggest that parental childrearing attitudes that could make a difference in children's original thinking, do not become evident until later childhood years.

The data analyses on the original scores and IQ indicates that variables that are related to IQ are not related to original thinking. Whereas, the independent variables accounted for only 20% of the variance for original scores, these same variables (less IQ)

accounted for 48% of the variance for IQ. Correlation analyses shows that income, PAAT creative, PAAT control, PAAT play, and PAAT teaching-learning subsets were all related to IQ but not creativity scores. It appears that these variables, which are related to IQ, are not appropriate for predicting original thinking.

Further studies need to be done to clarify the relationship between original thinking in young children and parental childrearing patterns. The authors would like to propose that in addition to assessing attitudes of childrearing, observations of parent-child interaction be used in determining parents' influence on young children's original thinking.

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Table 1

Summary Report from Multiple Regression on Original Scores

Multiple <u>R</u>	.45		
<u>R</u> ²	.20		
Standard Error	8.57		
Independent Variables	<u>B</u>	<u>SEB</u>	<u>p</u>
Age	.69	.25	.01
Sex	-1.46	2.39	.54
Income	.09	.46	.85
IQ	.07	.07	.32
PAAT Creative	-.03	.51	.96
PAAT Frustration	.64	.41	.13
PAAT Control	-.11	.42	.80
PAAT Play	.18	.48	.70
PAAT Teach	-.11	.29	.70

Table 2

Summary Report from Multiple Regression on IQ

Multiple <u>R</u>	.68		
<u>R</u> ²	.47		
Standard Error	17.39		
Independent Variable	<u>B</u>	<u>SEB</u>	<u>p</u>
Age	3.61	4.69	.45
Sex	4.04	4.74	.40
Income	15.11	3.13	.01
PAAT Creative	.78	1.02	.45
PAAT Frustration	-1.23	.84	.15
PAAT Control	-.12	.82	.89
PAAT Play	1.37	.95	.16
PAAT Teach	.61	.57	.29

APPENDIX A
Literature Review

ORIGINAL THINKING IN PRESCHOOL CHILDREN
AND PARENTAL CHILDREARING ATTITUDES:

REVIEW OF LITERATURE

Past studies have investigated the relationship between various family factors and the development of original thinking in children. The factors that have been studied are the sex of the child, family's socioeconomic status, parent's occupation, the parent's interests and hobbies. These studies have examined the influence of socialization, such as parental childrearing attitudes and behavior on original thinking in children. However, the findings have been inconsistent and inconclusive.

Original Thinking

Creativity is in most cases measured in terms of ideational fluency, and particular they are measures of originality, flexibility, elaboration and fluency. Furthermore, measures of parental characteristics are quite diverse across the studies, which have also contributed to the difficulty of making comparisons and drawing conclusions.

Creativity has been defined as the generation

of unusual, high quality, and socially useful products. Moran, Milgram, Sawyers, and Fu (1983a) have also defined original ideas in their studies, as those which are "statistically unusual and of high quality". They claim that original problem solving rather than "real creativity" is what is being assessed in studies using ideational fluency. Many studies have used Wallach and Kogan's (1965) model of creativity in investigating original thinking in children. This model, which is based on work done by Guilford (1956, 1967) and Mednick (1962), proposes that; (1) creativity exists in a nonevaluative environment; (2) creativity is distinct from intelligence; (3) ideational fluency is the best single measure of divergent thinking; (4) the quantity of the responses given is related to the quality of the responses; and (5) a response hierarchy exists where popular responses are usually given preceding original responses.

Special considerations have been noted when measuring original thinking in young children. Moran, Milgram, Sawyers, & Fu (1983b) and Fu, Kelso and Moran (in press) demonstrated improved

performance among preschoolers when the patterns meanings tasks were presented in three-dimensional form with visual and haptic exploration. Sawyers, Moran, Fu and Milgram (1983) reported that stimulus items that were more familiar to preschoolers in the uses tasks elicited more responses. Thus, facilitating the tapping of the response heirarchy which increase the discrimination between high and low creative children. Based on these studies the Multidimensional Stimulus Fluency Measure (MSFM) was developed to measure original thinking in young children. Godwin (1984) demonstrated that construct validity of this instrument based on criteria described in Wallach and Kogan's model. In addition, interscore reliability of .98 using standard scoring instructions and cumulative scoring protocols was demonstrated (Godwin, 1984).

Parental Childrearing Attitudes

The Parental Attitude Research Instrument (PARI) (Schaeffer & Bell, 1958) has often been used to assess the effect of parent childrearing attitudes on children's original problem solving. Studies using the PARI have found that among

12-year-old girls and boys with high creative potential and high creative performance, the mothers were more equalitarian (Dewing & Taft, 1973). Maw and Maw (1966) found similar results. Fathers of high curiosity fifth grade boys were more equalitarian than those of low curiosity children. Mothers of girls with high creative potential and performance were less rejecting of outside influences. They have found that the fathers of high curiosity boys as compared to fathers of low curiosity boys scored significantly lower on the following: fostering dependency, seclusiveness, harsh punishment, ascendancy, and suppression of sexuality. Mothers of high curiosity boys scored lower on fostering dependency, excluding outside influences and intrusiveness.

Authoritarian attitudes were negatively related to creativity in high school students (Nichols, 1964). Consistent with Nichols' study, Bayard-De-Volo and Feibert (1977) also found parental authoritarianism as measured by the California F Scale, negatively correlated with preschoolers' creativity scores. However, Fu,

Moran, Sawyers, and Milgram (1983) found no significant relationship between parents' scores on Authoritarian-Control, Hostility-Rejection, or Democratic Attitudes, as measured by the PARI, and original thinking among preschool children. Similarly, Nuttall (1970) found no relationship between the PARI and creativity in sixth graders. Several factors may contribute to the lack of significant relationships between parental childrearing attitudes as measured by the PARI and children's creativity. Some of the factors that have been suggested are the homogeneity of the samples (Fu et al., 1983; Nichols, 1964; Nuttall, 1970), small sample sizes (Fu et al., 1983; Maw & Maw, 1966) or the parental attitudes as reported do not accurately reflect parental behavior (Fu et al., 1983).

Schwartz (1976) failed to find any relationship between creativity in nursery school children and parental authoritarianism measured by the Authoritarian Family Ideology Scale. College students' perception of parental restrictiveness was associated with diminished creative responses

(Parrish and Eads, 1977). However, fourth graders' perception of parental acceptance and permissiveness was not predictive of the children's creativity (Silverburg, 1971).

It has been assumed that parents' childrearing attitudes and behaviors that promote independence and autonomy would foster the development of higher creative abilities in children. Domino's (1979) study has lended support to this assumption. He found that mothers of creative 9- and 11-year-old children allowed their children greater independence and flexiblility over the control group mothers. Also supporting this assumption was Weisburg and Springer's (1961) finding that a family's lack of dependency on other family members, and allowing expressiveness without domination were related to creative behavior in fourth grade students. Dreyer and Wells (1966) reported that mothers of high creative preschool children placed less emphasis on companionship. They have proposed the relationship between independence and autonomous attitudes of parents and creativity in children. Conversely, sixth grade children's perception of parent

attitudes of autonomy was negatively related to teachers' ratings of children's creativity (Nuttall, 1970). No significant difference was found between high and low creative preschoolers and autonomy granting by the parents (Dreyer & Wells, 1966).

Overall, the results of these studies suggest that parental childrearing attitudes that promote independence and autonomy may, to some degree, foster the development of creative behavior. However, the inconsistency of these findings also indicate the possibility that factors other than childrearing are involved in the development of creative behaviors.

Domino (1979) and Weisburg and Springer (1961) both found that the parents' acceptance of children's regressive behavior was positively related to creativity in children between fourth and sixth grade. They have suggested that allowing children to exhibit regressive behavior may enable the children to confront a problem more directly and to experiment with different ways to be used in solving the problem.

Some of the other maternal attitudes that are

related to preschool children's creativity are: lesser concern with their place in the community, promoting emotional security (Dreyer & Wells, 1966), and also allowing children to be more involved in creative activities (Domino, 1979). In addition, Domino has reported that mothers of more creative children tend to place less value on creativity; less encouragement for participation in cultural activities; and less emphasis on the positive treatment of the child. According to Domino, these findings seem to suggest that parents of creative children are "less concerned" with providing children with creative opportunities and "less concerned" with providing affectional rewards for appropriate behavior.

Home Environment and Other Family Factors

Ellinger (1965) had identified several home factors that are related to creative thinking in fourth grade children. For instance, families of high creative children were more inclined to involve the children in family activities, provided more intellectual stimulation, went to the library more often, read more to the children; had more books,

magazines, and reference materials in the home. He also found that the frequency and use of coercive discipline was negatively related to creative thinking.

Various non-childrearing parental characteristics have been found to be related to creativity in children. High role tension in fathers (Radeloff, 1979) and in mothers (Dreyer & Wells, 1966) were found in parents of creative children. In addition, parents of creative preschoolers were reported to be less in agreement on domestic values (Dreyer & Wells, 1966). Weisburg and Springer (1961) found that openness of exchange, and active interaction between parents with well defined adult personalities facilitated creative behavior in their children. This finding seems to suggest that parents of creative children are themselves more independent.

Mothers that were rated as more abstract on a concrete-abstract conceptual continuum provide their preschool children with play environments that offered flexibility, exploration, and autonomy. These children exhibited more complex and varied

choice behaviors while engaging in a laboratory play task (Bishop & Chace, 1971). Complex mothers had girls with high creative potential and high creative performance, however this relationship was not found with their sons (Dewing & Taft, 1973).

Some studies have shown that parent's involvement in their own creative activities is related to their children's creative abilities. Mothers of creative boys reported greater personal creative involvement and these mothers had more recognition for their creative involvement (Domino, 1979). Dewing and Taft (1973) found mothers' unusual interests and hobbies were related to their daughters' creativity.

Dewing and Taft (1973) reported that mothers' level of education was related to creativity in 12-year-old children. They also found that girls of working mothers had greater creative potential, but this relationship was not found in boys (Dewing & Taft, 1973). Aldous (1973) reported no significant difference in creativity in third grade children between working and nonworking mothers.

Socioeconomic Status

Studies reporting on social class and its relationship with childrens' creative thinking have repeatedly found that middle class children scored higher than lower class children on creativity tasks (Aldous, 1973; Fu, 1977; McDaniel, 1974). This SES difference is more pronounced in boys than in girls (Lichtenwalner & Maxwell, 1969). Although Milgram (1981) did not find a significant SES difference in the original problem solving scores of children grades 2-8, in lenient tasks measures; she did find a significant SES effect in unusual responses given on the stringent measures. With intelligence controlled, middle class children generated more unusual responses on the stringent tasks than lower class children, implying that the environment of lower class children may present a disadvantage in the development of original thinking.

The above review of relevant literature indicates that conclusive and inconclusive results are associated with the studies that investigated the relationships between creativity in children and patterns of childrearing, SES and various home and

family factors. It also shows that most of the studies involved children of elementary school age or older. There seems to be a need to further investigate the above mentioned factors and their relationships to creativity among preschool children from diverse SES backgrounds.

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APPENDIX B

Parent Letters and Consent Forms



COLLEGE OF HUMAN RESOURCES

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061 - 8299

DEPARTMENT OF FAMILY AND CHILD DEVELOPMENT (703) 961-4794 or 4795

Dear

We are contacting you in regard to a study concerning young children's original problem solving skills and mothers' childrearing attitudes. This study will help to provide a better understanding of the relationship between mother's childrearing attitudes and children's development. We would like to ask you and your child to participate in this study. You and your child will be asked to respond to a number of questions, that have no right or wrong answers.

Your child will be asked to participate in a number of activities including a short IQ test, with a researcher individually. These activities will be presented in a "game" format and will last about 20 minutes. Most children seem to enjoy engaging in this kind of study. Your child's responses will be kept strictly confidential. We respect the right of the child to withdraw from the project at any time. No child will be forced to participate if he or she does not want to.

An interviewer will ask you some questions concerning your childrearing attitudes. This will be done at your convenience, either at your home or at your child's preschool. The interview will be conducted in a way that will assure complete privacy and confidentiality. The identity of those who participated will be held confidential in all reports of this study.

We hope you will consent to participation in this study. We need your help and cooperation to make this study a success. If you are willing to help us, please fill out the attached card and return it to your child's teacher by Friday, April 13. We will be contacting you in the near future. We will be glad to share our results with you upon completion of the study. If you have any questions or need information please contact me at the Virginia Tech Child Development Laboratory School. (961-6148).

Yours Sincerely,

Lisa Ryan

Dr. Victoria R. Fu

Consent Form

I acknowledge that I have been informed of the nature of this study and I understand that I may withdraw from the study at any time. It is understood that the information will be kept confidential. I am willing to participate in this study.

Name of Child: _____

Name of mother or guardian: _____

Signature of mother or guardian: _____

Address: _____

Telephone Number: _____

Name of child's preschool: _____

_____ Yes, I would like the results of this study.

Times I'm available for an interview.

_____ mornings

_____ afternoons

_____ evenings

Please circle most convenient days.

M Tu W Th F Sat.

APPENDIX C

Family Background Information

APPENDIX D

Multidimensional Stimulus Fluency Measure

"FCD: Child Development Area"

VPI & SU: Creativity Research Group

"Now today we have a game called "What can you use it for?" The first thing we're going to play with will be a pencil. (Experimenter hands pencil to child). I want you to tell me all the things you can think of that you can do with a pencil, or play with it, or make with it. What can you use a pencil for?" (Let child try to generate responses). Then reply with "Yes, that's fine. Some other things you could use a pencil for are as a flagpole, to dig in the dirt, or you could use a pencil as a mast in a toy boat. Probably there are a lot of other things too." (The examiner should vary answers so as to give all of these which the child did not give). Then proceed by saying "You see that there are all kinds of different answers in this game. Do you know how to play?" If the child indicates understanding of the game then proceed with test items. If the child does not understand, repeat procedure from beginning. If child still doesn't understand, terminate. The examiner should then say: "Now remember I will name something and you are supposed to tell me as many uses for it that you can think of. Take as long as you want. Let's try this one." (No help should be given to the child on test items).

What can you use a BOX for?

What can you use PAPER for?

Problems may arise when children ask additional questions. For example, if the child asks "What size box?" the experimenter should reply with a very neutral answer such as "Whatever size you think of." All clarifications of the test questions should be of non-committal type.

When the child stops responding ask "What else can you think of" or until child indicates he or she has no more.

Instances

This task is designed to generate numerous responses from the child. The task should be explained to the child as follows:

"We're going to play a game now called 'All the things you can think of'. I might say 'things that make noise' and it will be your job to think of as many things as you can that are like what I tell you. Now you name all the things you can think of that make noise. (Let the child try to generate responses). Then reply with 'Yes, those are fine. Some other kinds of things might be a horn, an airplane, bells, a hairdryer, or people shouting.'" (The experimenter should vary his/her answers so as to name ones not mentioned by the child). Then proceed with saying "So we see that there are all kinds of different answers in this game. Do you see how we play?" (If the child indicates understanding of the game then proceed with the test items). The experimenter should then say "Now remember, I will name something and you are supposed to name as many things as you can think of that are like what I've said. OK, let's go."

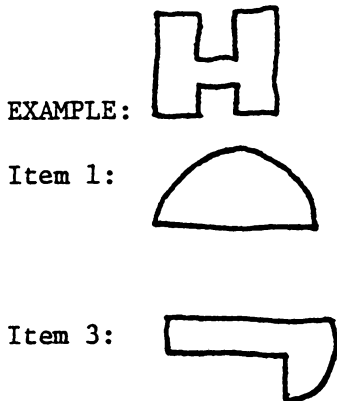
1. Name all the things you can think of that are red.
2. Name all the things you can think of that are round.

FCD: Child Development Area

VPI & SU: Creativity Research Groups

"In this game I'm going to show you some pieces. After looking at each one I want you to tell me all of the things you think each piece could be. Here is an example--you can turn it any way you'd like to." (Give the example block to the child. "What could this be?" (Let the child respond). "Yes, those are fine. Some other things I was thinking of were a bridge, a bed, a building block, a chair and there are probably a lot of other things too." (The experimenter should vary answers so as to give different ones than the child but to include all of the above. If the child indicates understanding of the game then proceed with the tasks).

"Now remember I will give you a piece and you are supposed to name all the things it could be. Take as long as you want. Try this one."



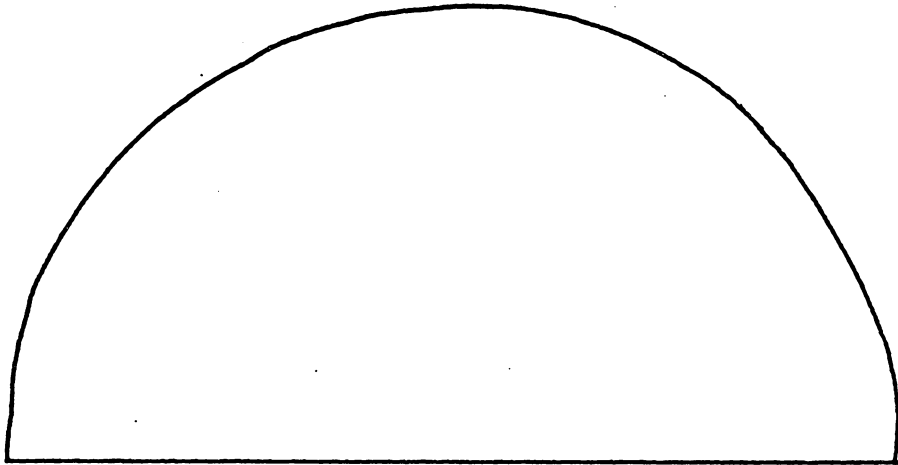
TIME FROM PRESENTATION OF FIRST ITEM TO LAST RESPONSE ON FINAL TEST ITEM.

When a child stops responding ask "What else can you think of" until child indicates he or she has no more responses.

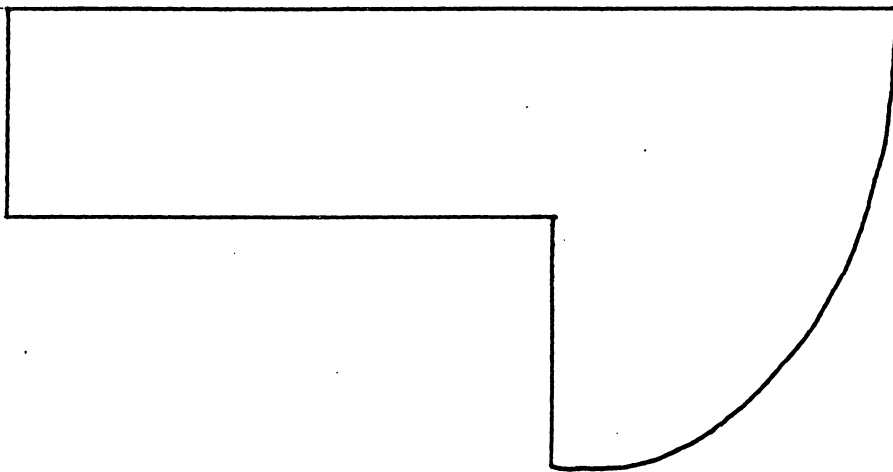
If child begins to play with test materials in a manner which might damage them say "Please play carefully with the piece, they were made special for these games and we don't want them to break."

DRAWINGS OF THREE DIMENSIONAL STIMULUS ITEMS

Pattern 1



Pattern 2



APPENDIX E

Parent As A Teacher Inventory

PARENT AS A TEACHER INVENTORY

Directions:

You will be reading some statements on feelings about your child. This is not a test. We are asking that you express your feelings about your child. For each statement, circle only one answer. If there is no doubt in your mind about the statement, circle either STRONG YES or STRONG NO. Otherwise, circle either YES or NO. Continue until you have answered all 50 statements. Take your time.

1. I get tired of all the questions my child asks.

STRONG YES YES NO STRONG NO

2. My child should be able to make noise during play.

STRONG YES YES NO STRONG NO

3. It is all right for my child to disagree with me.

STRONG YES YES NO STRONG NO

4. My child needs to play with me.

STRONG YES YES NO STRONG NO

5. Much of my child's learning will take place before he or she enters school.

STRONG YES YES NO STRONG NO

6. I like my child to make up stories.

STRONG YES YES NO STRONG NO

7. It gets on my nerves when my child keeps asking me to watch him or her play.

STRONG YES YES NO STRONG NO

8. I want my child to say more than I do when we talk.

STRONG YES YES NO STRONG NO

9. Playing with my child makes me feel restless.

STRONG YES YES NO STRONG NO

10. It is hard for me to tell when my child has learned something.

STRONG YES YES NO STRONG NO

11. When my child doesn't know an answer, I ask the child to guess.

STRONG YES YES NO STRONG NO

12. I get tired of all the fears that my child talks about.

STRONG YES YES NO STRONG NO

13. There are some things I just don't want my child to talk about.

STRONG YES YES NO STRONG NO

14. If I spend a lot of time playing with my child, he or she will disobey me more often.

STRONG YES YES NO STRONG NO

15. It is all right for my child to have a make-believe friend.

STRONG YES YES NO STRONG NO

16. I want my child to play with toys made for boys and toys made for girls.

STRONG YES YES NO STRONG NO

17. My child bothers me with questions when I am busy.

STRONG YES YES NO STRONG NO

18. I like my child to be quiet when adults are talking.

STRONG YES YES NO STRONG NO

19. I feel able to choose new toys for my child.

STRONG YES YES NO STRONG NO

20. It is difficult for me to think of things to say to my child during play.

STRONG YES YES NO STRONG NO

21. When my child plays with toys, the pretending seems foolish.
- STRONG YES YES NO STRONG NO
22. My child is punished for fighting during play.
- STRONG YES YES NO STRONG NO
23. While we play, my child should be the person in control.
- STRONG YES YES NO STRONG NO
24. Playing with my child improves the child's behavior.
- STRONG YES YES NO STRONG NO
25. When I play with my child I feel the need to talk like a child.
- STRONG YES YES NO STRONG NO
26. I want my child to have all of his or her questions answered.
- STRONG YES YES NO STRONG NO
27. It's all right for my child to get dirty while at play.
- STRONG YES YES NO STRONG NO
28. When at play with my child, I prefer games that have rules rather than the make-believe kind of play.
- STRONG YES YES NO STRONG NO
29. My child learns new words when we play.
- STRONG YES YES NO STRONG NO
30. I feel able to give my child the proper preschool experience at home.
- STRONG YES YES NO STRONG NO
31. I get upset when my child tries to solve a simple problem in the wrong way.
- STRONG YES YES NO STRONG NO

32. It's okay for my child to interrupt me when we play.

STRONG YES YES NO STRONG NO

33. I feel play must be stopped when my child becomes angry at a playmate.

STRONG YES YES NO STRONG NO

34. I try to praise my child a lot when we play.

STRONG YES YES NO STRONG NO

35. More of my child's personality learning at this age takes place by watching people and things rather than by being told.

STRONG YES YES NO STRONG NO

36. It is all right for my child to spend a lot of time playing alone.

STRONG YES YES NO STRONG NO

37. While at play my child can take out as many toys as he or she wishes.

STRONG YES YES NO STRONG NO

38. I provide chances for my child to make up his or her own mind about a lot of things.

STRONG YES YES NO STRONG NO

39. It is difficult for me to stay interested when playing with my child.

STRONG YES YES NO STRONG NO

40. I scold my child when he or she doesn't learn.

STRONG YES YES NO STRONG NO

41. My child wants to play too long at one time.

STRONG YES YES NO STRONG NO

42. When my child shows off I ignore it.

STRONG YES YES NO STRONG NO

43. I feel unhappy when I don't know an answer to my child's questions.

STRONG YES YES NO STRONG NO

44. I imitate my child's speech when we play so that the child understands.

STRONG YES YES NO STRONG NO

45. It is easy for me to use toys when teaching my child.

STRONG YES YES NO STRONG NO

46. I seldom tell my child his or her work is good or bad so that my child can be the judge.

STRONG YES YES NO STRONG NO

47. I want my child to put the toys away before going to bed.

STRONG YES YES NO STRONG NO

48. It's all right for my child to have secrets from me.

STRONG YES YES NO STRONG NO

49. My child learns by playing with other children.

STRONG YES YES NO STRONG NO

50. If we play whenever my child wants to, not much learning will take place.

STRONG YES YES NO STRONG NO

APPENDIX F
Supplementary Tables

Table 3

Summary Report from Multiple Regression on Fluency Scores

Multiple <u>R</u>	.37		
<u>R</u> ²	.14		
Standard Error	17.09		
Independent Variables	<u>B</u>	<u>SEB</u>	<u>p</u>
Age	.95	.50	.06
Sex	-4.22	4.76	.38
Income	.82	.92	.38
IQ	.06	.13	.65
PAAT Creative	.19	1.03	.85
PAAT Frustration	-.11	.83	.90
PAAT Control	-.89	.84	.29
PAAT Play	.27	.95	.78
PAAT Teach	-.41	.57	.48

Table 4

Intercorrelations Between Original Thinking Scores and the
Independent Variables

Independent Variables	<u>Original Thinking</u>		
	Original	Fluency	IQ
PAAT Creative	.01	.03	.29*
PAAT Frustration	-.17	-.02	.06
PAAT Control	-.09	-.11	.28*
PAAT Play	.01	-.01	.27*
PAAT Teach	.04	-.03	.38**
Sex	-.02	-.06	.05
Age	.35**	.28*	.11
Income	.10	.12	.54***
IQ	.19	.11	--

*p < .05

**p < .01

***p < .001

Table 5

Mean and Standard Deviation Scores

Variable	<u>M</u>	<u>SD</u>
Original	17.34	8.83
Fluency	30.57	16.78
IQ	115.77	22.14
PAAT Creative	28.18	2.67
PAAT Frustration	29.12	2.98
PAAT Control	27.32	3.34
PAAT Play	31.12	2.74
PAAT Teach	31.68	4.97
Age	56.75	4.86

Table 6

Intercorrelational Matrix Between Variables in the Multiple Regression Analysis

	IQ	Age	Income	Sex	Original	Fluency	PAAT Creative	PAAT Frustration	PAAT Control	Play
IQ	--									
Age	.108	--								
Income	.542	.141	--							
Sex	.049	.145	.032	--						
Original	.186	.352	.099	-.017	--					
Fluency	.112	.283	.132	-.068	.903	--				
PAAT Creative	.286	-.008	.204	-.278	.013	.022	--			
PAAT Frustration	.056	.107	.214	.030	-.174	-.016	.117	--		
PAAT Control	.279	-.092	.495	-.006	-.088	-.114	.244	.349	--	
PAAT Play	.271	-.008	.140	-.041	.013	-.008	.250	.246	.282	--
PAAT Teach	.375	.071	.198	-.167	.035	-.028	.504	.099	.218	.421

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ORIGINAL THINKING IN PRESCHOOL CHILDREN
AND PARENTAL CHILDBEARING ATTITUDES

by

Alice Mahood Ryan

(Abstract)

The purpose of this study was to assess what effects mothers' childrearing attitudes, family income, and the age, sex, and IQ of the child have on original thinking in preschoolers. Sixty preschool children from diverse family backgrounds, were administered the Multidimensional Stimulus Fluency Measure to assess original thinking, and a short version of the WPPSI was administered to assess IQ. The children's mothers completed the Parent as a Teacher Inventory during an interview to assess their parental childrearing attitudes in the areas of creativity, childrearing frustration, control, play, and teaching-learning. Multiple regression was used to determine the effect of nine independent variables on preschoolers' original thinking scores. No significant relationships were found with the exception of age contributing significantly to original scores. A multiple regression used to determine the effect of the

independent variables (less IQ) have on IQ, found income to contribute significantly to IQ. These findings suggest that variables that are related to IQ are not appropriate for predicting original thinking in preschool children.