Observational research was conducted in homes with a wide socioeconomic range to identify the major factors of experience that affect the development of a child's abilities. Thirty children, aged 12 to 36 months, were observed in three aspects of their environment: Human (family and peers), Static Physical (home and neighborhood), and Range of Experience (situations and activities in child's regular life pattern). On standardized scales or scales devised for this study, children were rated as very well developed or very poorly developed with respect to social and nonsocial competency. Rating scales which assessed patterns and effects of maternal behavior showed that well-developed children can come from crowded or spacious homes and that limited use of resources can be found in both lower class and middle class homes. The quality rather than quantity of mother-child interaction was significant. After rating mothers on interaction, motivational factors implicit in the mother's behavior, and material resources available to and used by the child, five patterns of maternal behavior were described. These five prototypes were (1) the competent mother, (2) the "almost* mother, (3) the mother who is overwhelmed by life's circumstances, (4) the rigid, controlling mother, and (5) the smothering mother.
Environment Influences on the Development of Abilities

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The ultimate objective of the environmental investigation is to identify the major experiential factors which effect the development of the target abilities.

For heuristic purposes, and as a strategy toward achievement of this goal, we familiarized ourselves with the ecology of the home environment by observing 30 children ages 12 months to 36 months for one to one and a half hours on two occasions. The homes represented a wide socio-economic range - from very poor to upper-middle class. We are aware, however, that the very impoverished family as found in the rural South or Appalachia or at the other end of the continuum the somewhat rare "upper class" were not included in this sample.

We trained observers to focus on the mother-child interaction and to be sensitive to other aspects of the home environment - such as, material resources, and the child's uses of such resources, the range of the child's experiences and the physical environment.

Earlier random observations in homes had, to some degree, made us aware of some of the problems which arise when involved in observational research in homes.

The subject of "problems" related to mother-child observations in homes could, indeed, be the subject of another paper. Any of you who have done research in homes will be familiar with what Frank Pederson has called the "girdle on" phenomenon. That is, the mother who at 8:33 A.M. greets you at the door dressed in her basic black replete with pearls and girdle - make up on and hair coiffed, or the "first visit spotless
living room" phenomena. When there are five children and parents living in a four room apartment, one hardly gets a feeling of validity when faced with a spotless house at 9 AM. It is comforting to know that the situation changes after the second or third visit.

Male observers have another problem to contend with. What should the male observer do when, furiously recording as he follows mother and child from kitchen to bathroom, he is confronted with a policeman father who has just returned from night duty?

These early forays into homes were valuable because they exposed us to these issues and they aided us in making some best guesses as to where "pay-off" might be. Thus, when we started on our study of 30 homes and children we were thinking in terms of three aspects of the child's environment. Human, Static Physical, and the Range of Experience.

1. The Human included, mother, father, siblings, peers, relatives, etc.

2. The Static-Physical was essentially the geography of the neighborhood and the home, the density of occupancy and the natural resources within the home.

3. The Range of Experience meant to us the schedule characteristics of the child's life space. Those situations and activities he was exposed to - both in and out of his home such as visits to grocery stores or grandma's, reading sessions with mother. In terms, analogous to the nursery school this would be construed as the "hidden curriculum."

Examination of the 90 protocols led us to our first approximation of a Maternal Reaction Scale which will be described by Dr. LaCrosse.

We also did a preliminary analysis for heuristic purposes of the physical environment and material resources in the home. We looked at
the size of the home, the density of occupancy and the adult and child resources. The dwellings ranged from three-room public housing apartments to ten-room homes. The density of occupancy ranged from a crowded family of eight living in a three-bedroom apartment to a family of three living in ten spacious rooms.

The inventory of child used material resources proved to have less variability. That is, all children, no matter how poor, seem to have some toys to play with, were exposed to T.V. and some reading materials. What seemed to us to be more significant that a mere inventory or material resources was: 1) the child's use of these resources in the home, 2) the adult oriented resources in the home, and 3) the implicit value system underlying these elements of the environment.

We asked ourselves, what did this all mean? What if anything does a crowded home and limited use of resources have to do with the development of abilities in the young child? What, if anything, does a large home with obvious intellectual resources have to do with the development of abilities?

In an effort to make better sense of the observational data and in the absence of clearly defined dependent variables, we refocused the protocol analysis and looked at the children, then at the mothers. Children were rated as very-well developed or very-poorly developed with respect to social competency and non-social competency.

Adapting Dan Ogilvie's Social Competency Scale to the 1 1/2 to 3 year old, we rated the children on the following:
Ability to get the mother's attention

Ability to get M to meet needs, or use M as resource

The balance between domination and submission with mother, peers and siblings

Adult role playing

Then adapting the project's less developed ideas about non-social competence, we did our best at establishing criteria for judging non-social competency in these very young children. Children were rated on the basis of the following criteria:

- Language and Communication Skills
- Coordination
- Attention Span
- Understanding of Concept such as spatial relations, size, color
- Sense of humor
- Observer's impression of intelligence

The child's play was also looked at in terms of:

- Range of Interests
- Involvement vs. Purposelessness
- Activity vs. Passivity
- Resources and materials with which the child interacted

Although we were quite confident that for this age range, the mother was the salient environmental factor, we were less sure about what it was about the mother that was most important. The observational data gave us clues and we finally rated mothers according to this criteria:

- Age
Interests or occupations
Attitude toward subject
Ability to meet subjects needs
Frequency of interaction with child

(Quality of interaction was to be determined by the Mother-Child Interaction Scale)

Mother's attitude toward self
Acceptance of role as mother
Acceptance of life's circumstances
Restrictiveness vs. Freedom

Analyses of the ratings revealed that well-developed children at the age of 18-months to 30-months can come from crowded dwellings as well as spacious homes and that limited use of resources is not confined to the lower-class child but can be found in the middle-class child as well.

This heuristic analysis also revealed certain patterns of maternal behavior which intrigued us. For example, mothers of poorly-developed children are often restrictive and unsure of their role as mother.

Confident, competent mothers who are accepting of their role and enjoy and approve of their children seem to produce well-developed children. None of the mothers of poorly-developed children could be described in that way.

A third finding was that the quantity of the interaction with mother does not seem to be as significant as the quality. The mothers of well-developed children seem to be able to ignore their child as well as attend to him.
Validation of these ideas depends upon the results of the proposed work.

More recently, we have been exploring environmental factors which seem to influence differential task patterns in children. By rating mothers on certain dimensions, in part derived from earlier work and in part from new theorizing, we seem to be seeing patterns of maternal behavior and personality which we hypothesize relates to differential course of experience for the child.

These dimensions are first, the quantity of the interaction; included in this is an estimate of mother-initiated interaction vs. child-initiated interaction; whether mother is proactive or reactive; how much time is spent alone with the child and with others.

Second, is the quality of the interaction which includes such items as the amount and kind of instruction, how well the mother meets the child's needs, how restrictive or free the mother is in terms of the child's explorations and attempts at autonomous behavior.

The third dimension tried to get at motivational or value factors implicit in the mother's behavior; her self-confidence, her acceptance of her role as a mother, what kinds of behaviors she rewards, and her style of discipline.

We also look at a typical day in each home, the material resources available to the child, and resources used by the child.

Our hunches are tentative but they seem to point to certain prototypic patterns of behavior. We are now able to describe five types of mothers from the vast array of possible maternal types.
This typology must of course be considered as tentative.

The first type is the competent mother. She is above average in the amount of interaction with the child but there is also a balance between mother-initiated interactions and child-initiated interactions. She is verbal and able to teach skillfully and instruct the child by use of rational, cause and effect techniques. She disciplines with reason and often provides alternatives. Her tutorial skills are at the service of the child with a barrage of spontaneous tutorial accompaniment frequently when mother and child are together. She values cognitive achievement and mastery (even at this young age) and this is revealed in the kinds of tasks she rewards.

On the other hand, she truly enjoys the child and is able to accept him at this moment in development. She is able to meet his needs and understand his pre-verbal behavior and cues. This mother encourages role playing and frequently participates in his make believe world, perhaps another manifestation of her ability to enjoy the child.

The second type of mother is the mother who almost makes it. She seems to share some of the characteristics of the competent mother but there are significant differences.

This mother also enjoys and accepts her child but is frequently unable to meet his toddler needs or interpret his cues - particularly if he's pre-verbal. She tends to be significantly lower than the competent mother on mother-initiated interaction, often waiting for the child to express his needs and then not being able to interpret his cues. As the toddler gets older, this mother seems to lack the capacity for
intellectual input. Unlike the competent mother, she is either unable, unwilling, or simply doesn't have time to invest in tutorial opportunities with the child. Reasons for this lack are still to be explored.

A third prototypic mother can be described as overwhelmed by life's circumstances. Her pattern of behavior in relation to the child is strikingly different from both the competent mother and the "almost" mother.

There is little interaction with the child. She tends to be reactive with very few mother-initiated interactions. She tends to ignore the child at this age both in terms of rewarding behavior and emotional involvement. Verbal instruction and tutorial input is completely lacking. She seems to give some evidence of enjoying the child but is only minimally able to interpret the child's needs and understand his cues. This mother is often from the lowest socio-economic level and there are frequently many children in the family. The schedule in the home reflects a lack of structure and organization. In short, life is simply too hard for her and coping with child rearing appears to be only one facet of her responsibilities which overwhelm her.

A fourth type of mother is the rigid, controlling mother. She is very restrictive in a non-punitive way. The restrictions are imposed through carefully-organized household schedules. The child is contained regularly either in a crib or play area for certain hours of the day. Even when he is released to play, there is virtually no mother-child interaction. There is almost no monitoring of the child's behavior and a complete absence of either spontaneous or planned
tutorial activities with the child. In this way, this mother's pattern of behavior is functionally similar to that of the overwhelmed mother but for different reasons. One gets the feeling that this mother either doesn't like the child or has no appreciation of him at this moment in his development. She's waiting for him to be old enough to ski or play tennis. In contrast to the overwhelmed mother she may be educated and affluent. Her lack of involvement with the child appears to stem from a value system which is primarily adult-oriented.

The fifth type of mother is the smothering mother. She is very high on interaction with the child and most of the interactions are mother-initiated. This mother is reactive and incredibly responsive to the child's needs and cues; so much so that he barely has to express himself to make his needs known. This mother spends endless hours in tutorial activities with the child.

In contrast to the competent mother these sessions are characteristically planned sessions rather than spontaneous and casual. She rewards him frequently for performing cognitively-oriented tasks. There are two significant differences between the smothering mother and the competent mother. One is the high level of intervention and interference with the child's activities in which the smother-mother indulges; and the mother with the child subtly dominating the mother-child relationship. We will be interested in exploring the underlying meaning of this aspect of the relationship.

I have described five prototypic patterns of mother behavior which strike us as intriguing and significant. We are certain that there
will be other types of mothers. Some clearly prototypic and some who fall into a range of categories. For example, we occasionally see another type of prototypic mother in the punitive-rejecting mother. We also see many mothers whose patterns of behavior reveal a mix of prototypic patterns which we have labeled the smorgasbord mother.

In conclusion, it should be said that, this is obviously only a first approximation in our search for significant maternal variables which are salient to the development of the child's abilities and differential patterns of experience. Dr. LaCrosse will next describe our attempts at becoming more specific and quantitative in our search for human influences on the development of abilities.