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COGNITIVE AND EMOTIONAL DEVELOPMENT IN FAMILY-REARED AND INSTITUTIONALIZED CHILDREN

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CONTENTS

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LIST OF TABLES

APPENDICES

ABSTRACT

In this study the intellectual and personality development of children who have had minimal environmental stimuli and no parental rearing in the early years of their life and who are between 7-10 years of age have been investigated by making use of Koppitz' Human Figure Drawing test. With the children who have been accepted to institutions by the time they were two years of age, the facts of having maternal deprivation as well as insufficient environmental stimuli have been taken into the consideration.

The control group was divided into two subgroups within itself; the first one being low SES family-reared children and the second high SES family-reared children. In this study 70 institutionalized, 80 low SES and 80 high SES family - reared children were tested.

The results have shown that while the intellectual development of the institutionalized group is slower than the other groups of children, the low SES group is slower in intellectual development compared to the high SES group. The institutionalized group also showed more emotional disturbance compared to the other two groups.

Finally the results of this study enable us to make use of these data in the standardization of the Human Figure Drawing test as well as drawing our attention to negative influences of living in an institutionalized setting, and thus suggesting that certain precautions be taken.

INTRODUCTION

This is a comparative study of children who grow up under maternal care in family surroundings with those who are raised in institutions under manifest conditions of mother and stimulus deprivation. The investigation further seeks to determine possible differences between the two groups in terms of cognitive and personality development, and, in case such differences are indeed found to exist, to determine their nature and direction.

It is a fact that the mother figure and environmental stimuli occupy than central position in an infant's life which has the greatest formative value in his development, and consequently hypotheses seeking to understand psychological pathologies consistently draw upon the nature of the earliest relationships with the mother figure as well as of the environment and stimuli to which the infant has been exposed. The child's relation to the outside world begins with his relating to his mother or a mother substitute. He identifies with her, structures his relationship to the other and to the world around the model provided by his relationship to the mother figure, and his personality develops in

line with the mode of his interaction with his environment.

Institutionalized children usually suffer either the total or the partial lack of such a mother, and stimulus - filled environment. Even though some of these children spend time with their mothers for a while after birth, their childhood years are spent in institutions, under unfavorable circumstances. Aside from the absence of a mother or of a surrogate, they also suffer from deficiencies in nutrition, health care, education and social interaction.

It is known that these institutions in Turkey are overcrowded, and that the number and educational level of the personnel are insufficient. The institution is usually located in remote areas, away from residential centers. Elementary education is frequently conducted within the institution, further barring the child's way to social interaction. The concept and institution of the adoptive family are lacking in appeal and quantity, forming increasingly larger gaps between institutionalized children and the rest of society, parallel to the increase in prejudices against these children.

Theoretically, we can expect to find that separation from the mother in infancy, and deprivation from the physical and emotional stimuli she provides, living in the institution deprived of individual care and treatment instead of in the family surrounding, have a negative impact on the mental and emotional development of institutionalized children (Spitz,

1946; Bowlby, 1960; Yarrow, 1961). Such impact is apt to leave permanent traces in these children which may find no compensation in later life (Goldfarb, 1943; Dennis, 1973).

So, we can hypothesize that the intelligence level of institutionalized children will be lower, on the one hand, than that of children reared within the family, and on the other, greater emotional handicaps will interfere with their personality development. When compared to family reared children, these children are expected to display crucial differences, in fact, enormous gaps, in emotional and cognitive development.

It may also be asserted that similarities will be found between institutionalized children and children of families of low socio-economic status. Children of two families, situated on different socio-economic levels, will also display developmental differences in that, obviously, the low socio-economic status family will be unable to afford the variety of stimuli to which the child of the high socio-economic status family will be exposed (Kâğıtçıbaşı, 1979; Uçman, 1972). Moving from this assumption, in this comparative study of family reared and institutionalized children, the control group of family reared children has been divided into two sub-groups; namely, into that of children from low and from high socio-economic status.

The results obtained in this study can be of value in

a variety of settings; for example the findings may be useful for these institutions. They can be submitted to the attention of those involved in the organization and administration of nurseries whose number is continually increasing. A further aim and possible function of this research is to contribute data toward the standardization of the Goodenough Draw -A- Man test in Turkey.

THEORETICAL BACKGROUND

The aim of this study is to compare institutionalized and family reared children in terms of their emotional and cognitive development and to observe the effects of deprivation. Deprivation here refers to those developmental conditions which are the result of insufficient stimulation, and which lead to retarded developmental progression in substantial areas. In this study, the basic deprivation is assumed to be maternal deprivation as well as the lack of environmental stimuli which are necessary for developmental progress.

The spectrum of the points of view on infants' sensitivity in the first few months of life range from the view of the infant as the passive recipient of the outside world on the one hand, to the view that the infant is an active recipient, on the other. That is, stimuli to which the infant is exposed, are accommodated according to the infant's specific psychic mechanism. In either case, it is certain that, passive or active, the infant is dependent on his environment, and on the stimuli that the environment provides. And, again in both cases, the central figure of that environment will be the figure of the mother or of her substitute.

The infant is almost completely dependent upon the mother or her surrogate in order to satisfy his essential needs, to be provided with a sense of security and for the stimulation required for normal emotional and cognitive development. The psychoanalytic term, the "oral stage", empnasizes that the infant's life centers around taking in nourishment through sucking, but also that his emotional well-being rests upon the assimilation of feelings of security, or, in Erickson's terms, "basic trust" (Erickson, 1964), from those who take care of him (Neubauer, 1972).

The oral stage of development begins with birth and continues for one and a half years, and is characterized by the dominance of oral activity, with pleasure-seeking strivings and aggressive aims. The various forms of conflict and deprivation are usually to be found even in this early phase of development. Psychoanalytically oriented writers assert that some of these conflicts lead to the establishment of early individual character traits which then become integrated into the general personality and achieve "secondary autonomy" (Neubauer, 1972). Eating problems such as overeating, nail biting, sucking as well as depression connected with feelings of loss of the mother figure, are frequent complications (Neubauer, 1972).

Thus, the oral stage is characterized by object dependency, and by the emergence of rudimentary ego equipment. These two aspects of psychic formation together lay the foun-

dation for the individual's later development. And, if this stage in an individual's life has been spent with an over protective mother figure, damage to the development can be foreseen. The child will be unable to realize the differentiation between self and other, yielding to symbiotic ties with the mother, and thus setting the pattern for life-long dependency. On the other hand, if this stage in an individual's life has been spent deprived of the mother figure or spent with a rejecting mother, the developmental pattern established again will necessarily have damaging effect upon later life. Both cases subject the infant to the experience of object-loss which will result in gradually evoluing depression. It is from the bond of all infantile experiences to the first human object that the mental representation evolue; first of the object, then of the outside wold and lastly of the self.

In his studies of attachment, Bowlby (1960) considers the child's relationship to his first object, the mother, as an essential, vital part of his development. His concept of a biological the resulting in certain patterns of behavior when activated by nursing care is parallel to the classical psychoanalytic conception of an inborn readiness to cathect with libido a person who provides pleasurable experiences (anaclitic relation) (Spitz, 1946). Bowlby postulates mechanisms by which the primary attachment to the mother is mediated. These mechanisms, referred to as component instinctual responses such as sucking, clinging, following, crying and smiling,

emerge within specific developmental periods during the first year of life. Bowlby has revealed what appears to be a frequent sequential pattern of reaction to seperation, especially in children over six months and under three years of age. At first, if the child had constructed an attachment with the mother, he reacts by protesting, crying and by searching for the missing mother, expressing his desire for her return. This reaction is followed by a phase of despair characterized by intermittent crying, inactivity and withdrawal, indicating increasing hopelessness and what Bowlby believes to be equivalent to a state of mourning. A third stage follows, one of detachment, which often appears as a sign of recovery. But when the mother does return, there is a striking lack of attachment behavior, on the part of the child, toward her (Schecter, 1974).

If there is a series of losses of mothering figures, or if the mother's rearing attitude is inconsistent, the child will commit himself less and less to each succeeding figure, and will develop rather superficial relationship in which people come to be experienced as sources of supplies rather than as significant people in their own right.

Bowlby discusses extensively the manifest violent reactions as well as the mourning stage of infants in the face of the mother's absence (Bowlby, 1960). Spitz on the other hand, claims not to have encountered any such behavior

as observed by Bowlby in his own investigations (Spitz, 1960). He explains this disagreement in terms of the chronolgical age of their respective subjects. Spitz writes that Bowlby disregards the differences in the developmental levels between children who are six months of age and those who are aged four.

However affirmable Spitz's claim may seem, due to the lack of pertinent information about the subjects, the present study has not been able to take account of developmental differences in terms of the subject's age at the time of mental deprivation, except for the use of the information that all subjects under consideration underwent loss of the mother figure between birth and the end of age two.

Before embarking further upon the relevant studies conducted with children, it should prove worthwhile to review some of the studies investigating animal behavior, since the latter yield more clear and drastic explanations about the effects of deprivation. A striking example of this type of research is that of Harlow and his co-workers who claim that there are similarities between the maternal affectional system of the rhesus macaque and all anthropoidea (Harlow, 1966).

It has been demonstrated by the above authors, in an experimental condition, that if the monkeys were put in a room with two kinds of surrogate mothers, one made of wire and providing food, and the other of a furry material, the

monkeys, in fearful situations, preferred the furry mother and spent most of their time with it. Thus monkeys prefer the soft secure surrogate mothers to the one which only provides food (Harlow, 1959). In another study, (Harlow, 1966) they observed monkeys that were separated from their mothers and then isolated. These monkeys were given absolutely no environmental stimuli. At the end of the observation, the monkeys were found to display great fearfulness, aggressive behavior, selfclutching, crouching, and problems in identification of sex role. The group of monkeys that were raised with terry cloth mothers, but were given an opportunity to play with each other in a free environment, showed none of the markedly abberrant behavioral characteristics of their peers raised individually. The social development of those that were allowed to interact did not proceed as rapidly as that of the control group reared with a real mother, but by the end of the second year of life, the earlier differences had disappeared. Although growing up without a mother does have long standing effects on the adjustment of monkeys, peer interaction can nevertheless have compensatory value for normal development of monkeys:

> Both normal mothering and normal infant - infant affectional development are extremely important variables in the socialization of rhesus monkeys and presumably of the higher primates ... interference may not of necessity socially destroy an infant monkey if it is subsequently allowed to lead a normal or more or less normal life, but there can be no

> doubt that the easier and safer way to love and live with both mothers and age - mates (Harlow, 1966, p.272).

The deprivation syndrome in human beings was first observed in children who had been hospitalized for long periods of time or were brought up in orphanages. Spitz observed 123 unselected infants in a nursery, each for a period of twelve to eighteen months, and encountered displayed this deprivation syndrome, which Spitz calls "anaclitic depression" during the entire first year of life. In the second half of the first year, they developed a weepy behavior that was in marked contrast to their previously happy and outgoing pattern. Later, with drawal, lying in their cots with averted faces, refusing to take part in the this period, some of them lost weight and showed susceptibility to recurrent colds or eczema, and displayed gradual decline in the developmental quotient. The common factor in all cases was that the mother was removed from the child somewhere between the sixth and eignth months for an unbroken period of at least three months, during which the child either saw his mother not at all, or at most once a week. Before the separation, the mother nad the full care of the infant, and as a result of special circumstances, had spent more time with the child than is usual in a private home Spitz found that there must have been a close relationship between mother and child before the separation, for this syndrome to appear. Spitz concludes that "No child developed the syndrome in question whose mother was <u>not</u> removed. ... (it) developed only in children who were

deprived of their love object for an appreciable period of time during their first year of life. On the other hand, not all children whose mothers were removed developed the same syndrome. Hence, mother separation is a necessary, but not a sufficient cause for the development of the syndrome" Spitz, 1946, p.320).

In another study, Spitz observed 164 children, 34 of whom were non-institutionalized. This group consisted of children who were cared for by their parents in their homes. 130 children, on the other hand, were in two kinds of institutions, that is, either in a nursery, or in a foundling home, The nursery children were exposed to a mother-child relationship in which the mothers participated in the care-taking program designed for them. The developmental quotients of children raised completely in parental homes did not show a difference between the first four and the last four months of their first year, whereas the two institutionalized groups showed a significant difference. In the nursery group, developmental quotients changed for the better, but in the foundling group, developmental quotients decreased although their score was much higher than the nursery group's in the beginning.

> The children in Foundling Home do have a mother -- for a time, in the beginning -- but they must share her immediately with at least one other child, and from three months on, with seven other children. The quantitative factor here is evident. There is a point under which the mother - child relations cannot be restricted during the child's first year without inflicting irreparable damage. On the other hand, the exaggerated mother-child relationsnip in Nursery introduces a

> different quantitative factor. To anyone familiar with the field, it is surprising that Nursery should achieve such excellent results, for we know that institutional care is destructive for children during their first year; but in Nursery the destructive factors have been compensated by the increased intensity of the mother - child relationship (Spitz, 1972, p.221).

In addition to emphasizing the role of stimulus deprivation in development from the view point of the loss of the mother figure, Spitz investigates the same matter also in the context of perceptual and motor deprivation (Bronfenbrenner, 1972). As seen in Harlow's experiments with monkeys, infants reared in institutions also suffer from perceptual an motor deprivation because their perceptual world is more or less emptied of human partners; their isolation too, cuts tnem off from any stimulation coming from a person who could at this stage signify mother-representatives. This interruption of human contact is critical, since what a child under 12 months of age needs are, as already indicated, stimuli which stem from a human. No inanimate perceptual stimulus will be of any more than minor importance to a child of that age.

Spitz's view tnat animate objects are more fundamental for children under the age of twelve months than are inanimate objects, is also shared by Provence and Ritvo (1961).

Provence and Ritvo show in their studies that tne extreme care displayed for diets of institutionalized children

in their first year is of no consequence. When a family reared child's discomfort is attended by his mother, it is not only the elimination of discomfort that is positive for the child, but also the fact that his need has brought a positive response from an animate object with whom he has thus entered interaction. This animate object, the mother, talks to the child, reflects positive or negative emotions, and stimulates the child to action.

According to the psychoanalytical conception on which Provence and Ritvo base their study, an object-cathexis will occur between the child and the mother which then, that is, after the first year of life, will be displaced on to other, outside objects. Because institutionalized children are deprived of the experience described above, Provence and Ritvo assume that these children will not be able to cary out the displacement action at the end of the first year. The study has also shown that whereas institutionalized children displayed normal behavior within their first year in terms of grasping those objects, it has been noted that such behavior decreased in proportion to the time spent at the institution. In brief it was observed that, at the end of their first year, institutionalized children when compared to family reared children showed retardation in motor coordination, language acquisition and human interaction. Not only did they display lack of development, but also a lack of energy. Consequently, Provence and Ritvo were led to conclude that

human contact acts as an organizer for the development of the infant.

Another study elaborating on the constructive role of the mother is one by Korner and Grobstein (1970). Mothers of home-reared infants differ in their readiness to soo the their crying newborn. It was observed that the crying ceased when the infants under observation were picked up and put to the shoulder, and that the infants then showed signs of alertness and visual scanning of the environment. Thus tactile stimulation may activate visual behavior providing the infant with more opportunities to explore the environment and to become acquainted with it. In terms of psychoanalytic theory, visual alertness is a primary autonomous ego function observable even in the newborn.

Rheingold also found that family reared infants received 4-5 times more "care taking" than institutionalized children, although differences between the two groups varied depending on the specific care taking activity. For example, the home infants were shown affection 18 times more frequently than were the institutionalized children (Rheingold, 1960).

More comprehensive and detailed studies in the area of maternal and stimulus deprivation have been conducted by Yarrow as well. He has classified maternal deprivation in terms of institutionalization, separation, multiple mothering and distortions in the quality of mothering. In most cases

several of these conditions were found to occur concomitantly or sequentially in complex interactions. For example, an institutionalized infant may experience a separation together with multiple mothering. Regarding stimulus deprivation, Yarrow observed that, besides the lack of human contact, physical conditions such as the color of the walls, the amount of silence or noise in the room seemed to play an important role with children in institutions. Both the psychological and the physical atmosphere cause the children to grow up eitner completely without sensory, affective and social stimulation, or at least with less of these stimuli than the family reared children can find (Yarrow, 1961).

Yarrow conduded that "the most impressive aspects of the institutional environment are the low level of stimulation toward achivement, and the lack of individualized care. The findings on stimulus-adaptation would suggest that the lack of individualized stimulation might be as significant in the etiology of the institutional syndrome as sheer stimulus deprivation" (Yarrow, 1963, p.106). According to Yarrow, vulnerability to separation from the mother and to deprivation varies with the characteristics of the developmental age of the child. Thus Yarrow also studies the effects of loss in the mother figure on the subject in terms of when the separation occurs, that is, in the light of the concept of critical period. Yarrow uses the hypothesis that the degree of vulnerability and the effects of separation will vary in relation

to the developmental stage at the time of separation. Within this framework, he compares children who were adopted immediately after birth with those whose adoption happened within their first year of life.

While only a few of those infants who experienced separation within the first 3 months of life displayed signs of disturbance, 86 % of those who had the same experienced separation after the seventh month, on the other hand, were found to be markedly disturbed.

When the reactions of children who experienced separation are analyzed, it is found that this occurrence has had a travmatizing effect on all of them. In other words, their behavior is found to display changes in the direction of blunted social responsiveness, excessive clinging to the mother, excessive crying, unusual apathy, disturbance in adaptation to routines, sleep and feeding as well as further signs of developmental regression such as in IQ or loss of abilities that were previously present (Yarrow, 1963).

Since this interesting study on the long-term effects of maternal separation and its consequences in stimulus deprivation has not been yet terminated, there are no definite results available.

As Yarrow investigates deprivation problems of infants, rather than determining only the disturbances at the end of

the first year, Goldfarb investigated the long-term effects of institutionalization on children's personality and intellectual development (1943a, 1943b). Goldfarb studied two groups of children. The first group consisted of children who lived in an institution from birth until the age of 3, and then were taken into foster homes. The second group contained those who became foster children shortly after birth. What Goldfarb did was to investigate intellectual and personality development among these children who belonged to diverse age groups at the time of the study. His first examination was to adminester the Stanford-Binet Intelligence Scale, Form L to the first group of children while they were still at the institution. Then, 7 months after they had been moved to the foster home, they were given the Wechsler-Bellevue Scale. The institutionalized children were found to display inferiority in both instances, that is, they did not indicate any development even after 7 months at the foster home. These institutionalized children displayed differences from the foster children in other areas as well. They were found to fail in concept formation and abstract thinking. They lacked normal inhibitory patterns, did not follow rules and behaved extremely impulsively. They showed affective hunger, and strove continually to draw attention to themselves. They were also observed to be emotionally impervious and superficial. Institutionalized children also showed more problems involving the overt expression of anxiety (restlessness, hyperactivity, inability to concentrate), and the overt expression of aggres-

sion (temper display, impudence, destructiveness, failure to respect privacy, cruelty, without cause, etc.), and affective impoverishment (Goldfarb, 1943a).

In a similar study by Goldfarb, (1943b) adolescents were taken as subjects in order to show that childhood patterns are determining factors in adult personality. For this, he divided a group of boys and girls aged 10-14 into two. One group consisted of persons who were institutionalized 3 years, beginning at the age of 4 1/2 months. At the end of this period, they were transfered to foster homes. The second group on the other hand, consisted of children who were taken into foster homes immediately after birth. When the two groups were compared, again, the first group, that is, the institutionalized children, displayed the lower IQ level, as well as insufficiency of language, vocabulary and information. As a result, it was concluded that living in isolation and in the relative absence of interaction with adults leave irreparably disturbing traces in personality.

In another study, the children who were adopted before they reached the age of two showed increase in intelligence after they had been educated and reared in enriched environmental conditions. But adoption after two years of age showed no dear increase in intellectual functioning (Dennis, 1973).

All the above cited studies show that interaction with the mother or with a substitute figure occupies a vitally

important place in the development of the infant. The body of research discussed also indicates that the two types of deprivation, i.e., maternal and stimulus deprivation, are reducible to one and the same concept, in terms of both fnuctioning and impact. In other words, they trigger identical changes in the infant. Children living in institutions experience, as maternal deprivation, the lack of emotional interaction, simultaneously with the absence of those stimuli that a mother figure can provide with her individualized care and treatment. In addition to these deficiencies, the institution further handicaps children by its meager physical conditions such as the educational level and number of personnel, the un-homelike atmosphere, the lack of adequate toys and other objects, as well as other factors.

STUDIES OF HUMAN FIGURE DRAWINGS

Psychological studies of children's drawings began toward the end of the eighteenth century, and developed in our day into a method of obtaining information about children's needs, conflicts, characteristics of their personality as well as of their intellectual development, and of their maturity.

The great majority of psychologists who were involved in these studies in the historical beginnings of the such research, had the initiative to achieve a description of successive stages of children's development through their drawings. These studies concentrated primarily on the nature and content of the drawings as well as on the intellectual development they indicated. The criteria applied in the comparison of the children usually did not rely on formal analyses, but rather on simple, subjective inspections.

Florence Goodenough's famous 1926 demonstration marked a radical change in the method of these studies. Goodenough's attempt has been made to point out some of the psychological factors involved in the spontaneous drawings of children, and to point out the relationship between children's general

intellectual development and their human figure drawings. This scale is based on drawings of the human figure, and consists of 51 points, or criteria. Although Goodenough made clear that the developmental aspects of human figure drawings mostly reflect a large intellectual component, she admitted that the drawings may also contribute to the understanding of the child's interests and personality traits (Goodenough, 1926).

In the 1940's, when projective methods had gained popularity, drawings of the human figure started being used as a projective test. The relationship between the drawings and the subject's body image was established. Machover, one of the leaders of the projective approach, claimed that children falling on the same IQ levels on the Goodenough scale were presenting different qualities in their drawings (Machover, 1952).

Machover added a new dimension to the procedure by asking the subject to draw a second figure which had to be a figure of the opposite sex. In addition to this, she also established a third phase, an inquiry where she asked the subject to make up a story about the figures as if they were characters of a play or a novel. Moreover, she required that the examiner should ask questions concerning the age, schooling, occupation, ambition, family, preference of parents, attitudes toward the body and toward friends, through which

indirect information might be obtained (Machover 1952). "In general terms, the drawing of a person represents the expression of self or the body, in the environment. What is expressed may be characterized as a body image..." that "may be regarded as a complex reflection of self-regard - the self-image" (Machover, 1952, p.348).

Machover's interpretation of human drawings were based on the psychoanalytical approach and in her evaluations, she took mainly the representational aspects into consideration. She did not develop a statistical system of evaluation. Levy followed Machover's approach too, and emphasized the importance of the human figure drawing test in terms of the projective method. He believed that drawings are not accidental and that they all give information about the subject's self-concept, ideal self and attitudes toward the environment. He proceeded to construct a Drawing Analysis Record Form. His purpose in this attempt was two-fold: to provide a uniformly recorded data for the service of clinicians, and to facilitate research through the use of these data (Levy, 1959).

In Levy's application of the test, initially one looks to see if the drawing is complete or not. The drawing has to contain the head, torso, arms and legs in order to be considered complete. If any of these are ommitted, then another sheet is given to the subject, and he is asked to draw a complete figure. This procedure goes on until the subject draws a complete one (Levy, 1959).

Levy, in agreement with Machover, also requires two drawings instead of one and the sexual preference of the subject plays a major role in his evaluations. The subjects generally prefer to draw their own sex, the opposite sex later. Beside this, with a psychoanalytic orientation, he compares the two figures in terms of their features -- posture, action, proportion and other qualitative features such as the size of the figure, its location, movement, distortions and omissions in the drawing (Levy, 1959).

Recently, psychologists prefer to consider the drawings of human figure as a tool that can be used in understanding the cognitive aspects of children. Harris, who follows Goodenough's method of evaluation, has replaced Goodenough's notion of intelligence with the idea of "intellectual maturity" or, more specifically, "conceptual maturity". Conceptual maturity means the ability to form concepts of increasingly abstract character (Harris, 1963, p.5). However, Harris joins the Goodenough attempt with Piaget's theoretical views. He hypothesized that "The child's drawinf of any object will reveal the discriminations he has made about that object as belonging to a class, i.e., as a concept" and "... his concept of a frequently experienced object, such as a human being, becomes a useful index to the growing complexity of his concepts generally" (Harris, 1963, p.7).

Besides his theoretical contribution to the Goodenough

test, Harris also developed a systematic scoring system. In the 1926 Goodenough drawing test, mental age was used in the assessment of children. Harris developed a deviation IQ which makes it possible to compare the scores of the Goodenough test with the results of other intelligence scales. He scored the drawings in reference to 73 items -- 22 of his own in addition to Goodenough's 51 items. Another important contribution by Harris was his requirement of three drawings in the sequence of "a man", "a woman" and "self".

Koppitz, in her investigation, tried to combine the developmental and projective approaches to the human figure drawing (HFD). According to Koppitz, HFD's "reflect primarily a child's level of development and his interpersonal relationships, that is, his attitudes toward his self and toward the significant others in his life" (Koppitz, 1968, p.3). In her method of evaluation, Koppitz followed a two-step procedure and evaluated a drawing first as a developmental case, then as a projective case. Here, it should be pointed out that she always requested the drawing of a <u>whole</u> person.

Koppitz derived the Developmental Items from the Goodenough-Harris scoring system and from her own experience. She hypothesized that the presence of Developmental Items in human figure drawings is related to the child's age and maturation and she also assumed that they are independent of artistic ability and school learning. Her Developmental Items

are basically 30 signs on human figure drawings. Later she elaborated them in order to define their significance in relation to age and sex differences. Certain items are expected to be present in the drawing of subjects who belong to certain ages and sexes and they are considered to be "peculiar" or "exceptional" if they are absent in the drawing. A list of Expected and Exceptional items for boys and girls at each age level (between 5 and 12) is derived. If the subjects do not include one or more of the Expected items in their drawings, they get a negative score for each missing item. On the other hand, if the subjects include any of the Exceptional items, they get a positive score for each additional item. In the end, in order to avoid negative final scores, the value of 5 is added to the sum of all positive and negative points. The final score shows the child's general level of mental maturation, even though no definite IQ score is given. This scoring system was found to correlate significantly with WISC and Stanford-Binet IQ scores (Koppitz, 1968).

In the second part of her evaluation process, Koppitz states that Emotional Indicators are not as objective as the Developmental Items. She thinks that the Emotional Indicators are not related to the child's age, sex and maturation but to his personality and the Emotional Indicators reflect the subject's anxieties, concerns and attitudes (Koppitz, 1968). Koppitz has also developed a list of 38 Emotional Indicators to be used in the scoring of a human figure drawing as a

projective test. This list is derived from Machover's and Hammer's interpretations (Koppitz, 1968). The list consists of three types: Quality signs, special features and omissions.

Despite the effect exerted to render the human figure drawing test independent of cultural variants, Harris has proposed that the test be used to compare the development of children belonging to the same culture rather than to compare the respective achievements of children from different cultures (Harris, 1963).

The intercultural study Dennis has conducted has shown that Hopi and Eskimo children, for example, use in their drawings, motifs and forms borrowed from their own native art, and that they clad their human figures in the costumes of their own culture. One particular differentiation this usage produces can be observed in the drawings of Eskimo children. Because these children draw figures dressed according to their culture, they exclude certain organs from the drawing, such as the limbs and ears. In another study comparing boys from the Middle East with European boys, it was seen that boys from Ankara, Turkey, did not display differences in relation to the European group, whereas the subjects from other Middle Eastern areas did (Dennis, 1942, 1966).

There are very few studies on human figure drawing test in Turkey. Although there has been no standardization procedure, some psychologists have used it in their studies.

In a study by Kâğıtçıbaşı, the effects of socio-economic development on the Goodenough Draw-A-Man test are investigated. Kâğıtçıbaşı compared different socio-economic levels in terms of remoteness from the city. She obtained variations in IQ scores depending upon the remoteness from the city. It was found that as the remoteness from the city increases, IQ levels of children decrease (Kâğıtçıbaşı, 1979). The decrease in IQ level was associated with a decrement in environmental stimulation. She observed that little intellectual stimulation exists in the most remote villages as a result of low parental education, lack of books, magazines, newspapers and television. Kâğıtçıbaşı concluded that environmental richness plays an important role in the intellectual functioning of children (Kâğıtçıbaşı, 1979).

Another study was conducted by Uçman in Turkey (Uçman, 1972). She used the Goodenough-Harris 1963 scoring manual as a means of evaluating the cognitive development of 180 Turkish children from three different socio-economic status levels. She attempted to gather information for standardizing the test in Turkey. Similar to Kâğıtçıbaşı's study, Uçman found that IQ scores increase with socio-economic status. Beside this finding, Uçman supported the relation between IQ and age and sex, which were indicated in Harris's and later in Koppitz' studies (Harris, 1963; Koppitz, 1968). It was found that there was an increase in IQ levels parallel to the increase in age and that the mean for girls was higher than for boys (Uçman, 1972).

Studies that point at the influence of socio-economic conditions on IQ levels were carried out by Ataman, Epir and Öztürk. Ataman and Epir (1972) too have claimed that low socio-economic status and rural living conditions influence children's cognitive processes and specifically their intellectual level based on the application of the Wechsler Intelligence Scale in a village, Öztürk (1972) argued that children's IQ levels have been negatively influenced by deprived and neglected environments. The results of an eight month long child-oriented program carried out by Öztürk showed a significant increase in the IQ's of children in the program (Öztürk, 1972).

Although it is often used in clinics in Turkey, there has been almost no attempt at all to use human figure drawings as a projective test in research. Cansever has used the Good-enough Draw-A-Man test to assess effects of circumcision on boys. Cansever required two figures, one before the operation, the other after the operation. When the two human figures were compared, the size of the figures were shortened, or limbs were cut off after the operation. Thus, it was proposed that children are apt to project their anxieties, fears or conflicts on their drawings (Cansever, 1965).

It is certainly not yet absolutely established that the human figure drawing test is culture-free and independent of school learning or artistic ability. Nevertheless, because this test has been found to be more flexible than others, it

has been preferred as a basis of measurement in the present study. Thus, institutionalized children, as well as children from lower and higher SES's were evaluated according to more or less similar measurements with the application of this test.

Information about the subjects is received indirectly by this test. In other words, tests through which information can be directly, that is, verbally obtained, may subject the children to conditions for which they are inadequate. In this test, where the verbal channel has been minimized, children are not handicapped by linguistic poverty, lack of acquaintance with some of the alternatives implied by a question, or by unfamiliarity with conditions of testing in general. Furthermore, the advantages afforded by the choice of Koppitz' test among all other human figure drawing tests, are that Koppitz has distinguished between male and female subjects, and that, a side from measuring developmental maturity, the test also conveys information about the subject's emotional state.

In order to determine the impact of maternal and stimulus deprivation in infancy, and to compare the three designated groups of children, the hypotheses underlying the study have been structured as follows:

HYPOTHESIS-I

The scores achieved by institutionalized children on the Developmental Items of Koppitz' HFD test will be lower than those achieved by the family reared children from low and high SES.

HYPOTHESIS-II

Developmental Item scores of those from low SES will be higher than the scores of institutionalized children, and lower than the scores of children from high SES.

HYPOTHESIS-III

The frequency of occurance of Emotional Indicators on the HFD will be higher with institutionalized children than with family reared children from either low or high SES.

METHOD

SUBJECTS

The sample consisted of three groups of children. The experimental group included 70 institutionalized children, 25 boys and 45 girls who are now between the ages of 7-10 and reside at various orphanages (Yetiştirme Yurdu). The institutionalized children were separated from their families and taken under care in nurseries any time between birth and the age of 35 months.

An effort was made to select all members of this group from institutions in the vicinity of Istanbul, and to ensure equal distribution of boys and girls in every age group. The majority of the subjects were chosen from the Yakacık (boys), Bozhane (boys) and Küçükyalı (girls) Orphanages, and from the Küçükyalı Boarding Elementary School (co-educational). Since a sufficient number of subjects could not be found in Istanbul institutions, the group was supplemented with children selected from Bursa (girls) and from Ankara's Ayaş (co-educational) Orphanages. Although the desired number of

subjects was indeed obtained in this manner, it proved impossible to attain the intended distribution of equal number of boys and girls in each age group.

The control group consisted of family reared children who have families and homes where both parents and all existing siblings live together. However, it was considered necessarry to group them into two in terms of their families' socio-economic status (SES).

The first control group, then, consisted of children from lower SES. They were children from the underdeveloped areas of the city, whose fathers have had little or no education. Also the parents, especially the father, were either manual laborers or unemployed. These subjects were randomly selected from an elementary school in the Yakacık district, with the aid of teachers who were given the information about the families indicated above. The 80 subjects selected were between the ages of 7 and 10 with 10 boys and 10 girls in each age group.

The second control group consisted of children from higher SES, that is, of children living in the city center or developed districts. The criteria of selection necessitated that the father, or preferably both parents of children in this group, be high school graduates or have some degree of higher education and that the family income be above average. The subjects in this group were randomly selected from an

elemantray school in the Etiler district, with the aid of teachers who were given the information about the families indicated above. The 80 subjects selected for this group were between the ages 7 and 10, with 10 boys and 10 girls in each age group.

The total number of children who were tested and evaluated in all three group was 230 (See Appendix A).

MATERIALS

Koppitz' Human Figure Drawing test was used in this study. The test, described above in section II, and the scoring system can be found in Appendices C, D, E and F.

A pilot study was conducted before the application of the test in orphanages and elemantary schools. The purpose of this preliminary study was primarily to test the reliability of the evaluation of the drawings obtained from the sampling; and second to determine to what extent the scoring of different judges would correlate with Koppitz' evaluation system.

The pilot study involved the separate evaluation by two different judges, of drawings by 20 children according to Koppitz' scoring system. A correlation of 97 % was established between the two scorings of Developmental Items. The two judges also showed 84 % agreement on the scoring of Emotional Indicators. The researcher relied on these high percentages in the scoring of the pilot study.

PROCEDURE

The children took the test in groups. Although care was taken to group the subjects in equal numbers for each testing session, constancy could not be maintained every time. For instance, since there were only 3 subjects at the Bursa Orphanage, naturally, there the test was taken by a group of 3. At some other institutions on the other hand, the test had to be given to much larger groups, owing to time and place limitations.

Each child was given a pencil and an eraser and a white piece of paper (23x32 cm) was placed vertically in front of him. Koppitz' instructions were combined with her additional statement for younger children, and were translated into Turkish and spoken to the children as follows:

*"Bana bütün bir insan resmi çizeceksiniz, bu bir kadın olabilir, bir erkek olabilir, bir kız çocuğu ya da bir erkek çocuğu olabilir. Siz nasıl isterseniz, öyle, bütün bir insan resmi çizin".

Questions by subjects, such as whether they were to draw a large or a small person, or whether they had to draw

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*"On this piece of paper, I would like you to draw a WHOLE person. It can be any kind of a person you want to draw, just make sure that it is a whole person, not a stick figure or a cartoon figure". "You may draw a man or a woman or a boy or a girl, whichever you want to draw" (Koppitz, 1968, p.6).

one or more than one person, were answered by either repeating the instruction cited above or simply by telling them to draw as they wished. The drawings were collected from the children one by one when they were finished. When some drawings were found to carry ambiguous features, these were immediately clarified by asking personal questions to the subject.

RESULTS

The results will be discussed by revieving each hypothesis and the related findings.

Hypothesis I: The scores achieved by institutionalized children on the Developmental Items of Koppitz' HED test will be lower than those achieved by the family-reared children from low and high SES.

The distribution of Developmental Item scores and the mean Developmental Item scores for each of the three groups are shown in Table I.

The scores of the three groups were compared by means of one-way analysis of variance and were found to be significantly different from each other ($F_{2,227}=34.570$, $p \leq .0001$). A planned comparison was carried out between Group I and Groups II and III. The difference was significant ($t_{227} = 7.976$, $p \leq .0001$).

It was found that institutionalized children receive lower scores on Developmental Items than the two family-reared groups.

TABLE I

Distribution and Mean Developmental Item Scores in Each Group

SCORES	GROUP I* N=70	GROUP II** N=80	GROUP III*** N=80
0	5	0	0
1	7	0	0
2	4	1	0
3	9	4	0
4	11	13	8
5	31	53	54
6	3	8	10
7	0	1	6
8	0	0	2
$\bar{x}$	= 3.70	$\bar{x}$ = 4.825	$\bar{x}$ = 5.262

*GROUP I: Institutionalized Children
**GROUP II: Children from low SES
***GROUP III: Children from high SES

Hypothesis II: Developmental Item scores of those from low SES will be higher than the scores of institutionalized children and lower than the scores of children from high SES.

In order to test this hypothesis, a planned comparison was carried out between Groups II and III. The difference was significant ($t_{227} = 2.354$, $p \leq .019$)

It can be seen from Table I and the statistical

analysis that children from low SES received a higher score on Developmental Items than the institutionalized group, and a lower score than the children from higher SES.

A multiple regression analysis was carried out to test the interaction effect between age and group. There was no significant interaction.

Hypothesis III: The frequency of occurrence of emotional indicators on the HFD will be higher with institutionalized children than with family-reared children from either low or high SES.

The mean number of Emotional Indicators for each of the three groups is shown in Table II.

TABLE II

Mean Number of Emotional Indicators

Number of Emotional Indicators	GROUP I	GROUP II	GROUP III
	2.80	1.412	1.20

The mean number of Emotional Indicators for each group was compared by means of one-way analysis of variance. It was found that there is a significant difference ($F_{2,227} = 31.391$, $p \leq .0001$).

Additionally, a planned comparison between the two

family-reared groups, Groups II and III, was carried out, but there was no significant difference ($t_{227} = 1.013$, $p \leq .312$).

As can be seen from Table II, the mean number of Emotional Indicators was higher for institutionalized children than for the two family-reared groups.

Table (See App. B-I) shows the distribution of 30 Emotional Indicators among the groups, in frequency and percentage. The first group exhibits the highest number of Emotional Indicators as well as the widest range in kinds of Emotional Indicators, that is, the subjects of the first group showed almost all of the 30 indicators.

In other Table the most frequently occurring indicators (the top seven) of each of the three groups are presented (See App. B-II). The order of indicators shows similarities among the three groups. For example, "poor integration", "tiny figure", "short arms" etc., show the highest percentages in each group.

The drawings were also analyzed in terms of their size location and sexual preference.

It was found that the size of figures differs among the three groups. The mean height of the figures in each group is shown in Table III.

TABLE III

Mean Size of The Figures
(in centimeters)

	GROUP I	GROUP II	GROUP III
Height of Figure	6.774	7.856	10.955

The mean scores were compared by means of one-way analysis of variance and the difference was significant ($F_{2,227} = 15.461$, $p \leq .0001$).

In order to test whether or not the groups were significantly different from each other, planned comparisons were carried out. The results showed that there is no significant difference between Groups I and II ($t_{227} = 1.369$, $p \leq 0.172$), but a significant difference was found when the combination of Groups I and II was compared with Group III ($t_{227} = 5.439$, $p \leq .0001$). That is, institutionalized and low SES children drew smaller figures than the high SES children.

The location of the figures was coded according to Levy's five locations, i.e. use of the upper half, lower half, left side, right side and center of the paper. The frequency in the usage of each of these locations is shown in Table IV.

TABLE IV

Percentage of Subjects' Usage of Five Locations

LOCATIONS	GROUP I	GROUP II	GROUP III
UPPER HALF	65.7	78.6	77.5
LOWER HALF	11.5	8.7	5.0
LEFT SIDE	65.6	79.8	77.5
RIGHT SIDE	11.5	7.5	5.0
CENTER	22.9	12.5	17.5

It is obvious in these findings that in all three groups subjects preferred to draw their figures on the upper half and the left side of the paper. The usage of the lower half, right side and center slightly differ in the institutionalized group.

Finally the categorization of the drawings according to the sex of the figure is shown in Table V.

It can be seen that in all groups girls prefer to draw a figure of their own sex, especially in Group III. Boys didn't prefer to draw their own sex as strongly as girls in all groups. Undifferentiated sex of the figure most frequently occurred among the children of Group I in both sexes.

TABLE V

Preference for Sex of the Figure

	GROUP I		GROUP II		GROUP III	
	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS
FEMALE	68.0	15.6	82.5	42.5	95.0	20.0
MALE	16.0	64.4	15.0	52.5	5.0	70.0
UNDIFFE RENTIATED	16.0	20.0	2.5	5.0	0.0	10.0

DISCUSSION

In the measurement of cognitive abilities, human figure drawings have a particularly great potential, one accepts that a child's cognitive mechanism begins with perception and proceeds with the conceptualization of the perceived object. The child forms a direct relationship with the human object, develops a body-image and undergoes a process of intensive interaction between the image and himself. To obtain information on the degree of children's capacity to differentiate and classify objects, human figure drawings may be used as an important index. Children are expected to be able to draw more detailed and complex figures as they grow up, parallel to the development of their motor control and the above-mentioned cognitive mechanisms. In other words, it is expected that children will produce better organized and more discriminated mental representations with increasing age (Harris, 1963; Koppitz, 1968).

The first hypothesis of this study claims that children who have limited experience, individual care and environmental stimuli will score lower than other children on

the Developmental Items of Koppitz' HFD test. That is, this group of children will be more developmentally disadvantaged compared to the family-reared children.

As will be seen from Table I in the institutionalized group of this study, while 12 subjects received scores between 0-1, no subject attained scores of 7-8. On the other hand, in the low SES family-reared group, while no subject received scores of 0 and 1, one subject received a score of 7. In the high SES family-reared children, more over, no subject received scores between 0-4 and 8 subjects were able to reach scores of 7-8. Thus the results indicate that as we move from the institutionalized group to the high SES family-reared group, low scores decrease while high scores increase, showing a rise in intellectual capacity of high SES family-reared children. These finding support the first hypothesis and the second hypothesis which claims that low SES family-reared children will score lower than high SES family-reared children.

Koppitz has devised a system to evaluate the level of mental ability attained by subjects on the HFD test. As will be recalled (See p.26), Koppitz scores drawings on the basis of Expected and Exceptional items according to age and sex of the subjects (See App. D). The scores range from 0 to 8. Koppitz has prepared a second table (See App. E) which shows the level of mental ability corresponding to the scores on

the HFD. We see from this table that different scores on HFD roughly correspond to different IQ levels. For example, the institutionalized group has a mean Developmental Item score which is equivalent to an IQ score of 90-110. The level of mental ability of this group is some where between low average to average. It is seen that the institutionalized group is followed by low SES family-reared group with a mean score of 4.83. According to Koppitz, the low SES family-reared group's level of mental ability falls between average and high average with an IQ score of 85-120. The highest performance is seen with the third group. The mean Developmental Item score of the high SES family-reared group is 5.262, which falls between average to superior level with an IQ of 90-135 on Koppitz' table.

Thus comparison of three groups according to their level of mental ability shows that where the institutionalized group's highest mental ability is 110, the low SES group can achieve a level of 120 and the high SES a level of 135.

However, the IQ levels given by Koppitz are questionable. As can be seen from Appendix E low Developmental Item scores on the HFD correspond to narrow ranges of IQ scores whereas higher Developmental Item scores correspond to wider ranges of IQ scores. e.g. a Developmental Item score of 2 corresponds to mental ability level (IQ) of 60-80, i.e., borderline intelligence, whereas a Developmental Item score of 5 corresponds to a mental ability level (IQ) of 85-120,

i.e., average to high average. So, different Developmental Item scores may correspond to the same IQ levels, thus bringing about undesirable overlap among scores. Therefore, to compare the three groups according to their mean Developmental Item scores would be more meaningful than using Koppitz' IQ table.

Since the findings of this study have also been supported by other investigators (Ataman and Epir, 1972; Kağıtçıbaşı, 1970; Öztürk, 1972; Uçman, 1972), it can be claimed that mental abilities are influenced by maternal and environmental stimulus deprivation. The decrease is even more blatant when maternal deprivation and institutionalization at an early age combine with lower socio-economic living conditions and the deprivation of sufficient stimuli.

Although the HFD test can be claimed to be independent of school learning and artistic ability, high SES children are known to have more experience with pen and paper activities. Based on the studies done in Turkey, it can be said that parents are more involved with the education of high SES children and support their creative activities. It is worth mentioning that high SES children have a higher chance of having a preschool education in general. On the other hand, although the parental involvement and the level of education of low SES children are limited, in institutions the children receive practically no supportive and individualized extra

curricular activities. Although the specific living conditions of 0-6 age group children who are reared, in state or Çocuk Esirgeme Kurumu nurseries are not clearly defined, it was observed that the above mentioned supportive and individualized activities are lacking in ther curriculum. So, the disadvantages of the low SES family-reared group and mostly the institutionalized group may be influential on the intellectual development of the two groups.

So far we have discussed various implications of human figure drawings in the domain of cognitive ability. The same drawing is also claimed to show the child's self-concept, reflecting his anxieties, needs, conflicts and attitudes. In addition to Developmental Items, Koppitz has prepared a list of Emotional Indicators which are independent of age and maturation. The presence of more than one Emotional Indicator in a drawing is considered by Koppitz to be a sign of emotional disturbance an unsatisfactory interpersonal relationships.

The third hypothesis of this study claims that institutionalized children would show a higher number of emotional indicators. In the institutionalized children it was found that the number of Emotional Indicators per subject was higher than it was with the other two groups. While an average of 2.80 Emotional Indicators was observed in this group, the average number of indicators in the other groups. was around

1. The average of the low SES group (1.412) was slightly but not significantly greater than the average of the high SES group (1.20). On the other hand, the fact that the institutionalized group has shown a significant difference from the other groups and has an average of 3 Emotional Indicators can be interpreted as indicating that the institutionalized group includes emotionally disturbed and poorly adjested children.

When we study the types of Emotional Indicators the three groups exhibit, we can see that the institutionalized group has both a greater number as well as a wider range of Emotional Indicators. While the institutionalized group manifested almost all of the 30 Emotional Indicators, the number of Emotional Indicators was 17 in the low SES family reared group and 18 in the high SES family-reared group (See App. B-I).

When me study the frequency of occurrence of different Emotional Indicators, we see differences and similarities among the three groups (See App. B-I and II). Of all the Emotional Indicators the "poor integration of parts" has the highest frequency in the institutionalized group. Although this indicator is closely related to amount of drawing experience, it is also interpreted by Koppitz as indicating poorly integrated personality, weak coordination and impulsiveness. Since the frequency of "gross asymmetry of limbs" is also higher among the subjects of the institutionalized group than the others, we may conclude that weak coordination

and impulsiveness are higher in this group, which also manifests problems in the integration of their personality. Also, the frequencies of "tiny figure", "slanting figure", "three or more figures" and "clouds, rain, snow" are higher than in the family-reared groups. All the above-mentioned indicators can be related to the lack of a feeling of security and to loneliness. Again, in the institutionalized group we observe that means of social communication, such as "No eyes, nose, mouth, body and limbs" are frequently omitted, indicating their inadequacy in interpersonal relations.

Although the institutionalized group differs from the other groups in certain respects, there also seem to be some similarities between these children and the other two family-reared groups. For example, the "poor integration of parts" also frequently occurs in both low SES and high SES family reared groups. On the other hand, the frequency of "short arms" is equal in each of the three groups. This can be interpreted as indicating that most of Turkish children are expected to be well-behavered and obedient by their parents.

When the Emotional Indicators manifested by each group were studied separately, the high SES family-reared group showed a higher frequency of "arms clinging" and "legs pressed" than the institutionalized and low SES family-reared groups. Drawing of "genitals" was found only in the high SES family-reared group. This result may indicate the fact that the high SES children also have certain emotional problems,

probably different than those of low SES and institutionalized ones.

From the specific Emotional Indicators used by Levy, "size of the figure", "location" and "preference for sex of the figure" were used in this study. According to Levy, if the drawing is a projection of the self-concept, then its size shows the way the subject responds to environmental pressures. A small drawing (self-concept) can be interpreted as the subject's feeling small, inadequate and responding to the demands of his environment with feelings of inferiority. If the figure is large, it can be interpreted as the subject's response to environmental pressure with feelings of expansion and aggression (Levy, 1959).

Levy considers the average size of the figure to be either 15 cm or 2/3 the size of the available place. When the mean height of the figure each group drew in this study was studied it was seen that the institutionalized group had a mean of 6.77 cm. The low SES family-reared group had a mean of 7.86 and the high SES family-reared children had a mean of 10.96 cm. Thus, it is obvious that although none of the three groups have reached the average size determined by Levy, the institutionalized and low SES children draw definitely smaller figures than the third group. In Koppitz' Emotional Indicators list the frequency of these two groups' drawing a "tiny figure" is also high.

It was generally observed that the children in this Turkish sample avoided using a big space on the paper. This can be basically intepreted as indicating hidden feelings of inferiority or aggression, and that the institutionalized and lower SES children experience these feelings at a greater magnitude. Yet, when making the above interpretation, one should bear in mind the traditional conservativeness of paper usage in Turkey.

Levy claims that the use of the upper half of the paper indicates high standards of achievement, whereas use of the lower half indicates more stable, firmly rooted, calm and occasionally a depressed or defeated personality. The usage of the left side is considered to be a sign of an introverted, self-conscious personality, whereas the right side is considered to demonstrate negativism rebelliousness or an extraverted personality. Usage of the central part of the paper is considered to indicate a self-directed, self-centered personality.

The results of this study have shown the all the three groups in general preferred the upper and left portion of the paper. The usage of the lower half and right side slightly differed in the institutionalized group. Although this can be interpreted as indicating that Turkish children have high standards of achievement and that they are introverted, it can also be said that subjects are prone simply, to follow the rules of writing and utilize the paper starting with the

upper-left hand corner.

The preference for sex of the figure is considered to indicate the sex the children identify themselves with. Theoretically, the identification of sexual role is easier to realize for girls than boys, since the significant other is usually their mother. In the present study, too, it is observed that in all three groups, the girls had a higher percentage of figures of their ofn sex (See Table V). The high SES group had the highest percentage of drawings in which the sex of the figure was congruent with the child's sex. Although the institutionalized group drew pictures in line with their own sex, they had more drawings with no definite sex compared to the other groups. This can be interpreted as indicating problems in their sexual identification, manifested by a deficiency in drawing the specific sex indicators.

When the results of this study are interpreted in the light of Koppitz' and Levy's concept of Emotional Indicators, it can be said that the institutionalized group is emotionally more disturbed and shows more maladjusted personality traits when compared to low SES and high SES family-reared groups. Although we can claim that maternal deprivation and the circumstances of institutionalization influence the personality and intellectual development of this group, we should also pay attention to the fact that mental and contagious illness, and sociopathic parents are present in their family histories. This fact draws our attention both to their deprived institu-

tionalized environment in the later years and the disadvantaged family atmosphere they have lived in before the age of 3 as the initiaters of their emotional problems.

CONCLUSION

The effect of maternal and stimulus deprivation on mental and personality development have been examined in the present study through the application of Koppitz' HFD test in three groups of children. The first group was made up of children who had left their families at an early age and have been reared in institutions. The institutionalized group was observed to be the most affected group, showing a lower level of intellectual development compared to the other two family-reared groups. The second group, that is the low SES family-reared children, did not show any significant mental retardation, yet when compared with high SES family-reared children they showed less cognitive ability. This suggests that insufficient environmental stimuli negatively affects intellectual development.

When the personality development of the three groups was studied it was observed that the institutionalized group was more emotionally disturbed and maladjusted. In the other two groups; although no significant disturbance was observed it can generally be said that Turkish children are well-

behaved and inhibited in their aggressive impulses and thus present a well-behaved picture.

This study is supported by the results of other similar attempts which have tried to show the effect of socio-economic status on intellectual capacity. It has also taken a step towards determining the negative effects of institutionalization in Turkey, and the results are in line with other studies done abroad.

It is hoped that this study will be followed by more in-depth studies to determine the negative effects of institutions on child development and to search for ways of minimizing those effects. At a minimum, flexibilty in foster home and adoption regulations, as well as richer environmental stimuli and affective care can be suggested to better the present situation. A more functional curriculum can be applied to improve the cognitive ability of children in institutions and thus prepare a more secure future.

Another purpose of this study was to collect data to standardize the HFD test in Turkey. The data that were available while doing this study were insufficient; therefore the results of the present study can be used as data for future studies. It is believed that it is necessary to study the Expected and Exceptional items separately and to redefine them in terms of sex and age in standardization of the HFD test for Turkey.

REFERENCES

Ataman,I. and Epir,S. Age, Socio-economic Status and Classificatory Behavior among Turkish Children. pp.329-337. in L.J.Cronbach and P.Renth (Eds.) Mental Test and Cultural Adaptaion. The Hague; Mouton Publ., 1972.

Bowlby,J. Grief and Moorning in Infancy and Early Childhood. Freud et al (Eds.) The Psychoanalytic Study of the Child. Volume XV. New York: International Universities Press, 1960, 9-53.

Bronfenbrenner,U. Early Deprivation in Monkey and Man. Influences on Human Devleopment. The Dryden Press Inc. Illinois, 1972.

Cansever,G. Psychologic Effects of Circumcision. Brit. J. of Med. Psychology, 1965, 38, 321-331.

Dennis,W. The Performance of Hopi Children on the Goodenough Draw-A-Man Test. J. Comp. Psychol., 1942, 34, 341-348.

Dennis,W. Group Values through Children's Drawings. N.Y., Wiles, 1966.

Dennis,W. Children of Creche. N.Y.; Appleton Century-Corfts, 1973.

Erickson,E.H. Insight and Responsibility. N.Y.; Norton, 1964.

Goldfarb,W. Infant Rearing and Problem Behavior. Ame. J. of Ortopsychiatry, 143 a, 4, 249-265.

Goldfarb,W. The Effects of Institutional care on Adolecent Personality. J. Exp. Edu., 1943 b, 12, 106-129.

Goodenough,F.L. Measurement of Intelligence by Drawings. N.Y.; Harcourt, Brace and World Inc., 1926.

Harlow,H.F. and Zimmermann,R.R. Affectional Responses in the Infant Monkey. Science, 1959, No.3373, 130, 421-432.

Harlow,H.F. and Harlow,M.H. Learning to Love. Ame. Scientist, 1966, 54, No.3, 224-272.

Harris,D. Children's Drawings as Measures of Intellectual Maturity. N.Y.: Harcourt, Brace and World, 1963.

Kağıtçıbaşı,Ç. The Effects of Socio-economic Development on Draw-a-man Scores in Turkey. J. of Social Psychol., 1979, 108, 3-8.

Koppitz,E.M. Psychological Evaluation of Children's Human Figure Drawings. N.Y.: Grune and Stratton, 1968.

Korner,F.A. and Grobstein,R. Visual Alertness as related to soothing in Neonates: Implications for maternal stimulation and early deprivation. pp.43-51 in T. Spencer and N.Kass (Eds.) Perspective in Child Psychology Research and Review. McGraw-Hill Book Comp. New York, 1970.

Levy,S. Figure Drawing as a Projective Test. pp.257-297 in L.E.Abst and L.Bellak (Eds.) Projective Psychology. N.Y.: Grone Press, Inc., 1959.

Machover,K. Human Figure: A method of personality investigation. pp.341-369 in H.H.Anderson and G.L.Anderson (Eds.) Introduction to Projective Techniques. N.Y.: Prentice Hall Inc., 1952.

Neubauer,P.B. Normal Development in Childhood. pp.28-36 in Wolman and Benjamin (Eds.) Manual of Child Psychopathology. N.Y.: McGraw-Hill Book Comp., 1972.

Okman,F.G. Psychopathology and the Turkish Family. Indiana University Turkish Studies Series, Bloomington, Ind., 1982.

Öztürk,F. Ankara "Yapracık" Sağlık Ocağı Bölgesi Köy Toplumu Çocuklarında Zekâ Bölümü Çalışmaları. Ankara: Hacettepe Üniversitesi Tıp Fakültesi Psikiatri Bölümü, Uzmanlık Tezi, 1972.

Provence,S. and Ritvo,S. Effects of Deprivation on Institutionalized Infants. Freud et al. (Eds.) The Psychoanalytic Study of the Child. Volume XVI. N.Y.: International Universities Press, 1961, 189-205.

Rheingold,H.L. The Measurement of Maternal Care. Child Development. 1960, 31, 567-575.

Schecter,D.E. Infant Development. pp.268. in S.Arieti (Eds.) American Handbook of Psychiatry, Volume I, N.Y.

Spitz,R.A. and Wolf,K.M. Anaylitic depression: an inquiry into the genesis of psychiatric conditions in early childhood. Freud et al. (Eds.) The Psychoanalytic Study of the Child. Volume II. N.Y.: International Universities Press, 1946, 313-342.

Spitz,R. Discussion of Dr.Bowlby's Paper. Freud et al. (Eds.) Psychoanalytic Study of the Child. Volume XV. N.Y.: International Universities Press, 1960, 85-95.

Spitz,R. Hospitalism. An Inquiry into the Genesis of Psychiatric Conditions in Early Childhood. pp.202-224 in V. Bronfenbrenner (Eds.) Influences on Human Development, The Dryden Press Inc. Illinois, 1972.

Vaman,P. A Normative Study of Goodenough-Harris Drawing Test on a Turkish Sample. pp.365-373. in L.J.Cronbach and P.Drenth (Eds.) Mental Tests and Cultural Adaptation, The Hauge, Mouton Publ., 1972.

Yarrow,L.J. Maternal Deprivation. Psychological Bulletin, 1961, 58, No.6, 490-559.

Yarrow,L.J. Research in Dimentions of Early Maternal Care. Merrill-Palmer Quarterly, 1963, 9, 101-114.

Yörükoğlu,A. Yuva Çocuklarında Ruh ve Beden Gelişmesi Özellikleri. Çocuk Sağlığı ve Hastalıkları Dergisi, 1968, 11, 70-78.

APPENDIX - A

Distribution of Subjects in Each Group by Sex and Age

AGE	GROUP I		GROUP II		GROUP III		
	Girls	Boys	Girls	Boys	Girls	Boys	
7	9	7	10	10	10	10	56
8	5	11	10	10	10	10	56
9	7	14	10	10	10	10	61
10	4	13	10	10	10	10	57
	25	45	40	40	40	40	

$N_1 = 70$

$N_2 = 80$

$N_3 = 80$

$N = 230$

APPENDIX - B-I

Frequency and Percentage of Each Emotional Indicator in Groups

Emotional Indicators	GROUP I		GROUP II		GROUP III	
	Freq.	%	Freq.	%	Freq.	%
Poor Integration	43	22.1	24	21.2	15	15.0
Shading of face	1	0.5	-	-	-	-
Shading body/limbs	1	0.5	8	7.1	7	7.0
Shading hands/neck	-	-	2	1.8	3	3.0
Gross asymmetry	7	3.6	2	1.8	-	-
Slanting figure	9	4.6	2	1.8	1	1.0
Tiny figure	26	13.3	23	20.4	7	7.3
Big figure	1	0.5	2	1.8	2	2.1
Transparencies	2	1.0	2	1.8	3	3.1
Tiny head	1	0.5	-	-	-	-
Crossed eyes	-	-	-	-	-	-
Teeth	5	2.6	-	-	3	3.1
Short arms	21	10.8	21	18.6	21	21.9
Long arms	2	1.0	2	1.8	2	2.1
Arms clinging	3	1.5	1	0.9	9	9.4
Big hands	1	0.5	-	-	-	-
Hands cut-off	6	3.1	8	7.1	5	5.2
Legs pressed	-	-	-	-	5	5.2
Genitals	-	-	-	-	3	3.1
Monster/Grotesque	1	0.5	-	-	-	-
3 more figure	10	5.1	4	3.5	5	5.2
Clouds, rain, snow	4	2.1	-	-	-	-
No eyes	3	1.5	-	-	-	-
No nose	14	7.2	5	4.4	2	2.1
No mouth	10	5.1	2	1.8	-	-
No body	4	2.1	-	-	-	-
No arms	7	3.6	2	1.8	-	-
No legs	3	1.5	-	-	-	-
No feet	4	2.1	-	-	2	2.1
No neck	6	3.1	3	2.7	1	1.0
	N=195	100	N=113	100	N=96	100

APPENDIX - B-II

Percentage of Subjects Exhibiting Seven Most Frequently Occuring Emotional Indicators, by Groups

Emotional Indicators	GROUP I	GROUP II	GROUP III
Poor Integration	22.1	21.2	15.0
Tiny Figure	13.3	20.4	7.3
Short Arms	10.8	18.6	21.9
Shading body/limbs	0.5	7.1	7.0
Hands cut off	3.1	7.1	5.2
3 or more figures	5.1	3.5	5.2
No nose	7.2	4.4	2.1
No mouth	5.1	1.8	0
Slanting figure	4.6	1.8	1.0
Arms Clinging	1.5	0.9	9.4

APPENDIX - C

Scoring Manual for 25 Developmental Items on HFDs of Children

1- Head: Any representation, clear outline of head required

2- Eyes: Any representation

3- Nose: Any representation

4- Mouth: Any representation

5- Body: Any representation, clear outline necessary.

6- Legs: Any representation; in case of female figures in long skirts this item is scored if distance between waist and feet is long enough to allow for legs to be present under the skirt.

7- Arms: Any representation.

8- Feet: Any representation.

9- Arms 2 dimension: Both arms presented by more than a single lines.

10- Legs 2 dimension: Both legs presented by more than single lines.

11- Hair: Any presentation or hat or cap covering head and hiding hair.

12- Neck: Definite separation of head and body necessary.

13- Arm down: One or both arms pointing down at an angle of 30^{o} or more from horizontal position, or arms ralsed appropriately for activity figure is engaged in; arms extending horizontally from body and then turning down

some distance from the body is not scored.

14- Arms at shoulder: Indication of shoulder necassary for this item, arms must be firmly connected to body.

15- 2 clothing items: The following items are scored for clothing: pants, skirt, shirt, or blouse (upper part of dress separated by belt is scored as blouse), coat, hat, helmet, belt, pipe, cigarette, umbrella, cane, gun, rake, shoes, socks, pocketbook, briefcase, bat, gloves, etc.

16- Knee; Distinct angle in one or both legs (sideview) or kneecap (frontview); round curve in leg not scored.

17- Profile: Head drawn in profile even if rest of figure is not entirely in profile.

18- Elbow: Distinct angle in arm required; rounded curve in arm is not scored.

19- Two lips: Two lips outlined and separated by line from each other; two rows of teeth only are not scored.

20- Nostrils: Dots or nostrils shown in addition to presentation of nose.

21- Proportions: Figure looks right even if not entirely correct from anatomical point of view.

22- 4 clothing items: Four or more of items listed above present.

23- Feet 2 dimension: Feed extending in one direction from heel (side view) and showing greater length than height, of feet drawn in perspective (front view).

24- Five Fingers: Five fingers on each hand or arm unless position of hand hides some fingers.

25- Pupils: Distinct circles or dots within outlines of eyes required. A dot with a line over it is scored as eyes and eyebrows.

APPENDIX - D

Expected and Exceptional Items According to Age and Sex

Expected Items	Age 5		Age 6		Age 7		Age 8		Age 9		Age 10		Age 11 & 12	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
N	128	128	131	133	134	125	138	130	134	134	109	108	157	167
Head	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Eyes	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nose	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mouth	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Body	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Legs	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Arms		X	X	X	X	X	X	X	X	X	X	X	X	X
Feet				X	X	X	X	X	X	X	X	X	X	X
Arms 2 dimension					X	X	X	X	X	X	X	X	X	X
Legs 2 dimension						X	X	X	X	X	X	X	X	X
Hair				X		X		X		X	X	X	X	X
Neck										X	X	X	X	X
Arm down											X	X	X	X
Arms at shoulder														X
2 clothing items												X		X
Exceptional Items														
Knee	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Profile	X	X	X	X	X	X	X	X	X	X		X		
Elbow	X	X	X	X	X	X	X	X	X					
Two lips	X	X	X	X	X	X	X		X		X			
Nostrils	X	X	X	X	X		X		X					
Proportions	X	X	X	X	X									
Arms at shoulder	X	X	X	X										
4 clothing items	X	X	X	X										
Feet 2 dimension	X	X												
Five fingers	X													
Pupils	X													

APPENDIX - E

Interpretation of Individual HFD Scores in Terms of Level of Mental Ability

HFD Score	Level of Mental Ability
8 or 7	High Average to Superior (IQ 110 upward)
6	Average to Superior (IQ 90-135)
5	Average to High Average (IQ 85-120)
4	Low Average to Average (IQ 80-110)
3	Low Average (IQ 70-90)
2	Borderline (IQ 60-80)
1 or 0	Mentally Retarded or functioning on a retarded level due to serious emotional problems (IQ less than 70)

APPENDIX F

Scoring Manual for 30 Emotional Indicators on HFDs of Children

1- Poor integration of parts (Boys 7, Girls 7): One or more parts not joined to rest of figure, part only connected by a single line, or barely touching.

2- Shading of face: Deliberate shading of whole face or part of it, including "freckles", "measles", etc.; an even, light shading of face and hands to represent skin color is not scored.

3- Shading of body and/or limbs (Boys 9, Girls 8).

4- Shading of hands and/or neck (Boys 8, Girls 7).

5- Gross asymmetry of limbs: One arm or leg differs makedly in shape from the other arm or leg. This item is not scored if arms or legs are similar in shape but just a bit uneven size.

6- Slanting figures: Vertical axis of figure tilted by 15° or more from the perpendicular.

7- Tiny figure: Figure two inches or less in height.

8- Big figure (Boys and Girls 8): Figure nine inches or more in height.

9- Transparencies: Transparencies involving major portions of body or limbs single line or lines of arms crossing body not scored.

10- Tiny head: Height of head less than one-tenth of total figure.

11- Crossed eyes: Both eyes turned in or turned out; sideway glance of eyes not scored.

12- Teeth: Any representation of one or more teeth.

13- Short arms: Short stubs for arms, arms not long enough to reach waistline.

14- Long arms: Arms excessively long, arms long enough to reach below knee or where knee should be.

15- Arms dinging to body: No space between body and arms.

16- Big hands: Hands as big or bigger than face of figure.

17- Hands cut off: Arms with neither hands nor fingers; hands hidden behind back of figure or in pocket not scored.

18- Legs pressed together: Both legs touch with no space in between, in profile drawings only one leg is shown.

19- Genitals: Realistic or unmistakably symbolic representation of genitals.

20- Monster or grotesque figure: Figure representing nonhuman, degraded or ridiculous person; the grotesqueness of figure must be deliberate on part of the child and not the result of his immaturity or lack of drawing skill.

21- Three or more figures spontaneously darwn: Several figures shown who are not interrelated or engaged in meaningful activity; repeated drawing of a boy and a girl or the child's family is not scored.

22- Clouds: Any presentation of clouds, rain, snow or flying birds.

23- No eyes: Complete absence of eyes, closed eyes or vacant circles for eyes are not scored.

24- No nose: (Boys 6, Girls 5)

25- No mouth

26- No body

27- No arms (Boys 6, Girls 5)

28- No legs

29- No feet (Boys 9, Girls 7)

30- No neck (Boys 10, Girls 9).