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ABSTRACT

This research report is based on a study designed to explicitly test Sigel's "Distancing Hypothesis" by examining the relationship between a cluster of seven maternal behaviors related to "distancing" and representation in a total of 60, 3- and 4-year-old boys. The boys were administered three tasks (in their nursery school) which measured representational skills, and later, with their mothers, were observed interacting in a university laboratory setting. A significant relationship was found between certain maternal teaching strategies and influence techniques coded in the laboratory session and children's performance on the representational task. It is suggested that parental use of communication styles which restrict a child's attention to the immediate physical and concrete present may discourage the child from exercising his symbolic capacities in problem solving situations which require their utilization. (Author/GO)

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The Relationship Between Maternal Behavior
And Representation in Young Children

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Paper presented at the biennial meeting of the Society for Research in Child
Development Denver, Colorado April, 1975

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Abstract

Sixty 3- and 4-year-old boys were administered three tasks measuring representational skills in their nursery schools. The boys and their mothers were later observed interacting in a university laboratory setting. A significant relationship was found between certain maternal teaching strategies and influence techniques coded in the laboratory session and children's performance on the representational tasks ($p < .01$): It is suggested that parental use of communication styles which restrict a child's attention to the immediate physical and concrete present may discourage the child from exercising his symbolic capacities in problem solving situations which require their utilization.

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THE RELATIONSHIP BETWEEN MATERNAL BEHAVIOR
AND REPRESENTATION IN YOUNG CHILDREN

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In recent years there has been a proliferation of psychological studies focusing on the relationship between family variables and intellectual functioning in young children. However, within this domain of research the relationship between cognitively stimulating parental behaviors and the development of symbolic skills in preschool children has not been thoroughly investigated.

Sigel (1970, 1971a, 1971b) has proposed that the acquisition of representational competence - the ability to symbolize reality - is a function of certain psychosocial behaviors and events which serve to "distance" or separate the individual from the immediate temporal and spatial present. More specifically he has suggested that parents may assume a critical "distancing" role during the child's life (two to four years of age) when he is progressing from the sensorimotor period to the preoperational stage of intellectual development. It is during this time that the child becomes capable of symbolic thought (Piaget, 1962).

A reinterpretation of findings generated from parent-child studies investigating social class differences in parental teaching strategies and control techniques (e.g. Hess & Shipman, 1965; Rice, 1970; Rossman, 1973) provides indirect support for Sigel's "Distancing" Hypothesis. In addition to parent-child research, data yielded from the assessment of a number of experimental home and preschool intervention programs indicate that teaching techniques which can be conceptualized in terms of "distancing" have had significant effects on children's thinking processes (Gray & Klaus, 1965; Blank, 1968; Blank & Solomon, 1969; Levenstein, 1970, 1971; Sigel, Secrist, Sorce & Priebe, 1973). In general the most effective and successful mothers and teachers appear to initially orient

children to future task goals and to qualify requests aimed at redirecting children's behavior. (Furthermore) they encourage children to recall past events, to describe their future behaviors, to infer cause and effect relationships, to develop their imagination, and to interact with a diversity of representational modes.

The present research report is based on a study designed to explicitly test Sigel's "Distancing Hypothesis" by examining the relationship between a cluster of seven maternal behaviors related to "distancing" and representation in three and four year old boys. In an effort to pinpoint specific salient aspects of the environment which transcend social class and race, the sample studied was restricted to a white middle-class population. The research was conducted in two parts. In the first phase 60 middle-class white boys between the ages of 3 years 3 months and 4 years 6 months were assessed for their representational competence in their nursery schools. Three tasks were devised as measures of representation: a Physical Anticipation Task, a Social Anticipation Task and a Spatial Memory Task. In the Physical Anticipation Task subjects were presented with a hypothetical situation by the experimenter and asked to predict the consequence of possible actions upon specific three-dimensional inanimate objects. The Social Anticipation Task was designed to assess the young child's ability to anticipate the appropriate feelings, attitudes, or actions of a child or his mother which would be elicited by certain common incidents arising in the home setting. These situations were depicted in 2-dimensional form. In the Spatial Memory Task, subjects were required to recall the location of familiar objects hidden by the experimenter in various rooms of a dollhouse. These three tests were individually administered to each subject and combined to yield a composite representational index score.

In the second phase of the study the children and their mothers were observed in a structured university laboratory setting. A set of 42 predetermined maternal behaviors were coded by an observer behind a one-way mirror while the mothers taught their children a block-sorting task (which was adopted from Hess and Shipman's study) and engaged in a story-reading session with their children.

In the block-sorting task, mothers were expected to teach their children how to physically sort a group of blocks according to two criteria and to verbalize these relevant classification criteria. In the story-reading task, each mother was asked to "go through the book, The Little Red Bicycle" as she would go through it at home. As a complement to the block task, this latter task was chosen to provide a less structured, more naturalistic setting within which mother-child interactions could take place.

From a complex inventory of behavioral categories which were defined according to function, i.e. the inferred intended outcome of the behavior, a subset of five behaviors were selected as the best exemplifiers of maternal distancing. The following behaviors constituted the five distancing categories:

- (1) RECALL - a teaching strategy aimed at the reconstruction of past or association to spatially-distant present events or happenings
- (2) ANTICIPATION - a teaching strategy aimed at predicting, planning, hypothesizing a future event, occurrence, or feeling emotion, attitude; this also includes orienting the child to task goal in terms of what is to be done
- (3) ROLE-TAKING - a teaching strategy aimed at pretend behavior; this may involve the use of inanimate objects "as if" they are something else or person or animal dramatization
- (4) CLASSIFICATION - VERBAL - a teaching strategy aimed at the verbalization of the block-sorting principle or any relevant grouping criteria
- (5) PICTORIAL SCENE - a teaching strategy aimed at picture comprehension, illustration of story content through two-dimensional representation; the focus is on the activity or event as

a whole depicted in the picture rather than the recognition of individual objects, people, or animals represented in the picture.

Two important behaviors cited as antithetical to "distancing" were (6) LABELLING - a teaching strategy aimed at the recognition, identification, or description of a single animate or inanimate object based on the physical attributes or perceptually salient cues - and (7) UNQUALIFIED POWER ASSERTION - a control strategy in the form of verbal command issued without explanation.

It was expected that the above cluster of seven maternal behaviors would be significantly related to children's overall representational competence as well as their performance on each of the tasks measuring representation. In addition it was hypothesized that within the above group of maternal behaviors RECALL, ANTICIPATION, ROLE-TAKING, CLASSIFICATION-VERBAL and PICTORIAL SCENE would be positively related to children's representational competence. It was anticipated that LABELLING and UNQUALIFIED POWER ASSERTION would be negatively correlated with children's performance on the representational tasks.

The findings yielded from this investigation demonstrated that the cluster of seven maternal behaviors (five distancing and two anti-distancing) was significantly related to the overall battery of three representational tasks ($p < .01$). Forty-one percent of the variance in the composite representational index score was significantly accounted for by the set of seven maternal behaviors. In addition the cluster of seven maternal behaviors was significantly related to performance on each of the three tasks measuring representational competence. The seven maternal behaviors significantly accounted for 36 percent of the variance in performance on the Spatial Memory Task, 27 percent of the variance on the Social Anticipation Task and 25 percent of the variance on the Physical Anticipation Task (TABLE 1).

However, an examination of the zero-order correlations between maternal behavioral variables and child performance variables (TABLE 2) indicated that among the five maternal behaviors considered to be examples of distancing, only one was significantly positively correlated with children's performance. Maternal use of CLASSIFICATION-VERBAL behavior was positively associated with children's performance on the Spatial Memory Task ($p < .05$). The most striking relationships between mother and child variables involved LABELLING and UNQUALIFIED POWER ASSERTION, the two maternal behaviors which were hypothesized to be antithetical to distancing and therefore inhibitory in their effect on representation. Consistent with the investigator's expectations, these two maternal behaviors were significantly negatively related to children's scores on each of the three representational tasks as well as their overall performance score. It is apparent that the maternal behaviors antithetical to distancing were the most powerful predictors of children's representational competence.

The results of the research reported here - provide a clue as to particular parental behaviors which may stimulate or impede the use of representational skills in young children. A cluster of seven maternal behaviors related to distancing accounted for approximately 40% of the variance in children's overall representational scores. Nevertheless, major consideration should be given to the 60% of the variance which remains unexplained by the particular set of maternal behaviors. Two sets of explanations one which relates to theory and the other, to methodology, might be used to interpret this residual variance.

In regard to theory, the possibility exists that maternal behaviors unrelated to distancing assume greater importance in the development of representational competence in children. It may be that attentional techniques, maternal feedback and social/emotional variables are more significantly related to children's representational functioning than cognitive elements in the mother's behavior.

However, data obtained from the present study suggest that mothers of high and low representational children did not vary significantly in the degree to which they exhibited attention-recruiting techniques and positive feedback.

In terms of methodology it is possible that the artificiality of the laboratory situation may have served to mask the depth and breadth of maternal distancing behaviors manifested by these same mothers in the natural environment of the home. It is quite probable that the behaviors sampled in the laboratory do not constitute a comprehensive measure of distancing. Distancing behaviors may emanate from fathers and siblings as well. In addition the structure of the home environment itself - in terms of the systematic scheduling of events might encourage the child to develop representations of past and future happenings. Another factor which may have depressed the strength of the relationship between distancing and representation relates to the nature of the maternal categories coded. In the present study categories were defined in terms of function. No distinctions were made in terms of the form of linguistic behaviors (with the exception of the control category, UNQUALIFIED POWER ASSERTION). Therefore, if a mother was coded for exhibiting RECALL she could have herself recalled a previous event, commanded her child to do so, or asked her child to remember it. One might speculate that the mother who asks her child to verbalize a recalled event is placing greater distancing demands on her child than a mother who does the recalling herself. In the former case, the child is asked to actively respond; in the latter he may be only a passive recipient of the message.

A second major finding of the present research indicates that within the cluster of seven maternal behaviors related to distancing, the two behaviors antithetical to distancing (LABELLING and UNQUALIFIED POWER ASSERTION) were the most powerful predictors of representation in children. It is possible that the development of representational competence in children proceeds naturally

and universally and is neither facilitated nor impeded by behaviors positively related to distancing. However, in terms of representational performance, maternal use of behaviors which restrict the child's attention to the here and now, i.e. to his present behavior or to concrete, perceptually salient elements in the environment, may function to discourage him from capitalizing upon symbolic skills in problem solving situations which require their utilization.

It should be pointed out that the present investigation constitutes only a first attempt in terms of assessing the relationship between parental behaviors related to distancing and representational performance in young children. A thorough exploration of behaviors related to distancing in future research may shed more light on their role, vis-a-vis, the young child's cognitive functioning.

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TABLE 1

STRENGTH OF ASSOCIATIONS BETWEEN 7
MATERNAL BEHAVIORS AND CHILDREN'S
REPRESENTATIONAL PERFORMANCE

Dependent Variable	Square Multiple R	F	P - value
Physical Anticipation	.25	2.54	*
Social Anticipation	.27	2.71	**
Spatial Memory	.36	4.10	**
Composite (Sum) Total	.41	5.17	**

* $p < .05$ ** $p < .01$

TABLE 2:

FIRST ORDER CORRELATIONS BETWEEN MATERNAL BEHAVIORS AND CHILDREN'S PERFORMANCE ON REPRESENTATIONAL TASKS

TASK	Recall	Anticipation	Role-taking	Classification Verbal	Pictorial Scene	Labelling	Unqualified Power Assertion
Physical Anticipation	.14	.15	.06	.17	.05	-.30*	-.29*
Social Anticipation	.13	.04	-.04	.15	-.01	-.37**	-.30*
Spatial Memory	.19	.15	-.22	.26*	.22	-.29*	-.27*
Composite	.19	.15	-.09	.24	.11	-.39**	-.36**

* p < .05

** p < .01

Maternal Categories Related to Distancing

Positively Related:

Recall - a teaching strategy aimed at the reconstruction of past or association to spatially-distant present events or happenings.

Anticipation - a teaching strategy aimed at predicting, planning, hypothesizing a future event, occurrence, or feeling, emotion, attitude; this also includes orienting the child to task goal in terms of what is to be done.

Role-taking - a teaching strategy aimed at pretend behavior; this may involve the use of inanimate objects "as if" they are something else or person, or animal dramatization.

Classification-Verbal - a teaching strategy aimed at the verbalization of the block-sorting principle or any relevant grouping criteria.

Pictorial Scene - a teaching strategy aimed at picture comprehension, illustration of story content through two-dimensional representation.

Negatively Related:

Labelling - a teaching strategy aimed at the recognition, identification or description of a single animate or inanimate object based on its physical attributes or perceptually salient cues.

Unqualified Power Assertion - a control strategy in the form of a verbal command issued without explanation; this is aimed at redirecting behavior and is sometimes accompanied by physical restraint.