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# SOME PSYCHOLOGICAL DYNAMICS OF OBESITY IN CHILDHOOD: THE RELATIONSHIPS AMONG ANXIOUS ATTACHMENT, IMPAIRED SELF-IDENTITY, AND BODY IMAGE

Regina, Kay

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RELATIONSHIPS AMONG ANXIOUS ATTACHMENT, IMPAIRED SELF-  
IDENTITY, AND BODY IMAGE**

*California School of Professional Psychology, Los Angeles*

**PH.D. 1981**

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Some Psychological Dynamics of Obesity in Childhood:  
The Relationships among Anxious Attachment,  
Impaired Self-Identity, and Body Image

A dissertation submitted in partial satisfaction of the  
requirements for the degree Doctor of Philosophy  
in Psychology

by

Regina Kay

1981

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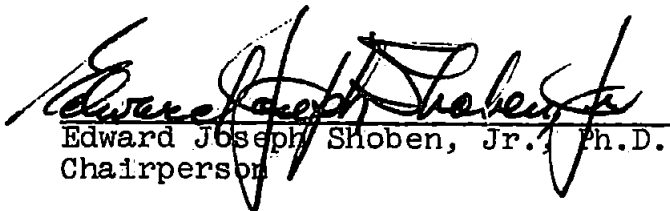
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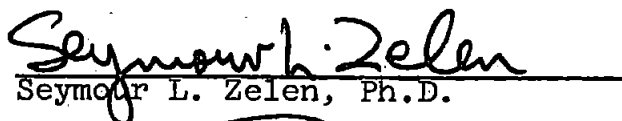
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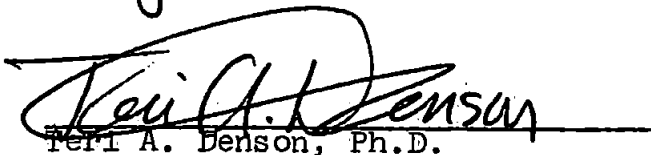
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1981

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ABSTRACT OF THE DISSERTATION

Some Psychological Dynamics of Obesity in Childhood:

The Relationships among Anxious Attachment,

Impaired Self-Identity, and Body Image

by

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Doctor of Philosophy in Psychology

California School of Professional Psychology, Los Angeles

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Edward Joseph Shoben, Jr., Ph.D., Chairperson

The psychological dynamics of obesity in children were studied from the viewpoint of Bowlby's (1969; 1973) attachment theory. Literature was reviewed which reported a lack of self-differentiation in the obese which is consistent with anxious attachment. Underdifferentiation causes conceptual confusion about bodily needs and states resulting in external directedness that is reflected both in eating as a response to environmental cues and in field dependence. Studies implicate overprotective, age-inappropriate, and indulgent parenting in the development of both obesity and field dependence. Such parenting is typical of anxious attachment which was posited in this study as a psychological component in the etiology of obesity in childhood.

It was hypothesized that obese children are more anxiously attached, have poorer self-concepts, are more field dependent, and have greater body image distortion than non-obese children. The principal instruments administered were: The Hansburg Separation Anxiety Test (HSAT), Piers-Harris Children's Self-Concept Scale, MMPI Lie Scale, Embedded Figures Test, Body Image Disturbance Scale, and a Behavioral Checklist (BCL) for anxious attachment.

The HSAT did not discriminate between the two groups, but the obese were significantly more anxiously attached than the non-obese on the BCL. The groups did not differ in self-concept, a finding which may be mitigated by the obese children's higher Lie Scale scores which indicate they may be less frank as to their feelings about themselves. The obese were more field dependent and displayed greater body image distortion.

Anxious mother-child attachments can contribute to the development of obesity by limiting children's motility, causing them to be overfed due to neurotic anxiety in the mother, and preventing the establishment of good peer relations so that children overeat to comfort themselves. Maternal denial of the separateness of the child and limitations on the child's activities prevent the development of an adequate body image so that the self is not adequately differentiated from the mother-child dyad. The child

remains externally directed, field dependent, and fails to learn to eat in response to nutritional rather than emotional need.



CHAPTER I  
OBESITY IN CHILDHOOD AS A  
PSYCHOLOGICAL PROBLEM

Obesity is defined as excess body weight of 20 percent or more. It is a persistent and prevalent problem in American society. According to Abraham and Nordsieck (1960), obesity is most chronic in those who become obese in childhood. Stunkard and Burt (1967) estimated the probability at 4 to 1 that one will not be a normal weight adult if one was obese in childhood; the chances approach 28 to 1 if one has not reduced to normal weight in adolescence.

Several investigators of obesity have found that the obese display perceptual, conceptual, and affective impairment of their self-identity, including confusion about their bodily states. For example, obese persons tend not to be able to discriminate when they are physiologically hungry from when they are satiated. Instead, they seem to eat in response to external rather than internal, interoceptive cues. They err in estimating their bodily characteristics, a major part of one's self-identity. Their human figure drawings frequently are grossly inadequate relative to their intelligence. They also exhibit a greater degree of field dependence; this is a global, undifferentiated cognitive style marked by greater reliance on external and visual rather than on internal and kinesthetic cues in

performing a perceptual task. Additionally, the obese express a sense of lacking autonomy and of ambiguity about their own feelings. Bruch (1973) regarded this lack of differentiation of the self as related to infantile learning experiences in which the cues of the infant as to its bodily states and needs have been either ignored or misinterpreted by the primary caregiver. Bruch contended that such inappropriate environmental responses result in the faulty learning of bodily states, impaired development of the body image, a decrement in self-initiated activities, and consequent difficulties in individuating the self.

It is the purpose of this study to examine this apparent lack of self-differentiation in obese children from the standpoint of attachment theory (Bowlby, 1969; 1973). Attachment theory holds that appropriate early mother-child interactions and affectional bonding provide the child with a secure base from which to explore the world. They are an important determinant of an adequate sense of self and self-esteem. The literature on obesity generally depicts mothers of obese children as overprotective, apt to deny or be unaware of their children's growing autonomy, and prone to discouraging exploration and motility. From the viewpoint of attachment theory, such maternal behaviors can be considered to be pathological and may reflect an anxious mother-child attachment; this can foster high levels of separation anxiety in the children. Such anxiety leads,

in turn, to difficulty in individuating the self out of the mother-child dyad.

In support of this hypothesis that the impaired development in the self-identity in obese youngsters is related to the anxious nature of the mother-child attachment, studies are reviewed here which document confusion in the perception of the personal body as a referent for the self. These areas of confusion include (a) misperception of internal states of nutritional need so that eating is externally cued, (b) relative under-development of the body image as shown by difficulties in estimating personal body size, (c) difficulties in making human figure drawings, and (4) field dependence, a global perceptual style that results from poor definition of the postural body image and/or failure to utilize the body as a referent in perception. In addition, literature on both the parenting practices of the mothers of obese children and the conceptual framework of attachment theory is reviewed.

## CHAPTER II

### REVIEW OF THE LITERATURE

#### Externally Cued Eating Patterns in the Obese

As early as 1961, Hilde Bruch noted that her analysands who had become obese as children did not know when they were hungry and when they were satiated. Stunkard and Koch (1964) subjected this observation to empirical verification by having obese and non-obese subjects swallow balloons to monitor their gastric motility for the purpose of comparing their actual stomach contractions to their self-reports about whether or not they felt hungry. Both the obese and the non-obese groups reported hunger 38 percent of the time when their stomachs were not contracting. The groups differed significantly, however, in reporting hunger when their stomachs were contracting. Normals reported hunger coinciding with gastric motility 71.1 percent of the time compared to 47.7 percent of the time for the obese. The researchers found that the difference between the groups was not due to defective visceral sensorium in the obese because they did improve with training.

In 1964, Schachter conducted a somewhat different investigation on non-obese subjects which nevertheless clarified Stunkard and Koch's results. Schachter used the administration of adrenaline to generate sympathetic nervous

system arousal in his subjects. Because the subjects interpreted the drug effects as representing diverse emotional states, Schachter concluded that cognitive factors were an important component in how bodily feelings are interpreted. He reviewed Stunkard's results and surmised that what was true of exogenously induced bodily states, as reported in his own experiment, was also true of such endogenously occurring sensations as gastric motility. Schachter posited that the obese erred in recognition of gastric motility because they had not learned to identify gastric motility with the psychological state of being hungry. Schachter further asserted that the obese ate in response to external cues because their internal visceral sensations were not an adequate guide for them in deciding when or how much to eat. To test this thesis, Schachter and Gross (1968) manipulated the external cue of elapsed time by altering clocks to create two experimental conditions. In one condition, obese and non-obese subjects believed they were eating at a time later than usual. In the other condition, they believed they were eating earlier than usual. The obese subjects, as predicted, ate more when they believed they were eating dinner late than when they thought they were eating dinner early. The quantity eaten by the non-obese groups in each condition did not differ significantly.

In another study (Schachter, Goldman, and Gordon, 1968), Schachter manipulated the internal state of physiological

hunger by setting up separate experimental conditions in which subjects had been either prefed or deprived of food for a number of hours. As predicted, the obese ate more than the non-obese when prefed. In fact, the obese ate more when prefed than when deprived of food, whereas the non-obese ate less when prefed than when food-deprived.

Additional studies of externally cued eating in the obese have been reported by Nisbett. In one, he (1968a) postulated a cause and effect relationship between external directedness and the overeating which results in obesity. Using taste as the criterion of external directedness, it was expected that the obese would be more influenced by taste than by hunger in the quantity of food ingested. Regular ice cream and ice cream adulterated with quinine were offered in separate experimental conditions to obese and non-obese subjects. As hypothesized, the obese ate more than the non-obese only when they liked the taste. When they did not like the taste, the obese ate about as much as normals. These results must be interpreted with care, however, because they are based on a small sample size; moreover, the criteria by which subjects were categorized as obese and non-obese, the source of the subject pool, and the extent of the corpulence of the obese subjects were not revealed.

In a second study (1968b), Nisbett avoids these methodological flaws. He predicted that the obese subjects would

eat more when presented with a greater number of food cues. As expected, when offered three sandwiches, the obese ate more than the non-obese. When offered only one sandwich but told others were available in the refrigerator and to help themselves, the obese ate less than the non-obese. This result supported the contention that the immediacy and strength of the food cue is an important determinant of eating in the obese. To ensure that the obese subjects' behavior was not inhibited by concerns that their eating was being observed, the subjects were left in privacy and were not told that eating behavior was being studied.

Further research on the subject was undertaken by Schachter in 1971. When obese and non-obese subjects were offered shelled or unshelled almonds in separate conditions, the number of non-obese subjects eating nuts did not differ whether the nuts were shelled or unshelled. However, while 19 out of 20 obese subjects ate nuts without shells, only one ate them with shells. Schachter concluded that the potency and immediacy of the food cue are important in stimulating obese persons to eat.

Morck (1976) criticized Schachter's 1971 study as failing to allow for the alternative explanation that fewer obese subjects ate almonds with shells because the shells leave evidence of the quantity eaten. Positing that the obese are under great social censure and pressure from others, she contends that the obese may eat differently

when under conditions of observation by others. This apt observation seems however not to explain Schachter's finding that most obese subjects did not eat when the nuts had shells whereas most did eat them when they were without shells. While it was demonstrated that the shells left after the nuts in the with shells condition were consumed would leave a cue as to how many had been ingested, even in the no shells condition the number of nuts missing would also offer a cue as to how many had been eaten. It may be argued, however, that the presence of shells is a more obvious cue to the quantity eaten. But Nisbett's (1968b) finding that the obese did not eat so many sandwiches when they had to get additional ones from a refrigerator--even through they were in privacy, expected to be unobserved, and believed eating behavior was not the subject of the study--would seem to have controlled for the effect, if any, of social desirability.

An important methodological shortcoming of all of these studies has been the lack of control for the age of onset of obesity. There are indications that the age of onset may be an important dimension (Bruch, 1973; Stunkard and Burt, 1967). Bruch (1973) pointed out that all the subject pools consisted of college students under the age of 26; the obese subjects in each case were probably obese since childhood. This contention is based upon the relative



rarity of reactive obesity--obesity beginning in adult life--before middle age.

The Role of Learning in the  
Development of Externally-  
Cued Eating

Based upon the empirical evidence reviewed above that the obese eat in response to external cues, Bruch (1973) as well as Schachter et al. (1968) independently posited that faulty learning in the early feeding situation is responsible for the failure of obese children to learn to eat in response to nutritional need. The role of early learning in the development of appropriate eating behavior has been illuminated by ethological studies and by observation of human neonates.

Wolff (1966) observed human neonates by using time elapsed since the last feeding as an index of hunger. He describes the infants as initially responding to hunger by movements which seemed directed toward obtaining food. If the environment did not respond with food immediately, however, the infant's actions became more diffuse and non-specific. Wolff concluded that more specific goal-directed food-seeking behaviors are a function of learning, i.e., the interaction between the infant and the environment. In similar work, Kron (1968) observed sucking behaviors in human neonates and concluded that maternal sensitivity to changes in the baby's need states is necessary for

sucking behavior to become linked with hunger. The caregiver must be very sensitive to the baby's needs and cannot rely upon the infant's sucking behavior alone as a clue to its hunger because sucking behavior is not continuous with hunger in infants. Feeding experiences must be paired with physiological hunger in the infant, according to Kron, for the infant to learn to seek food in response to internal sensations.

As a whole, these studies refute the longstanding belief that infants are born with innate food-seeking behaviors which had some organization. At best, this is only partly true because incipient food-seeking in the infant is quickly abated by exhaustion if the infant is not fed immediately.

The lack of a pattern of innate organized food-seeking behaviors seen in studies of human infants has also been found among animals. Hebb (1949), for example, asserted that learning was involved in hunger because hunger disorganized behavior in very young mammals. According to Hebb, it is only as a result of learning that the rat comes to deal with hunger by organized food-seeking. Monkeys reared in isolation are particularly relevant to an inquiry into whether appropriate eating is learned. Such isolates have never had appropriate environmental responses to their hunger as they have been reared with self-feeding devices. Isolate monkeys show faulty learning of the eating function

as they ingest twice as much food and liquid as non-isolates (Miller, Mirsky, Caul, and Sakata, 1969). Isolated baboons behave similarly. When allowed to self-feed a liquid diet or when offered unlimited food, isolates grow visibly fat while non-isolates do not. Such animal studies also support a view of appropriate eating as a learned function.

Based on observations of the human mother-child interaction in the feeding situation throughout the first three months of life, Ainsworth and Bell (1969) reported a relationship between maternal feeding practices and the weights of the babies. They found that mothers who overfed did so either to make the baby sleep longer or because they misread a broad range of cues as indicating hunger. Bruch and Schachter both have concluded that it is this kind of misreading of infant cues to internal states that causes the child who later becomes obese to fail to learn to eat in response to internal, interoceptive cues. Moreover, according to Mahler and Furur (1963), it is the mother's willingness to acknowledge and her ability to discern her baby's growing autonomy by responding appropriately to the infant's cues that contribute to the baby's increased capacity to distinguish inside from outside, self from object, and self from non-self. On the basis of such learned discriminations, accurate perception of self-body boundaries emerges from the mother-child dyad. Based upon Ainsworth and Bell's (1969) findings that most mothers who overfeed do so because

they misread the baby's cues, it seems plausible that babies who later become obese have had poor environmental reinforcement for their self-initiated activities and crying. The poor body-self boundaries which may result may contribute to the relative inability to discern visceral motility as a need to eat.

#### Deficiencies in the Body Image in the Childhood-Onset Obese

The psychological construct of the body image may be said to have begun with Freud's (1927) observation that "The ego is first and foremost a body ego" (p. 31). As early as 1912, however, Adler's (1912/1956) construct of organ inferiority recognized the body as an object in the perceptual field and implied that attitudes toward the personal body formed part of the self-concept and were compensated for in the entire personality. Paul Schilder (1935/1950) formalized the concept of the body image and stated, "There is no body image without personality" (p. 282). Lewis (1958) pursued this recognition of the role of the body image in the personality development by asserting that "The body image is the self-image in postural, visceral, and kinesthetic terms." The body image has remained an extremely fluid concept and has been defined in perceptual, conceptual, and affective terms (Shontz, 1969).

In research intended to find interrelationships among these various aspects of body image, Cardone and Olson

(1973) found that there is no unitary construct of the body image. Wylie (1961) described the body image as having both conscious and non-conscious elements with the non-conscious regarded as more important. Fisher and Cleveland (1965) have stated that the body is both the subject and the object of perception so that the subjective experience of the body is a major form of self-representation. According to L. S. Kubie (1953), the body image defines the "me" from the "not-me." Mahler and Furer (1963) also describe the development of the body-boundary scheme as a differentiation of inside from outside and self from object. Winnicott (1953; 1960) described the body scheme as both the product of and the very means by which the infant distinguishes "me" from "not-me." Witkin (1965) also conceived of the body scheme as that which separates inside from outside, leading to a sense of the self as separate from the environment.

Motility is considered to be an important component in the development of the body image. Schilder (1935), the seminal body-image theorist was among the first to stress the role of motility in developing the postural model of the body. In Werner and Wapner's (1949; 1952) sensory-tonic theory, perception is conceived of as the interaction of body movement and sensation with the environmental field. Werner and Wapner (1952) and Wapner, Werner, and Comalli (1958) described the body as constantly interacting with

environmental stimuli in the process of perception. Body movement and resulting muscle tonus are major contributors to the perception of verticality in empirical studies conducted by these investigators. Furthermore, sensory stimulation, such as light stroking of a body part, alters the perception of the environmental field surrounding the body. Wapner and Werner (1965, p. 10) stated that the body image develops in interaction between self and environmental objects, and the body image reflects "The degree of articulation between self and the world."

There has, thus, been considerable inquiry into the body image of obese people. The failure to identify correctly interoceptive cues to hunger is only one instance of deficient body image development in the obese. Most research into body image in the obese has clustered around three elements: the self-perception of body girth, human figure drawings, and the field dependence-independence typology--all of which are separately reviewed below.

#### The Self-Perception of Bodily Girth in the Obese

Investigation into the self-perception of body girth in the obese arose in response to findings by Bruch (1953) that those who become obese in childhood have profound anxiety related to the loss of body substance as they lose weight. Grinker, Hirsch, and Levin (1973) have found that it is those who become obese as children who express a

concern with changes in bodily size and who report feelings of depression, distrust, and anxiety as they lose weight. Subjects who become obese in adulthood generally report no such symptoms, although a few subjects have expressed such concerns over a limited period of time. These symptoms are chronic among cases of obesity originating in childhood. In response to these findings, further inquiry was undertaken by Stunkard and Mendelson (1967) and Stunkard and Burt (1967). These investigators found that the lifelong obese tend to consider that their body size is the cause of all their problems. These findings spurred other investigators to further inquiry into the nature of self-perception of bodily girth.

Several researchers have investigated by various methods of direct measurement the self-perception of body girth in obese subjects. Cappon and Banks (1968) consider such study of "Direct body perception [to be] a verifiable parameter of the so-called body image" (p. 466). For their own study, these authors used a measurement procedure in which 23 lifelong obese and 23 non-obese subjects were asked to judge their own body width and thickness in a darkened room. As the experimenter stood behind the subject and moved two points of light along a horizontal 5-foot bar, the subject was instructed to stop the experimenter when the distance between the lights corresponded to the subject's estimate of personal body girth or

thickness. Three trials on each dimension were taken, first on an ascending and then on a descending scale. One-way analysis of variance revealed reliable differences between the obese group and the non-obese comparison group, both on width and thickness judgments. Obese subjects consistently were inclined to overestimate body width and thickness compared to non-obese subjects. Since all the obese subjects had been drawn from a weight-reduction self-help group or from physicians specializing in weight reduction, there may be selection biases in this sample toward persons concerned about size.

Glucksman and Hirsch (1969) defined "body size" as the "subjective estimation of total body girth or area" (pp. 1-2) and used an anamorphic lens technique to measure body size perception in obese subjects before, during, and after weight reduction. The subjects were three male and three female severely obese subjects who were voluntarily hospitalized for weight reduction. All had been obese since childhood and had never succeeded in losing weight. To function as a comparison group, three male and one female patients with elevated cholesterol levels were maintained at admission weight on the same diet and in much the same circumstances as the obese patients. Weekly tests were made of body size perception using the lens which adapts a slide projector so that body girth can be distorted in the direction of either thinness or obesity. They were



also shown a distorted inanimate object as a control for actual perceptual acuity. Subjects were shown their own image initially distorted as too thin or too obese and were given several trials in each condition in which to adjust it mechanically until the picture looked the way they looked to themselves. No visual cues were available. A control task of correcting for a distorted object was administered each time. Analysis of variance confirmed that the obese differed initially in body size perception from the non-obese, but the difference was nonsignificant. As they reduced by a mean weight loss of 86.7 pounds, however, the obese continued to see themselves as though they had not lost weight at all. This result was significant. There was no difference in their perception of the inanimate object's dimensions as they either maintained or lost weight. Despite this study's strength in having a control perceptual task to eliminate poor perceptual acuity as an explanation for the overestimation of bodily girth, the extremely small sample size and hospitalized condition of the subjects markedly restricts the generalizability of this study.

In Germany, Meyer and Tuchelt-Gallwitz (1969) used a range of photographs, with identifying features removed, to test the accuracy of personal body perception in 69 obese and 39 comparison normal-weight subjects. All the subjects were female, and the obese were more than 30 percent above their desired weights. The procedure used is called the

Persona Test of Gottschaldt and required the subjects to identify their own photographs from among 17 showing a range of body width. The obese subjects reported that the photographs all seemed to look alike even though the authors contend that these subjects' obesity should have made it easier for them to identify their own photographs. While 78 percent of the non-obese could identify their own photographs or a photograph within a range of plus or minus 3 percent of the body size of their own photograph, only 56 percent of the obese could do so. Five percent of the obese identified photographs as their own which were actually more than 12 percent larger than their own body size. The authors cautioned that this test measures visual self-concept and may not be analogous to other aspects of body image. Meyer and Tuchelt-Gallwitz did not use a control for perceptual acuity in their subjects, and they neither provided clear explanations of the source of subjects nor statistical support for their contention that those who were obese before maturation showed distorted body perception.

Shipman and Sohlkhah (1967) used a flexible mirror device that adjusts to distort only the width of the lower torso. They compared 37 obese and 20 non-obese white women between the ages of 20 and 45. They matched the groups for age, education, intelligence, and marital and socioeconomic status. The obese tended to make themselves appear very

much broader in the mirror than they were objectively. In contrast, the non-obese were markedly accurate in size estimates. Moreover, all the obese subjects were quite concerned with their size about which they frequently expressed strong feelings. The important variable of the age of onset of obesity was not considered, although the degree of the obese subjects' concern with their size probably indicates that they became obese in childhood. Although no control perceptual task with an inanimate object was administered, intelligence was controlled for as it might influence the accuracy with which subjects follow instructions.

Askevold (1975) developed a method of measuring body size self-perception which utilized a roll of paper on a wall and some colored pencils. The subject is asked to keep the pencils near the wall, to avoid reliance on cues from touching the body, and is requested to mark the paper to indicate distances between relevant parts of his or her own body. Compared to individuals with various kinds of physical problems such as genito-urinary diseases and chest or abdominal disorders, and to a control group comprised of physiotherapists, the obese subjects overestimated their body size more than did any other group except those with anorexia nervosa. This group of obese subjects was considered super-obese and so were probably obese since childhood although no other relevant data as to age of onset or other variables were given.

It is apparent from the consistency of the results of these studies that there is some impressive evidence that the obese do differ from the non-obese in their self-perception of body girth when tested in a variety of procedures. While most investigations have dealt with the severely obese who are most likely to have been obese since childhood, no research has controlled for and considered a range of ages of onset, leaving it unclear whether there is a critical period for the development of the distortion in the self-perception of body girth in the obese. Moreover, most samples have been self-selected, the participants having sought medical intervention for their weight. Their seeking medical help in reducing may indicate a special concern with their body size, perhaps to a greater degree than obese persons who do not come to such programs for weight control. This inference must be mitigated, however, with knowledge that many participants in such programs are only semi-voluntary as pressure from physicians and family members, especially in relation to health problems, have led them to join these programs. Their participation may therefore reflect medical exigencies and social pressure as much as concern about body size and appearance.

Shontz (1969) has set as a criterion for studies of self-perception of the body that a control task be given to identify any defects in perceptual acuity. Only Glucksman and Hirsch met this criterion, but they failed to control

for intelligence and had a very small sample size. While Shipman and Sohlkhah controlled for intelligence, they did not test with a control object. Additional research is needed which controls for a range of ages at onset of obesity, tests with a control object, considers cultural variations in attitudes toward corpulence, and controls for intelligence. Moreover, the relationship between socioeconomic status and distorted body image perception in obesity should be examined systematically as there is some evidence (Stunkard, d'Aquili, Fox, and Fillion, 1975) that the lower classes are more tolerant of obesity. Replication and continuity in utilizing similar methods are also needed. Yet there are observable preliminary indications that the obese do differ from the non-obese in their perception of body girth.

#### The Body Image of the Obese as Reflected in Human Figure Drawings

Human figure drawings have been considered a means of assessing the body image ever since Schilder (1935/1950) declared, "The way in which children draw human figures really reflects their knowledge and sensory experience of the body image" (p. 106). Karen Machover (1949) also maintained that human figure drawings tap the "body meanings and attitudes that have come to be represented in . . . [the] body image" (p. 35).

The validity of the use of human figure drawings as an index of body image has at times been questioned. Researchers have noted that not all figure drawings represent the self, especially in children's drawings (Hammer, 1958; Schmidt and McGowan, 1959). Even when subjects are directed to draw someone else, however, their depictions of others are stylistically highly consistent with their drawings of themselves (Gellert, 1968). Disabled or disfigured persons often will not directly depict their physical problem in self-drawings, but some form of distortion usually occurs that makes it possible for even untrained raters to distinguish between disabled and nondisabled persons' drawings when blindly rating them (Abel, 1953; Schmidt and McGowan, 1959; Silverstein and Robinson, 1956). To explore whether the drawer seems spontaneously to draw his or her own body, Berman and Leffel (1953) examined the relationship between the body type of the figure drawing and that of the drawer and found a relationship which is significant between the .05 and .07 levels of significance.

Not only do human figure drawings indicate much of the morphology of the drawer even when the drawing is to depict another, but figure drawings are also highly stable. Levy (1958) has found that even art training does not alter the characterological aspects of human figure drawings. Faterson and Witkin (1970) followed the human figure drawings of children longitudinally over a 14-year span from

age 8 until they were 22. They found great consistency in the drawings over time.

The inter-rater reliability of human figure drawings (HFD) has been much studied. Even global assessments of HFDs by untrained persons have been shown to produce reliable ratings. Such raters show a high degree of concordance with each other in forming judgments independently, and they also are able to distinguish between pathological and non-pathological populations' drawings. In 1949, Albee and Hamlin demonstrated that clinical psychologists make even more reliable global ratings. In 1950, they also reported that the use of a criterion scale increases the inter- and intra-rater reliability of judgments of human figure drawings over procedures using global, subjective estimates. Moreover, they found that validity--matching drawings to actual case histories--is increased to a sufficiently high level. Lehner and Gunderson (1952) examined the inter-rater, intra-rater, and test-retest reliability of human figure drawings. Both intra- and inter-rater reliability appear quite high. Test-retest reliability is somewhat lower but still high enough for them to conclude that drawings remain fairly stable over time.

Several other researchers studied the HFDs of obese persons as an index of the body image. Kotkov and Goodman (1953) found that the drawings of obese women differ significantly from those of non-obese women especially as to

body size. Unfortunately, no data were provided on the age of onset or the criteria used to determine whether subjects were obese or non-obese. Gottesfeld (1962) found that the HFDs of his super-obese patients were so poor that the drawings appeared to have been drawn by mental defectives although the subjects had an average IQ of 102. In a blind rating procedure, the drawings of the obese were distinguishable from those of the non-obese at the .01 level of significance. Indeed, most of the judges' decisions as to whether the drawer was obese or non-obese were unanimous, even though the decisions were reached independently.

Nathan and Pisula (1970) examined the HFDs of obese adolescents before and after undergoing starvation treatment in a hospital. Both sets of drawings were so bad that the Goodenough-Harris rating method and norms indicated that the drawings failed to meet the minimum standards for drawings by 5-year-old children. In 1973, Nathan studied non-hospitalized but chronically obese children at three age levels--7, 10, and 13. Twelve obese and 12 non-obese children at each age level were matched for sex, social class, and intelligence. Compared to the HFDs of the non-obese, the drawings of the obese at all age levels tended to be inadequate-looking, immature, and undifferentiated as to gender. Some obese children at each age level produced stick-figure, one-dimensional drawings, whereas even the youngest non-obese child produced two-dimensional figures.



Many of the drawings showed excess body size, and many were described as primitive and lacked detail.

With the exception of Kotkov and Goodman's (1953) investigation which does not state where subjects were obtained, the above studies were all conducted on clinic populations of obese persons. Therefore, it may be expected that obese children in the larger population may produce HFDs which are somewhat less aberrant.

#### The Field Dependence-Independence Typology and Obesity

Witkin and Asch (1948) began work on the field dependence-independence typology by studying perception. Replicating some of Wertheimer's work in perception, they set up perceptual tasks which required their subjects to ignore confusing environmental cues in favor of reliance upon internal kinesthetic and postural or body image ones in performing a task. The original tasks consisted of the Body Adjustment Test (BAT)--which called for the subject to find the true upright body position by ignoring the tilt of the room, and the Rod and Frame Test (RFT)--which called upon the subject to ignore a visual illusion caused by the embedding of a rod in a tilted frame so that the subject had to use his or her body as a referent in finding the true vertical. By 1954, Witkin, Lewis, Hertzman, Machover, Meisser, and Wapner conceived of the differences subjects displayed on these tasks as indicative of a stable and

pervasive cognitive style. Those who were unable to ignore the external cues were considered to be field dependent which comprises the high-scoring end of a continuum; the low-scoring end represents success in using internal cues instead of external ones. Field-dependent persons are considered to have a global, unarticulated perceptual style. The field independent are described as analytical and well-differentiated in their perceptual approach to tasks.

The Embedded Figures Test (EFT) was developed as another means of testing field dependence-independence. It requires the subject to be able to disembed figures which are obscured by a confusing background. Witkin and his colleagues (Witkin, 1950; Witkin et al., 1954; Witkin, Dyk, Faterson, Goodenough, and Karp, 1962) used the original figures which Gottschaldt (1926) developed. They reasoned that the ability to separate a percept from its context was analogous to maintaining aspects of experience as separate and differentiated.

By 1962, Witkin and several co-authors had extended the typology from that of a cognitive style to the more theoretically complex dimension of psychological differentiation. Based upon the field-dependent scorer's reliance on external cues, it was hypothesized that the self was inadequately differentiated from the environment (Witkin et al., 1962). Support for this idea was derived from studies

of the interpersonal behavior and attributes of field-dependent and field-independent subjects. The researchers reasoned that the field dependence-independence dimension was a measure of the degree of complexity with which the subject organized and integrated his or her perceptions. They expected that those with the more global style would have less self-reliance, be more conforming, and they would, in general, rely more upon others because their self-representation and identity were less well organized. Their expectation that more field-dependent persons would be more conforming than others has been borne out, and field dependence has also been shown to be related to suggestibility and a more or less dependent orientation toward others (Witkin et al., 1962).

The family context from which field-dependent and field-independent persons emerge has also been studied (Witkin et al., 1962). The global style was related to maternal behaviors of overprotection, strong parental pressure for conformity, limitations upon the child's behaviors and activities due to parental anxiety that something will happen to the child, failure to allow and foster the child's assuming responsibility for himself or herself, and age-inappropriate physical caregiving by the parents. Maternal ambivalence toward the children, severe punishment coupled with maternal inconsistency and overindulgence, and the use

of irrational threats as a means of discipline are all implicated in the development of field dependence.

Witkin had initially expected to find a linear relationship between field independence and psychological health, and studies of the psychopathology associated with extreme field dependence and independence did not support this expectation. It has been demonstrated that field-dependent persons having emotional difficulties are inclined to use more global defenses and tend to be more impulsive, passive, and dependent. Field-independent people, in contrast, are more likely to use paranoid and compulsive defenses. When the field independent develop symptoms of distress, they are more apt to exhibit schizoid withdrawal and the development of schizophrenic symptoms. It appears that excessive field independence entails difficulties in integrating the self with the environment, whereas the extreme field dependence is associated with difficulties in retaining a sense of self-identity.

Sherman (1967), Maccoby and Jacklin (1974), and Morell (1976) have criticized Witkin's shift from viewing the typology as an aspect of cognitive style to considering it as an index of psychological differentiation. These researchers contend that the instrumentation for field dependence-independence may really measure actual visual-spatial perceptual ability. Their investigations show correlations between visual-spatial perceptual ability and

field independence. Furthermore, since the field independent have been demonstrated to be more comfortable in settings devoid of social cues than are the field dependent, the ease with which the field independent master the Rod and Frame and Body Adjustment tests may really be a function of their ease in such situations. The field dependent may do less well because the darkened condition of the room, and because the lack of social cues generate anxiety that adversely affects their performance. Another alternative explanation for the differential performance on field dependence-independence tasks is that of brain laterality; left hemispheric dominance could result in more field-independent performance and right hemispheric dominance in more field-dependent performance (Bakan, 1978; Rodin and Singer, 1977; and Pope and Singer, 1978).

Field dependence-independence has been studied in the obese. Nathan and Pisula (1970) used the Embedded Figures Test to study field dependence-independence in adolescents who were so obese that they had been hospitalized for a total fast to reduce weight. The researchers stated that many of the obese subjects found the Embedded Figures Test nearly impossible. Inasmuch as all of the obese subjects were of average intelligence, they should have been able to perform better upon the EFT which is correlated with overall intelligence; but because only eight female and seven male subjects were involved, the sample size is too

small for stable generalization. The hospitalized condition of the subjects also suggests a possible bias.

Karp and Pardes (1965) used three measures of field dependence-independence in studying the typology in the obese. On the RFT and EFT, the obese scored as much more field dependent than did the comparison group of non-obese subjects who had been matched for age, sex, education, and religion. Although the obese did not differ significantly from the non-obese on the BAT, it is difficult to interpret this finding as it is the only study which used the BAT. This study failed to control for weight history including age of onset of obesity. Its generalizability is somewhat limited by its use of volunteers from a nutrition clinic, some of whom had already lost considerable amounts of weight. Another issue in the experimental design is that the comparison group subjects were paid for their participation but the obese subjects were not; consequently, adventitious motivational differences may account for the results.

Morck (1976) tested 20 juvenile-onset obese, 20 adult-onset obese, and 18 non-obese adult female middle-class volunteers obtained through friendship networks. She found no significant differences between the adult-onset and juvenile-onset obese subjects as both groups tested as field dependent on the RFT and EFT whereas the non-obese group did not. A particular strength of Morck's study is

that she avoided the use of clinical populations; there may be an inherent source of bias, however, in utilizing friendship networks.

That these investigatory efforts found the obese to be field dependent seems consistent with the parenting practices implicated in both field dependence and obesity in childhood. The mothers of obese children clearly display the characteristics which Witkin attributes to the mothers of field-dependent children. This will be further discussed below in the section on mother-child interaction in obesity in children.

#### The Relationship between Field Dependence and Human Figure Drawings

Witkin and his associates (1954) compared human figure drawings (HFDs) of field-dependent and -independent individuals. They found the field-dependent subjects' drawings so interesting that they used a double-blind procedure in which human figure drawings were used to predict field dependence-independence. Both long- and short-scale rating systems were devised and used on drawings of 52 male and 51 female college students. The scoring items clustered around personality characteristics which were deemed typical of how the field-dependent person was viewed. These traits included: "lack of body confidence, lack of body esteem, uncontrolled or primitive expressions of anxiety,

lack of self-assurance, lack of struggle for sexual identification, and lack of drive and drive modification" (p. 246). The correlation found between the Rod and Frame Test (RFT) and the HFDs for the long scale was .72 for male subjects and .69 for female subjects, both of which were significant at the .01 level of significance. For the short scale, the correlation between the RFT and the HFD were .72 for males and .68 for females--again both were significant at the .01 level (Witkin et al., 1954, p. 246). In 1962, Witkin et al. reported similarly high correlations between other tests of field dependence-independence and HFDs. They also found that the short and long scales which had been developed in 1954 showed marked stability over time. Here, too, group membership as to field dependence or independence is validly predicted from HFDs. Witkin (1965) further asserted that the poorly articulated HFDs of the field dependent cannot be accounted for by intelligence.

It is important to restate that the strong relationship between field dependence-independence measures and HFDs may be due to the visual-spatial perceptual ability required on all the tasks.

#### Mother-Child Interaction in Juvenile-Onset Obesity

The relationship between obese children and their mothers has long been characterized as one of "close mutual dependency" (Zakus and Solomon, 1973). In a major study of



the families of obese children by Bruch and Touraine (1940), the sample consisted of 18 female and 22 male children and their families. This sample represented 25 percent of the 160 obese children under observation in a clinic. The subjects were selected for the willingness of the families to comply with interview requests. While the use of volunteers and a clinic population may limit the generalizability of the results, it is important to note that most of these families did not request medical intervention for the children's obesity. For most of these families, it was only pressure from referring schools or physicians which brought them into treatment. Because the subjects were drawn from a clinic population, the socioeconomic status was quite low and their representativeness may be limited.

Many of the mothers of these youngsters complained that they had never been allowed to be children themselves, feeling they had been thrown on their own too early. Several of them were described as unable "to detach themselves from the emotional tie to their parents" (Bruch and Touraine, 1940, p. 157) and expressed anxiety at being separated from them. Two mothers still lived with their own parents and expressed anxiety at being separated from them. Many of these mothers were immigrants and the investigators said they seemed to wish to create "utopian childhoods" for their children in which all the child's needs would be anticipated.

These authors described such mothers as failing to discern the child as separate from them. Most seemed to consider their children to be their possessions. Many had wanted a child to replace someone by whose loss the mother had been bereaved. The maternal behaviors were regarded as very inconsistent, overprotective, and unadaptive to the child's changing needs. The mothers constantly feared for their children's safety so that they isolated their children from others and kept them virtually immobile. The social isolation seemed also to be motivated by the mother's desire to retain the child's affections.

Discipline was often harsh and frequently included threats of abandonment. Physically demonstrative affection was lacking. The mothers rewarded good and conforming behavior with food and performed services for the children which were age inappropriate. The mothers also expressed great frustration and hostility toward the children for how much they felt they had to do for them. The children were not trained for self-sufficiency. Bruch (1941) described them as having very little opportunity to develop motor skills appropriate to their ages. While the children generally did not rebel against such overprotection, when they did do so, their efforts were generally limited to ineffectual and immature temper tantrums, hostility, and demandingness.

Nathan (1973) and Nathan and Pisula (1970) found similar relationships in studying the obese both in childhood and adolescence. They assessed their obese subjects as unprepared to care for themselves. Kaplan and Kaplan (1957) described 40 percent of obese children as enuretic past the age of 6. They reported that bottlefeeding past the age of 5 is not unusual. Such indications of age-inappropriate behaviors by the obese children are consistent with Bruch and Touraine's (1940) work in revealing the neurotic and pathological parent-child interactions found in studies of the families of obese children.

While these studies of the mother-child relationship in obesity in childhood seem to converge in portraying the mothers as markedly overprotective and denying their children's autonomy, caution must be used in generalizing from these clinic samplings to obese children who are not in treatment. Clinic cases may unduly emphasize family pathologies. Yet there may be a continuum of anxious, neurotic maternal behaviors practiced by the mothers of obese children. It is assumed here that the compulsive, age-inappropriate, alternately indulgent and hostile parenting, and the overprotection displayed by the mothers of clinic children are likely to occur in the families of other obese children, though to a lesser degree.

There are apparent similarities of a profound nature in the 1962 study by Witkin et al. of the parenting

practices of the mothers of field-dependent children and those practices which Bruch and Touraine (1940) attributed to the mothers of obese children. Both groups of mothers are viewed as oversolicitous, pampering, indulgent but harsh, and discouraging of activity in their young. It may be that studies that find obese children to be field dependent may be reflecting a basic parenting pattern underlying both obesity and field dependence. Such parenting behaviors may prevent these children from wide experience of the environment due to fearful overprotection and isolation, the nature of the organization of the self-object boundaries due to the mothers' refusal to acknowledge the separateness of the children, and impaired body image development due to restricted motility.

### Attachment Theory

Attachment theory emerged out of and differs from psychoanalytic theory by postulating that humans--indeed all mammals--have an innate potential to form affectional bonds that is independent of the satisfaction of other needs. This differs from psychoanalytic theory because the forming of bonding is seen as distinct from and not derived from libidinal needs. Affectional bonding is viewed as having such survival value as to be instinctively patterned, just as the seeking of proximity within species has survival value against predators. Bowlby (1969) has derived support from ethological studies for his decision to eschew drive

and libido theory. In 1966, Lorenz (1935/1966) studied imprinting in birds and showed that mere exposure to a mother figure forged a bond even in the absence of any feeding experience. Harlow (1958) and Harlow and Zimmerman (1959) have demonstrated that isolated infant monkeys, reared by use of a surrogate mother made of wire, cling to a figure covered with cloth which offers no food instead of the uncovered figure which does provide food. Because this clinging occurred without the cloth surrogate's ever feeding or meeting any other need of the monkeys, it has been inferred by attachment theorists that affectional bonding is not secondary to other drives as Freud had stated early in his work. Although the tendency to form affectional bonds may be innate, the ways in which bonds are formed and the vicissitudes of the bonding process appear to be heavily influenced by learning.

Bonding experiences have profound impact on personality development largely because the parent-child interaction is the child's initial experience of the world. Parental figures and their attitudes toward and about the child are incorporated by the child as he or she perceives them, becoming representational models for the child's view of the self and others. According to Bowlby (1973), affectional bondings have a multi-generational impact because bonding needs which are frustrated between mother and child are usually repeated between that child and his or her own

progeny. Attachments tend to be of great duration in humans and, when healthy in nature, they allow for and foster change in the young by both meeting early needs and supporting autonomy as the child grows. Wholesome attachments are those which are not overdependent or remote, and they are developed by the parent's meeting the need in the child for affectional bonding so that frustration leading either to overdependency or detachment does not occur. Bowlby (1973) stated that there is "a strong case for believing that an unthinking confidence in the unfailing accessibility and support of attachment figures is the bedrock on which stable and self-reliant personality is built" (p. 322).

The early signs of attachment behavior are cooing, smiling, crying, and clinging. True attachment, however, is considered to be specific to an attachment figure or figures and does not occur before 6 months of age, which is the earliest that the capacity to discriminate between persons develops. It is then that a true attachment begins, and it is operationally defined as the child's protesting by crying and other signs of distress if the attachment figure leaves. A healthy attachment which meets the child's needs for affection is indicated when the child does not always cling to the mother, but rather uses her presence as a source of security from which to explore the environment.

Studies of child-mother relationships have established that frustrated attachment needs--like all frustrating experiences--usually initially cause anger and hostility. But if unwilling separation persists or the attachment figure is ambivalent or remote, the child may direct the anger toward the self or peers. Hansburg (1976) described as worse than abandonment the wearing away of security by the inaccessibility of attachment figures who are physically present but are either emotionally insensitive or who simply ignore or misunderstand the child's needs. He contended that such attachment experiences can lead to self-destructive behavior by the children both when young and later in life. He asserted that helplessness, low self-esteem, hostility, and denial can also result from attachment frustration. Bowlby (1973) indicated that children have been observed to cling even more as an attachment figure becomes more punitive, rejecting, and threatening of separation.

Bowlby (1975) described overdependency as a manifestation of anxious attachment, conceived of as a reduced threshold for attachment behavior to occur because of apprehension that the attachment figure will be lost. He suggested that this behavior is related to overprotection by mothers who discourage their young from doing things for themselves. He has found that such children are more likely than other children to admit feelings of inferiority.

He indicated that overprotection is an expression of the hostility generated by the parent's own frustrated attachment history, which leads the parent to cling to the child.

Other personality theorists have viewed overindulgence and overprotection by parents as having undesirable effects upon children. Quite early in his writings, Freud (1905/1953) opposed "spoiling" because he believed it generated precocious sexual maturity. In 1926, he described spoiling as making a child more fearful of losing its object or attachment figure and as discouraging the child from growing up.

Adler, too, addressed early mother-child relationships, considering them to be of prime importance in fostering mental health, which he conceived of as social interest--as innate potential to care about and cooperate with others. He declared, "The possibilities for social interest first take on life and become tangible in the relationship between mother and child" (1927, pp. 32-33). The primary role of this early relationship is stressed by him throughout his work. He also stated,

From that moment of birth, the baby seeks to connect himself with his mother. This is the purpose of his movements. . . . A baby who could make no connection at all with his mother or with some other human being who took her place would inevitably perish. (p. 21).

Adler's (1931) concern with the mother's role in fostering mental health led him to address parenting practices.



He described overprotection and pampering as leading to demandingness in children because it prevented them from learning that they could do things for themselves. In 1935, he described the mother's function as that of developing and guiding the child's innate potential for cooperation from an exclusive focus on the mother outward to include others. If the mother kept the child's social development restricted and focused only on her, this innate potential or social interest would not develop.

Bowlby's (1975) view of overprotection is consistent with Adler's. He stated that mothers with anxious attachments will appear to spoil their children but that they really are seeking to narrow their children's interactions with others so as to keep them close to satisfy the mothers' own needs. He also asserted that caregiving is not only "a key role, but there is substantial evidence that how it is discharged by a person's parents determines in great degree whether or not one grows up to be mentally healthy" (p. 204).

The negative consequences of overprotection are also addressed by Hansburg (1976) who stated that "the capacity to separate from parental or other closely significant persons for necessary periods and for personal explorations of the social and physical environment is essential for individuation and ego development" (p. 161). Yarrow (1961) described maternal overprotection and ambivalence toward

the child as evidence of a "distorted mother-child relationship" (p. 479) which can result in depressive, schizophrenic, or neurotic personality disorders.

The importance of the mothers being willing to do less for the child in recognition and anticipation of the child's developing capacities is characterized by Mahler and Furur (1963) as being of critical importance in the child's development of a sense of self and a body scheme or image. These authors claimed that some mothers distort and misinterpret their babies' needs and cuing in line with the mothers' own needs. Such maternal behaviors create environmental reinforcement for the baby's behaviors which is inappropriate and which can undermine the child's individuation by denying him or her some small sense of mastery over the environment.

Ainsworth (1972) stressed the value of appropriate and sensitive responses by mothers in their children's cues. She found in observations of mother-child interactions that the mothers who displayed the greatest sensitivity to their babies' needs and cuing in the first months of life had babies who showed the most secure attachment and the earliest development of object constancy when observed again at one year of age. He postulated that this maternal sensitivity fosters the development of empathy in children, a view which is consistent with Adler's (1935) description

of the mother's role in developing the child's capacity to care about and cooperate with others.

### Summary

This study has posited a relationship between anxious attachment and the impaired development of self-identity and body image in obese children. Such children, both in childhood and later in adult life, display deficiencies in their awareness of bodily states and bodily perception. It is proposed that these deficits are related to parental practices of overprotection, indulgence alternated with hostility, and age-inappropriate caregiving which ignores the child's growing and emerging capabilities. Because these maternal behaviors prevent and discourage the child from functioning independently, experiences of self-competence and mastery have been lacking. This contributes to the sense of self-ineffectiveness and lack of autonomy which those who became obese in childhood describe. Overprotection and secluding resulting from the mother's anxiety over attachment needs which have been frustrated lead to reduced motility, the lack of a safe base from which to explore the environment, and a sense of the world and others as frightening and unfamiliar.

It is commonly held that the child's attitudes and beliefs about the self are formed, at least in part, by the way the child perceives the parents' attitudes toward

himself or herself and his or her ability. When the child's efforts to become more self-sufficient are discouraged, the child may infer that the parents feel he or she is incapable. This belief may become incorporated into the self-concept. Moreover, the isolation which overprotection causes may contribute to a sense of awkwardness in social interactions that enhances feelings of ineptitude.

The role of anxious attachment in preventing the development of an adequate body image is complex. Many theorists have described the development of the body image as initially undifferentiated from the self so that maternal denial of the infant's developing separateness is considered to impair the body image. Another way of viewing this relationship between inadequately developed body image and maternal overprotectiveness is to consider the discouragement by the mother of the child's activity. Since motility is viewed as a principal component of body image formation, limited motility may impair its adequate development. Alternatively, it is plausible that the inactivity the mother imposes may simply deprive the child of adequate experiences of the environment to develop the spatial perceptual abilities which are necessary to good performance on tasks related to body image. This inference is supported by findings that object constancy develops earliest in children whose attachments are secure. Presumably they are better able to explore the environment than are other children.

Object constancy may develop earlier because the child has more experiences of approaching and withdrawing from objects and otherwise operating upon them. Moreover, reduced motility may have an effect upon the development of the obesity. Two studies of the activity levels of obese adolescents--who are likely to have been lifelong obese--have found that inactivity is an even greater contributor to the development and maintenance of excess weight than is overeating (Bullin, Reed, and Mayer, 1964; Johnson, Burke, and Mayer, 1956).

From these considerations, four hypotheses have been derived for examination in the present investigation:

1. Obese children are more anxiously attached than non-obese children.
2. Obese children have poorer self-concepts than non-obese children.
3. Obese children are more field dependent than non-obese children.
4. Obese children display poorer body images than non-obese children.

## CHAPTER III

### METHOD

#### Subjects

The obese subjects in this study were obtained primarily through the Endo-weight Clinic of the University of California at Los Angeles Ambulatory Pediatric Clinic. Most of the 20 subjects in the clinic who volunteered for this study had been referred to that facility for weight reduction after routine medical examinations either within the pediatric clinic itself or by referral from pediatricians in private practice or school nurses. Six additional obese subjects were located directly from pediatric private practice. All the children had, therefore, previously been identified as obese by the physicians who admitted them to the program. They were so categorized by criteria adapted from data from the National Center for Health Statistics (Hamill, Drizd, Johnson, Reed, Roche, & Moore, 1979). These weight standards set out desirable weights for gender, age, and height. All the children who were considered to be obese were 20 percent or more above their ideal weight for height, age, and sex according to these tables.

The 25 children in the study who were considered non-obese were obtained through friendship networks. The same weight tables cited above were used for determining that these children weighed within 10 percent above or below their ideal weight for height, age, and gender.

Willingness to volunteer to participate in the study was not the only subject selection criterion. Because the instruments used to measure field dependence-independence were related to visual-spatial perceptual ability, children with visual or perceptual problems were excluded. Children who had a history of serious emotional disturbance were also eliminated from the study.

For the obese group, morbidly obese children did not participate in the study because they usually had health problems which were severe enough to require that they be hospitalized. Such hospitalization necessitated separation from their family and home environment which might influence their responses on measures of anxious attachment; these children were excluded. Potential subjects living in group or foster homes and those living in residential treatment facilities for delinquent or disturbed children were also eliminated. Several obese children were not participants because they refused to return to the clinic at all, due to extreme fearfulness of blood tests and pediatric examination.

#### Characteristics of the Sample

Of the 26 obese subjects in this study, 16 were female and 10 were male. There were 9 females and 16 males in the non-obese group. The ethnic composition of the obese group was 8 black, 12 Jewish white, 5 non-Jewish white, and

1 Japanese. In the non-obese group, 2 were black, 16 were Jewish, and 7 were non-Jewish white.

A history of obesity in the family was reported by the parents of 21 of the 26 obese children and 15 of the 25 non-obese children. The difference between the groups in familial incidence of obesity was nonsignificant ( $\chi^2=5.648$ ). The obese children were expected to have a family history of obesity, but the relatively high reported incidence of obesity in the non-obese families seemed unusual. Perhaps families of non-obese children who are willing to participate in a research study on obesity might have had some family experience with obesity which makes them more interested in the subject and likely to participate.<sup>1</sup>

Because it was considered that the stability of family life might affect the children's performance on measures of anxious attachment, the marital histories of the parents and living situations of the children were recorded. Among the families of the obese children, 7 sets of parents had

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<sup>1</sup>The relatively high incidence of obesity reported in the family histories of the non-obese children in the study was unexpected. It may be that these parents tended to report overweight of less than 20 percent as obesity despite the investigator's efforts to help them distinguish between simple overweight and actual obesity. It is also possible that the families of the non-obese children are reporting obesity that begins in adult life, whereas most of the parents of the obese children were obviously obese themselves and many of them mentioned a lifelong weight problem. In the future, researchers may wish to inquire in more detail into the age or ages of onset and the actual degree of overweight reported in family histories of weight problems.



never married, 4 were divorced, 1 parent was widowed, 1 set of parents was separated, and 13 couples were still married. The families of the non-obese reported 7 divorces and 18 marriages which were intact. While the marriages of the parents of the non-obese would appear to be somewhat more stable, it is important to note that those parents of the obese children who had never married appeared to live together in quite stable relationships. When the children's living situation, rather than the parents' marital status, was used as the criterion for stability of family life, the obese and non-obese groups were more similar. In the families of the obese, 15 children lived with both parents, 10 with only the mother, and 1 child lived with her maternal grandmother after the death of her mother. Among the non-obese, 17 subjects lived with both parents, 7 lived with the mother alone, and 1 child lived with his mother and stepfather. When the parental marriage did end, however, it tended to terminate earlier in the lives of the obese children than the non-obese children. The average age at the time of the parents' separation was 4.2 years for the obese with a standard deviation of 3.42 years. For the non-obese, 8.14 was the average age in years at the time of parental separation with a standard deviation of 2.19 years. This difference was nonsignificant, however ( $t=-1.15$ ,  $df=10$ ).

The means and standard deviations for the obese and non-obese groups on the WISC/VOC scores, age, socioeconomic status, height, and weight are compared and summarized in Table 1. The scores reported as WISC/VOC are actually based upon the vocabulary subtest of the Wechsler Intelligence Scale for Children-Revised which was prorated to yield a Full-Scale IQ. The difference between the groups on these scores was statistically significant ( $p < .05$ ,  $df = 49$ ) with the non-obese obtaining higher scores. This difference between the groups in what is essentially a verbal IQ is probably attributable in large part to the difference between the groups on socioeconomic status which was significant at .001. The difficulty of finding truly comparable non-obese children when drawing upon a clinic sampling of obese children has been discussed above in Chapter II. It is a major constraint in this kind of research that those potential subjects who are most likely to participate as members of a comparison group are generally those who are better educated, have more leisure time, and possess the financial resources which make their participation less of a hardship. On the other hand, persons with an identifiable problem such as obesity are somewhat more motivated to participate despite the inconveniences, even when they have less education and are less able to comprehend fully the reasons for their participation being of value.

Table 1

Means and Standard Deviations by Group and  $t$  tests of WISC/VOC<sup>a</sup> Scores, Ages in Months, Socioeconomic Status, Height in Inches, and Weight in Pounds

	Obese		Non-obese		$t$
	Mean	<u>SD</u>	Mean	<u>SD</u>	
WISC/VOC <sup>a</sup> Score	101.03	21.03	117.08	19.00	-2.86*
Age in Months	150.65	25.58	150.48	25.64	0.02
Socioeconomic Status	35.20	19.05	18.28	9.53	3.99**
Height in Inches	60.08	7.18	61.24	4.74	-0.68
Weight in Pounds	174.19	62.86	96.76	22.35	5.76**

<sup>a</sup> Full-Scale IQ prorated from Vocabulary subtest only.

\* $p < .01$ .

\*\* $p < .001$ .

The ages of the children in the study ranged from 9 years old through 16 years of age. The means and standard deviations of the ages for the two groups were not statistically different. Similarly, the heights of the children in both groups were comparable.

Because the pediatric endocrinology literature (Falkner, 1975; Nelson, Vaughn, McKay, and Behrman, 1979) reported that there is a tendency for obese children to have an earlier onset of puberty, it was expected that the obese children would show signs of pubescence at an earlier age than would the non-obese. Setting criteria by which to decide when children were in puberty was difficult. Since the obese children had all recently been examined by pediatricians, it seemed that medical reports as to the presence or absence of breast development in the obese girls would be highly reliable. The corpulence of the female children, however, made it hard even for physicians specializing in pediatric obesity to determine whether what appeared to be breast development was actual mammary tissue development or the deposition of fat. For non-obese girls, the reporting parent, usually the mother, seemed to have no difficulty deciding if the daughter had undergone breast development. For both the obese and non-obese girls, the onset of menses was unambiguous.

Deciding upon criteria for pubescence in boys was also difficult. Because obesity in boys often hides genital

development in fat folds and because the mothers of the non-obese boys would probably not recently have seen their sons naked, a less specific criterion was needed. As there is considerable variability in the development of secondary sexual characteristics, the occurrence of a spurt of growth in the child was decided upon as the criterion of puberty in the males. It was expected that the reporting parents could easily have observed this and that it would not be confused with the deposition of fat which can have a feminizing effect for boys.

For the girls, three levels of sexual development were assigned, based upon reports by the parents and pediatric examination results which were available on most of the obese girls. These three categories were: breast development and menses, breast development without menarche, and pre-pubescence; this third category was defined as the lack of breast development and the absence of menarche. For boys, the presence or absence of a growth spurt was the sole criterion of puberty.

The mean ages, in years, of the children in each category of sexual development by group are compared in Table 2 and the average ages for each sex by group are also reported. As was expected, there was a difference between the groups in sexual development that was significant at .05 (Cramer's  $\chi^2=0.352$ ). Since the relationship between age and the onset of puberty is not linear and there are

Table 2

Mean Ages in Years for Each Category of Sexual Development by Group  
and the Mean Ages in Years for Each Sex by Group

	Females						Males			
	Breast Development and Menses		Breast Development without Menses		Pre-pubescent		Growth Spurt		No Growth Spurt	
	Mean	<u>SD</u>	Mean	<u>SD</u>	Mean	<u>SD</u>	Mean	<u>SD</u>	Mean	<u>SD</u>
Obese	13.5 ( <u>N</u> =9)	1.7	10.8 ( <u>N</u> =3)	1.7	10.8 ( <u>N</u> =4)	0.5	14.1 ( <u>N</u> =4)	2.5	12.1 ( <u>N</u> =6)	2.2
Non-obese	14.6 ( <u>N</u> =2)	0.1	10.1 ( <u>N</u> =2)	0.2	12.5 ( <u>N</u> =5)	3.0	14.7 ( <u>N</u> =5)	0.9	11.6 ( <u>N</u> =11)	1.4

Note.

	<u>X</u>	<u>SD</u>
Age of obese females:	12.3	2.0
Age of obese males:	12.9	2.4
Age of non-obese females:	12.5	2.6
Age of non-obese males:	12.6	1.9

difficulties in distinguishing between fat deposition and signs of puberty in the obese children, this finding must be viewed with caution, even though it is consistent with the medical literature on the subject.

### Instruments

Field dependence-independence in children aged 10 through 16 was measured by the Embedded Figures Test (EFT). The EFT was developed by Witkin et al. (1962) using Gottschalk's original figures, and has been shown to be a valid and reliable measure of field dependence-independence. Five 9-year-old subjects were given the Children's Embedded Figures (CEF) Test since the EFT is not reliable for children under 10, but their field-dependence performance has been omitted from the analysis as there were so few of them.

Because the EFT has been demonstrated to be related to intelligence, the Vocabulary subtest of the Wechsler Intelligence Scale for Children Revised (WISC/VOC) provided a means for controlling for the effects of intelligence on field dependence-independence.

Body image was measured from the children's human figure drawings by the Body Image Disturbance Scale (BIDS) adapted by Fisher (1959) from a scale originally created by Machover (Witkin et al., 1954, pp. 235-254).

Self-concept was measured by the Piers-Harris Children's Self Concept Scale (PH) (Piers and Harris, 1964).

Because obese children in the pilot study appeared to be less than candid in their replies to the Piers-Harris, 13 "Lie Scale" items from the Minnesota Multiphasic Personality Inventory (MMPI) were added to the Piers-Harris (Dahlstrom, Welsh, and Dahlstrom, 1975). A table of random numbers was used in embedding the Lie items in the Piers-Harris which was otherwise given in its standardized form. The 13 Lie items appear as Appendix A.

The socioeconomic status of the children's families was quantified by means of the index developed by Hollingshead (1957) which assigns a numeric value based upon the educational and occupational levels of the principal wage earner.

Anxious attachment was measured by two instruments. The Hansburg Separation Anxiety Test (HSAT) was originally developed by Hansburg (1972) to study separation problems in adolescence. It has since been used to study the mothers of abused children (DeLozier, 1978), the elderly (Hansburg, 1972), the hearing impaired (Reiter, 1980), and women who had been sexually involved with their psychotherapists (Stone, 1980). It is a projective instrument consisting of 12 black and white drawings depicting a range of mild to severe separation situations. Norms have been established and statistical validation is being developed. The HSAT yields two scores, Attachment and Individuation, both of which were incorporated into the analysis of the data.



Because of the projective nature of the HSAT, a second means of assessing anxious attachment seemed to be needed. For this purpose, a questionnaire was developed that asked parents to indicate the extent to which their children displayed behaviors which were observable indications of anxious attachment. Signs of fearfulness, anxiety, difficulty in interpersonal relationships, lack of confidence, and age-inappropriate behaviors were included in the checklist as characteristics which would be consistent with the construct of anxious attachment as set forth by Bowlby (1969; 1973), Hansburg (1972), and White and Watt (1973).

In addition to the 30 anxious attachment items in the Behavioral Checklist (BCL), six neutral items were included to disguise the explicit purposes of the Checklist. Because there was a possibility that the parents would reply in ways which made them or their children look better, six Social Desirability items from the MMPI Social Desirability Scale (SD) (Edwards, 1957) were adapted so as to describe the children of the respondents. The SD, Lie, and actual anxious attachment items were placed in randomized order and presented in Likert scale format to the parents. The BCL appears as Appendix B.

### Procedures

All subjects and their parents were told that the study was about obesity in children. They were asked to

sign consent forms which appear as Appendices C, D, and E. Each child and his or her parent(s) were present together as the forms were discussed. The parents were asked to explain to their children that participation was entirely voluntary and could be stopped at any time without stating a reason for doing so. Once formal, written consent was obtained, the parent was given a demographic information sheet (Appendix F), the Behavioral Checklist, and instructions as to how to fill them out. The parent was asked to leave the examiner and the child alone so that the rest of the study could be done in private.

Initially, the order of test administration was to be counterbalanced. Observation of the children during the pilot study, however, indicated that the obese children, in particular, appeared upset and disconcerted by the EFT and this would affect performance on subsequent tasks. In addition, all the subjects in the pilot study were restless and complained of boredom during the HSAT. The instruments, therefore, were administered in a fixed order which was intended to minimize frustration and to balance verbal and nonverbal tasks so as not to fatigue children whose reading skills were marginal. The WISC/VOC subtest and the Piers-Harris with the Lie Scale items embedded were given first. The child was then asked to draw a person and then to draw a person of the opposite sex from the one drawn first. The Hansburg Separation Anxiety Test was given next and the

Embedded Figures Test was administered last. All the children were told that the examiner would be glad to read the verbal tests to them if they were "tired"; this was intended to offer them a way to "save face" if they had trouble reading. Moreover, because the obese children in the pilot study had so much difficulty with the EFT, the administration of the test to all subjects was changed to conform with the manual's instructions for giving the test to younger children. This manner of administration was followed regardless of the weight status or age of the subjects. Although this may have influenced the scores of both groups on the EFT, it seemed desirable as a means of minimizing frustration and maintaining cooperation.

### Ratings

Two doctoral candidates in clinical psychology were selected and trained as raters for the Body Image Disturbance Scale. The figure drawings were presented to the raters in blind fashion such that the raters could not tell whether a drawing was by a subject from the experimental or comparison group. Moreover, the raters were unaware of the subject matter of the study.

The sex of the person who made the drawing and the order in which the same or opposite sex drawings were made was the only information provided the raters except in some instances where the representation of human forms was so

bizarre that it was necessary to note for the raters the sex which the child had intended to draw.

Each set of drawings was rated independently by each of the two raters. The inter-rater reliability coefficients for same and opposite sex drawings were .85 and .89, respectively.

## CHAPTER IV

### RESULTS

This chapter presents the findings of this study. The implications of these results for the central hypotheses and attachment theory are discussed in the next chapter.

Differences between the two groups of subjects are summarized in Table 3; it presents the means, standard deviations, and t tests for the Hansburg Attachment and Individuation scores, Behavioral Checklist, Piers-Harris, Lie Scale, Embedded Figures Test, Body Image Disturbance Scale, and the Social Desirability Scale. Three of the four central hypotheses were investigated by these t tests.

Two instruments were employed to test the proposition in Hypothesis 1 that obese children are more anxiously attached than are non-obese children. There was no significant difference between the groups on either the Attachment or Individuation scores of the Hansburg. On the Behavioral Checklist, the second measure of anxious attachment, the obese group did demonstrate greater anxious attachment at a very high level of significance. Because neither of the Hansburg scores differentiated between the groups, additional analysis was undertaken to see if combining either the Attachment or Individuation scores with the Behavioral Checklist would enhance the relationship found between the BCL and group membership. Table 4 presents a multiple

Table 3

Means, Standard Deviations, and t tests for Hansburg Attachment, Individuation, Behavioral Checklist, Piers-Harris, Lie Scale, Embedded Figures Test, Body Image Disturbance Scale, and Social Desirability Scale

	Obese		Non-obese		<u>t</u>
	Mean	<u>SD</u>	Mean	<u>SD</u>	
Hansburg Attachment	-4.42	2.64	-5.60	2.65	1.59
Hansburg Individuation	2.19	2.48	2.64	3.34	-0.54
Behavioral Checklist <sup>a</sup>	66.96	16.19	51.12	11.41	4.05***
Piers-Harris	56.12	15.13	62.52	8.85	-1.84*
Lie Scale <sup>a</sup>	3.82	1.94	2.7	1.52	2.15*
Embedded Figures Test <sup>a</sup>	57.29	18.60	35.9	12.19	4.65***
Body Image Disturbance Scale <sup>a</sup>	5.57	2.00	4.33	1.87	2.28*
Social Desirability Scale	14.56	3.29	18.08	3.64	-3.18**

<sup>a</sup>t is one-tailed.

\*p < .02.

\*\*p < .01.

\*\*\*p < .001.

Table 4  
Multiple Regression Analysis Using Behavioral Checklist and  
Hansburg Attachment Scores as Predictors  
of Group Membership

	Change <u>R<sup>2</sup></u>	Simple <u>r</u>	Multiple <u>R</u>	<u>df</u>	<u>F</u>
Behavioral Checklist	0.249	-0.498	-0.498	1	
Hansburg Attachment	-0.420	-0.221	-0.504	2	9.82*
Residual				48	

\*p < .01.

regression analysis using the BCL and Hansburg Attachment scores as predictors of group membership. Table 5 summarizes a multiple regression analysis using the BCL and Hansburg Individuation scores as predictors of group membership. Neither the Attachment nor the Individuation scores add meaningfully to the relationship between the BCL and group membership. Hypothesis 1, therefore, is confirmed with respect to the BCL. Since the correlation between the BCL and the Hansburg Attachment scores is so low ( $r=.03$ ) and that between the BCL and the Individuation scores is for practical purposes non-existent ( $r=.00$ ), whatever the Hansburg is measuring seems to be unrelated to behaviors which are consistent with anxious attachment.

Hypothesis 2 asserts that the obese have poorer self-concepts than have the non-obese. As no significant difference was found between the groups on the Piers-Harris, this hypothesis was not supported. The lack of a significant difference between the groups, however, may be unfounded because the two groups differed significantly on the Lie Scale items which were embedded within the Piers-Harris. This finding suggests that the obese children were either less truthful or used more denial in their replies to statements about their feelings about themselves. This tendency may have obscured actual differences between how obese and non-obese children feel about themselves.



Table 5  
Multiple Regression Analysis Using Behavioral Checklist and  
Hansburg Individuation Scores as Predictors  
of Group Membership

	Change <u>R</u> <sup>2</sup>	Simple <u>r</u>	Multiple <u>R</u>	<u>df</u>	<u>F</u>
Behavioral Checklist	0.249	-0.498	-0.498	1	
Hansburg Individuation	0.006	0.078	0.504	2	8.178*
Residual				48	

\*p < .01.

Hypothesis 3 states that the obese are more field dependent than are the non-obese. Because the field dependence literature reports a relationship between intelligence and performance on the Embedded Figures Test, an analysis of variance and covariance was used to control for the effects of WISC/VOC upon EFT performance between the two groups. This analysis is summarized in Table 6. As was expected, the obese subjects were significantly more field dependent than the non-obese subjects.

Hypothesis 4 asserts that the obese have poorer body images than do the non-obese. The hypothesis is confirmed. As summarized in Table 3, the obese did demonstrate poorer body images on the Body Image Disturbance Scale than did the non-obese.

Differences between the sexes in performance on the Body Image Disturbance Scale (BIDS), Lie Scale, Piers-Harris (PH), WISC/VOC, Behavioral Checklist (BCL), Hansburg Attachment and Hansburg Individuation measures are summarized in Table 7. Because the sex of the subject is a categorical variable and the computer had no available program for point-biserial, Cramer's  $V$  was used to measure the strength of these relationships. According to Nunnally (1967) and Fleiss (1973), this statistic may be interpreted as an approximation to a Pearson product-moment coefficient although it assesses the strength but not the direction of

Table 6

Analysis of Covariance of Embedded Figures Test by Group Controlling  
for the Effects of WISC/VOC on Performance

Source of Variation	Sum of Squares	<u>df</u>	Mean Square	<u>F</u>
WISC/VOC--covariate	11.971	1	11.971	13.634*
Main Effects--group	9.427	1	9.427	10.737*
Variation Explained	21.398	2	10.699	12.186*
Residual	37.754	43	0.878	

\*p < .01.

\*\*p < .001.

Table 7

Cramer's  $V$  Relationships between Sex of Subjects and Scores on  
 Body Image Disturbance, Lie Scale, Piers-Harris, WISC/VOC,  
 Behavioral Checklist, Hansburg Attachment,  
 and Hansburg Individuation

	Sex of Subject
Body Image Disturbance	0.440**
Lie Scale	-0.103 <sup>a</sup>
Piers-Harris	0.151
WISC/VOC	0.343**
Behavioral Checklist	0.168
Hansburg Attachment	0.290*
Hansburg Individuation	0.263

<sup>a</sup>Directional sign supplied by visual inspection of data plots.

\* $p < .05$ .

\*\* $p < .01$ .

these relationships. Directional signs have been supplied in Table 7 after visual inspection of data plots.

On the Body Image measure, the males tended to score significantly higher, indicating that their body image development was more impaired than was that of the female subjects. No significant difference was found between the sex of the subject and scores on either the Lie Scale or the PH. Study of sex differences on the WISC/VOC indicated an unusual relationship. The boys scored higher than did the girls even though the basis of the score was the Vocabulary subtest upon which girls have higher scores than boys.

Neither the Behavioral Checklist nor the Hansburg Individuation scores was related to the sex of the subjects. Scores on the Hansburg Attachment scale were, however, related to the sex of the subjects. Males gave more Attachment responses than females in mild separation situations.

There are known sex differences in EFT scoring (Witkin et al., 1954). The sex difference here was consistent with the expectation that girls are more field dependent than boys. Because this is well established, it was not studied further.

The parents' responses to the Social Desirability Scale as summarized in Table 3, did not confirm the expectation that the parents of the obese children would tend to reply in a more socially acceptable way. Instead, the

finding was in the opposite direction. Parents of the non-obese children scored significantly higher on SDS.

As an incidental observation, it had been proposed that children with an earlier age of onset of obesity would have more impaired body images and would exhibit greater anxious attachment on both the Hansburg measures and the BCL. Table 8 presents the analysis of the ages of the obese children at the time they first became obese in relation to their scores on the BIDS, EFT, Attachment, Individuation, and BCL scores. Contrary to expectation, BIDS scores were related to later onset of obesity. No relationship was found between age of onset and the measures of anxious attachment or the EFT. Since only one of the five correlations in this non-hypothesized observation was significant, it should be interpreted with caution. Using age of onset as a predictor of body image disturbance would increase efficiency over predicting by chance alone by only 16.8 percent, which is the coefficient squared.

A relationship between anxious attachment and field dependence-independence has been posited by Hansburg (1972). As an incidental observation, the occurrence of such a relationship was studied. The subjects' scores on the Attachment and Individuation scales of the Hansburg were used to predict their Embedded Figures Test scores in a multiple regression analysis presented in Table 9. Only the Attachment scores are significantly related to the Embedded

Table 8  
Correlation Coefficients between Age of Onset of Obesity and  
Scores on Hansburg Attachment, Hansburg Individuation,  
Behavioral Checklist, Body Image Disturbance  
and Embedded Figures

	Onset
Hansburg Attachment	-0.051
Hansburg Individuation	-0.236
Behavioral Checklist	0.135
Body Image Disturbance	0.411*
Embedded Figures	0.198

\*p < .05.

Table 9

Multiple Regression Analysis Summary of Hansburg Attachment  
and Hansburg Individuation Scores as Predictors  
of Embedded Figures Test Scores

	<u>R</u> <sup>2</sup>	Change <u>R</u> <sup>2</sup>	Simple <u>r</u>	Multiple <u>R</u>	<u>df</u>	<u>F</u>
Hansburg Attachment	0.102	0.102	0.319	0.319	1	5.000*
Hansburg Individuation	0.103	0.001	0.114	0.322	2	2.480
Residual					43	

\*p < .05.



Figures scores. Not only are the Individuation scores not significantly related to the Embedded Figures Test scores, but using the Individuation scores as an additional predictor also does not contribute to the value of the Attachment scores as predictors of Embedded Figures Test performance.

Table 10 presents an intercorrelation matrix for 10 variables: Behavioral Checklist, Embedded Figures, Hansburg Individuation, Body Image Disturbance, Lie Scale, Piers-Harris, WISC/VOC, socioeconomic status, and Social Desirability. Because the size of N varies over this array of relationships (Social Desirability Scale, 40; Embedded Figures Test and Lie Scale, 46; all others, 51) the value of p relative to r varies accordingly.

No significant relationship was found between the Behavioral Checklist and either of the other two scores for anxious attachment--the Hansburg Individuation and Attachment scores.

No significant relationship was found between the Behavioral Checklist and the Body Image Disturbance Scale. The Lie Scale, Piers-Harris, WISC/VOC, Social Desirability, and socioeconomic status were all significantly related to the Behavioral Checklist.

On the Hansburg Separation Anxiety Test, only two significant relationships were found: the two scales, Individuation and Attachment, were related to each other and

Table 10

Intercorrelation Matrix for Body Image Disturbance (BIDS), Lie Scale (LIE), Piers-Harris (PH), WISC/VOC, Embedded Figures Test (EFT), Hansburg Attachment (AT), Hansburg Individuation (IND), Social Desirability (SDS), Behavioral Checklist (BCL), and Socioeconomic Status (SES)

	1	2	3	4	5	6	7	8	9	10
1. BIDS		.09	-.17	-.08	.34*	.16	.05	.11	.16	.33**
2. LIE			.03	-.04	-.01	.08	.12	-.20	.30*	.36**
3. PH				.23*	-.44***	-.15	.01	.13	-.37**	-.22
4. WISC/VOC					-.44***	-.09	-.07	.19	-.34**	-.58***
5. EFT						.32*	-.11	.25	.41**	.35**
6. AT							.24*	.13	.03	.16
7. IND								-.02	-.00	.06
8. SDS									-.56***	-.26
9. BCL										.49***
10. SES										

\* $p < .05$ .

\*\* $p < .01$ .

\*\*\* $p < .001$ .

the Attachment scores were related to the Embedded Figures Test scores.

Body Image Disturbance was related to Embedded Figures and socioeconomic status scores. It was not significantly related to Lie Scale, Piers-Harris, WISC/VOC, or Social Desirability. The Lie Scale was not significantly related to the Piers-Harris, WISC/VOC, Embedded Figures, or Social Desirability scores. It was, however, related to socioeconomic status; people of lower status scored higher on the Lie Scale.

Piers-Harris scores were related to WISC/VOC and the Embedded Figures. They show no relationship to Social Desirability or socioeconomic status.

The relationship between WISC/VOC and field-independent performance on the Embedded Figures Test is consistent with results of other studies reporting such a relationship. The covariance of WISC/VOC and EFT scores was studied and presented in Table 6 as a means of controlling for the effect of intelligence upon Embedded Figures Test performance. No significant relationship was found between WISC/VOC and Social Desirability scores. The highly significant relationship found between WISC/VOC and SES was expected.

No significant relationship was found between SES and Social Desirability responses. Because SES has been found to be independent of EFT performance by Karp, Silberman, and Winters (1969), the strong relationship found between

SES and EFT scores was unexpected. Analysis of covariance as summarized in Table 11 was used to control for the effects of social class upon EFT performance to ascertain whether the difference in the groups in EFT performance was a function of social class. When controlled for SES, the relationship between group membership and EFT scores remained significant.

Multiple discriminant analysis was used to assess the value of selected variables as predictors of group membership, i.e., obese or non-obese weight status. Two sets of variables were studied. The first set used four variables and excluded the Hansburg Attachment and Individuation scores. The second set used these same four variables supplemented by the Hansburg scores. Three analyses were made of each of these two sets of variables. First, the variables were placed in order according to theoretical considerations. Second, they were examined as an aggregate in direct fashion. Last, they were placed in stepwise order according to the empirically identified strength of the relationship between each variable and group membership.

The first set of three analyses used four variables which were considered in the theoretically determined order of (1) Body Image Disturbance, (2) Behavioral Checklist, (3) Embedded Figures Test, and (4) socioeconomic status (SES). Table 12 summarizes this analysis. In the classification results, 82.61 percent of the cases were correctly

Table 11  
Analysis of Covariance of Embedded Figures Test by Group Controlling  
for the Effects of Socioeconomic Status on Performance

Source of Variation	Sum of Squares	<u>df</u>	Mean Square	<u>F</u>
Socioeconomic Status--- covariate	3.370	1	3.370	3.370
Group---main effects	13.964	1	13.964	14.358*
Variation Explained	17.333	2	8.667	8.912
Residual	41.819	43	0.973	

\*p < .001.

Table 12

Multiple Discriminant Analysis Summary on Body Image Disturbance (BIDS),  
Behavioral Checklist (BCL), Embedded Figures (EFT), and SES  
as Predictors of Group Membership When Ordered  
by Theoretical Considerations

Step	Variable	Wilks' Lambda	Standardized Canonical Discrimination Coefficients	Canonical Correlation
1	BIDS	.881*	.219	
2	BCL	.659**	.437	
3	EFT	.556**	.580	
4	SES	.528**	.355	
				.687**

\* $p < .02$ .

\*\* $p < .001$ .

classified. The group membership of 70.8 percent of the obese children and 95.5 percent of the non-obese children was predicted accurately. As expected, when these same variables were used as an aggregate for the second analysis, the results were unchanged.

Table 13 summarizes the analysis of these four variables when done in stepwise order according to the strength of their statistical relationship to the weight status (group membership) of the subjects. This analysis correctly classified 80.43 percent of the bases. The accuracy of the prediction of the group membership of the obese was unchanged. It remained 70.8 percent correct. The prediction of non-obese group membership was slightly less accurate, however (90.9 percent as against 95.5 percent of the non-obese correctly classified), but still very high.

Comparison of these analyses suggests that the variables yield greater predictive accuracy when used in the theoretically as opposed to a purely empirically determined order.

The second set of three multiple discriminant analyses used the same four variables plus the Hansburg Attachment and Individuation scores. Table 14 shows the analysis of these six variables when ordered by theoretical considerations. This order was (1) Body Image Disturbance Scale, (2) Behavioral Checklist, (3) Embedded Figures Test, (4) SES, (5) Hansburg Attachment, and (6) Hansburg

Table 13

Stepwise Multiple Discriminant Analysis Summary on Body Image Disturbance (BIDS),  
Behavioral Checklist (BCL), Embedded Figures (EFT), and  
SES as Predictors of Group Membership

Step	Variable	Wilks' Lambda	Standardized Canonical Discrimination Coefficients	Canonical Correlation
1	EFT	.689*	.635	
2	SES	.580*	.415	
3	BCL	.539*	.417	
				.679*

\* $p < .001$ .



Table 14

Multiple Discriminant Analysis Summary on Body Image Disturbance (BIDS), Behavioral Checklist (BCL), Embedded Figures (EFT), SES, Hansburg Attachment (AT), and Hansburg Individuation (IND) as Predictors of Group Membership When Ordered by Theoretical Considerations

Step	Variable	Wilks' Lambda	Standardized Canonical Discrimination Coefficients	Canonical Correlation
1	BIDS	.881*	.250	
2	BCL	.659**	.427	
3	EFT	.556**	.518	
4	SES	.528**	.366	
5	AT	.522**	.065	
6	IND	.492**	-.352	
				.713**

\* $p < .02$ .

\*\* $p < .001$ .

Individuation scores. The predictive accuracy of this analysis was slightly improved over that which had used only four variables. The classification by the computer correctly predicted 86.96 percent of the cases. The group membership of 75 percent of the obese and 100 percent of the non-obese children was classified correctly. These same results were obtained in the second analysis which used these six variables as an aggregate.

Table 15 summarizes the analysis of the six variables when done in stepwise order according to the strength of their statistical relationship to the group membership of the subjects. There was no difference in predictive accuracy or actual classification results between the analysis using the six variables in theoretical order and their analysis in stepwise order.

Comparison of the results of the classifications using the four variables as opposed to six shows that the addition of the two Hansburg scales only increases predictive accuracy by 4 percent. Given the length of time required for administration and the failure of the instrument to discriminate between groups, the slight increase in predictive accuracy does not seem to outweigh the shortcomings of the HSAT.

Table 15

Stepwise Multiple Discriminant Analysis Summary on Body Image Disturbance (BIDS), Behavioral Checklist (BCL), Embedded Figures (EFT), SES, Hansburg Attachment (AT), and Hansburg Individuation (IND) as Predictors of Group Membership

Step	Variable	Wilks' Lambda	Standardized Canonical Discrimination Coefficients	Canonical Correlation
1	EFT	.678*	.535	
2	SES	.580*	.374	
3	BCL	.539*	.417	
4	IND	.508*	.367	
5	BIDS	.493*	.254	
				.712*

\* $p < .001$ .

## CHAPTER V

### DISCUSSION

This study began with an application of Bowlby's attachment theory to the psychological dimensions of obesity in childhood. Four hypotheses were generated: (1) obese children are more anxiously attached than non-obese children, (2) obese children have poorer self-concepts than non-obese children, (3) obese children are more field dependent than non-obese children, and (4) obese children display poorer body images than non-obese children.

As the reported results indicate, three of these propositions were confirmed. Taken together, these three supported hypotheses extend the credibility of various components of attachment theory.

The finding that the obese children in this study are more anxiously attached than the non-obese children supports an inference that the nature of the parent-child relationship is implicated in the development of obesity in children. Bruch and Touraine (1940) reported a pattern of obese child-mother relationships that was characterized by overprotection, denial of the child's separateness, hostility, and the provision of age-inappropriate physical care. According to attachment theory, such a pattern would reflect anxiety in the mother's own early attachment experience which she then transmits in her relationship to her

own children. Such a dynamic anxiety pattern finds expression in overconcern, subversion of the child's growing autonomy, and imposition of limitations on the child's activities to avoid the mother's own anxiety. Not only does this relationship fail to provide the secure base from which to explore the world which would come from a healthy level of attachment, but the denial of the child's separateness can impede the development of an adequate sense of self so as to result in confusion as to bodily states and needs. Moreover, the overcontrol and limitation of self-initiated activities deprive the child of experiences of effectiveness which would normally be incorporated into the sense of self. Thus children who are anxiously attached risk inadequate self-differentiation.

Inadequate self-differentiation consistent with anxious attachment appears in obese children in both their field dependence and their distorted body images. Because the ability to perceive an object as separate from its background is analogous to the capacity to differentiate the self from the social field, field dependence is conceptually related to psychological underdifferentiation. Because the body image is considered to be both the means and the product of the self's differentiation from the mother-child dyad, the anxiously attached display poorer body image development. The strong relationship found between body image disturbance and field dependence also

lends credence to the underlying theoretical proposition that both are measuring self-differentiation.

The link which is being drawn here between field dependence and anxious attachment is further strengthened by studies which have demonstrated that field-dependent persons are more interpersonally dependent (Witkin et al., 1962) than are the field independent. Moreover, the development of field dependency in children has been shown by Witkin and several co-investigators (1962) to be related to a pattern of parenting which is tellingly similar to that described by Bruch and Touraine (1940) in the families of obese children. Overprotection, age-inappropriate care, and hostility characterize the parenting practices found both in the families of obese children and in the families of field-dependent children. Because the obese children in this study are also markedly field dependent, it seems reasonable to infer an anxious parent-child attachment as an important determinant in their psychodynamic background.

The lack of a significant relationship between anxious attachment and disturbed body image poses some questions. Because the body image is considered to be the means by which the self is differentiated from the parent-child relationship, children who are anxiously attached should have poorer body image development. The question arises, therefore, whether the findings in this study reflect theoretical or measurement difficulties. It seems probable that there

is sufficient error variance in both the BCL and the BIDS as measurements to obscure underlying substantive relationships between them. In the light of the utility of the theory suggested in other findings both here and in other investigations, development by psychometricians of better, more sensitive instruments to measure these processes seems advisable. It is important to note, however, that a more parsimonious explanation of the body image disturbance in the obese children might be that it is a function of the obesity itself; it may not be related to the attachment pattern between obese children and their parents.

These notions of the utility of attachment theory in understanding obesity in childhood seem to hold despite the negative findings associated with this study's use of the HSAT for the first hypothesis. Although obese children appear to function in a distinctively anxiously attached fashion when anxious attachment is measured by the BCL, no such findings appear when the HSAT serves as the index of anxious attachment. This pattern parallels Stone's (1980) findings. In studying anxious attachment in women who had been involved sexually or who had been sexually approached by their psychotherapists, Stone obtained positive results with a questionnaire covering the subjects' attachment histories. The Hansburg neither discriminated between criterion groups nor was it related to the questionnaire. Similarly, Reiter (1980) was unable to differentiate with the

HSAT between groups of persons with hearing impairments who were adjusting differently to their sensory losses. This pattern of null results combines with the lack of any information in Hansburg's (1972) manual about the reliability or validity of the HSAT to raise serious concerns about the instrument's construct validity.

The actual test behaviors and comments of the children who were administered the HSAT in this study provide further doubts about the utility of the instrument for research. Repeatedly, children of all ages and of both overweight and normal weight status described the test as "stupid." The reason given for this response was that the test seemed to assume that situations would appear frightening which the children actually found to be quite benign. Consequently, they objected to the forced-choice format of the test because it did not allow them to give responses which reflected how they themselves felt or how they thought the child depicted in the drawing might feel. While some children handled this situation by choosing the response which they felt was closest to their own reactions, they still found this unsatisfactory. Others said that no response seemed appropriate; they simply skipped portions of the test. The stimulus picture that evoked the most objections was the one portraying a child being put to bed by the mother. Children often objected that none of the alternative responses fits that situation because it is a close



time with the mother that the children enjoy. The very frustration the children experienced appeared to introduce variability.

The test behavior of the subjects also suggested great variation in response sets. While this tendency might be viewed as reflecting different personality traits, there seemed to be such ambiguity in the standard instructions for the test that confusion rather than personality characteristics appeared to be the source of the variability. For example, the children occasionally stated that they were varying their responses quite deliberately with the apparent age of the child in each drawing. Other children would say that they realized that what they were really being asked for was how they, themselves, would respond in this situation and so they would say that they were answering from the perspective of their own actual ages. Some subjects had already completed part of the test when they said that they realized they were responding at an age level different from their own and then changed to give responses consistent with their own feelings. Although there may have been some effort to deny feelings of fearfulness in separation situations in the disclaimer that the responses did not really reflect how they currently feel in such situations, the effect was that of great variability within response set, even within the performance of a single subject. It is difficult to see how, in the light of these observations,

there could be either test-retest or split-half reliability in this instrument. Moreover, the forced-choice format makes this less than a projective test because it does not allow for spontaneous and idiosyncratic responses. It also seems to be less than a questionnaire because the ambiguity introduced by the varied ages of the stimulus figures confuses the respondent about the frame of reference within which the alternative responses are to be chosen.

The HSAT may serve as a better clinical than research instrument. The interpretation of results seems to require constant reference to the response set of the subject. Used idiographically, it may provide helpful insights. Nomothetically, it appears to lack the psychometric qualities essential to research with criterion groups.

Despite the psychometric shortcomings of the HSAT, its Attachment score was related to field-dependent performance as Hansburg had predicted it would be. This finding is consistent with the basic, underlying pattern of parental behavior which Witkin and his colleagues (1962) have related to the development of field dependence and which would be consistent with anxious attachment in the parent-child dyad. This one significant result with the HSAT, however, should be cautiously interpreted. The Individuation and Attachment scores are not related to any other conceptually relevant variable; and, although they are correlated with each other, their relationship is positively signed. To

support the theory that generated them, they should be negatively related.

Although this study produced no evidence to confirm the expectation that obese children have poorer self-concepts, it raises the question of their greater use of denial as a factor possibly explaining the negative results. Whether true feelings about the self are being masked by denial cannot be directly answered from these results. Anxious attachment should, however, produce poor self-concepts in children. Some support for this view may be derived from the relationship found between poor self-concept and the BCL. This finding suggests that anxious attachments may indeed deprive children of the opportunity to develop positive feelings about themselves. The relationship between denial and anxious attachment on the BCL is also consistent with attachment theory; more anxiously attached persons would presumably use more primitive defenses.

A corroborative observation was made of the children's test behavior during the administration of the combined Piers-Harris and Lie Scale. Unfortunately, no quantification was made of a strong tendency among the obese children, rather than the non-obese, to experience difficulty in deciding how they felt about themselves. Repeatedly, obese children of all ages either asked the examiner if

they might ask their parents for help in deciding upon their answers, or they asked the examiner to help. Younger non-obese children sometimes also asked for help, but this was not at all true of the older non-obese children. This difference in test behavior suggests a difference between the degree to which one may be aware of one's own attitudes and feelings--an aspect of self-differentiation--and how one feels about oneself, one's self-concept.

Socioeconomic status was a variable with great influence through this study. As had been established in 1953 by Warner, social class remains a major factor underlying people's attitudes and behaviors. Previous researchers have concluded that obesity is more prevalent in and more accepted by lower socioeconomic groups (Stunkard et al., 1975). This conclusion may be an artifact of the difficulty of getting truly comparable experimental and control groups. As was discussed in Chapter III, it is a major constraint in obesity research that aggregates of obese subjects are most easily obtained in clinics which attract persons of lower SES. Moreover, the apparently greater incidence of obesity in lower SES groups may reflect more limited financial resources and a relative lack of nutritional education that affect their diets. Obesity in such families may also contribute to their low SES status because of discrimination in the employment market against the obese.

Bruch (1961; 1973) and Stunkard and Burt (1967) have viewed the age of onset of obesity as a potentially important variable in explaining the development of body image distortion in the obese. Bruch, in particular, has differentiated "reactive" obesity--that which begins in adult life--from obesity which begins in childhood. Stunkard and Burt have advocated that researchers investigate whether there is a critical period for the body image disturbance found in obese subjects to develop. Grinker et al. (1973) have asserted that body image disturbance is only chronic in those who became obese as children. Because the present study involved only obese and non-obese children, it can say nothing as to whether adults developing obesity also have body image disturbance. The finding, however, that persons with the later onset of obesity--those who were adolescent when they became obese--had the greatest degree of body image disturbance brings into question the concept of a critical period. If one exists, there is no evidence here that it occurs in early childhood. Whether the body image disturbance results from, causes, or merely varies with the obesity is also unclear. The degree of disturbance in the body images of those with the latest onset would seem to suggest that the process-reactive dichotomy is less than heuristic in describing obesity. A "process model" would imply that the greatest distortion should exist

in those with the longest history of the obesity. That later age of onset is related to greater body image distortion may, however, be reflective of the impact of puberty upon the body image as well as the later onset's having given the adolescent less time in which to adjust to the obesity.

The higher Social Desirability scores of the parents of the non-obese children was unexpected. It may simply reflect greater concern with and conformity to prevailing social values in those of higher social class. Greater conformity to and concern with social expectations in these families may be a factor in their children's not becoming obese. Lesser concern with appearances in the families of the obese children may perhaps contribute to their children being obese. It may be speculated also that the parents of both groups may be rating their children on their actual social acceptability. In effect, changing the SD scale from describing the self to describing the child of the respondent may make it more of an index of actual social behavior than of a tendency to present oneself in a socially favorable light. The higher scores of the parents of the non-obese may indicate that their children simply function in a more socially acceptable manner than do the children who are obese.

Some clinical implications may be derived from the results of this study. The support found here for the view

that the relationship between obese children and their mothers is an anxious one suggests that interventions should be directed toward supporting and developing the autonomy of the child, helping the parent to feel less anxious, and teaching the parent how to provide more age-appropriate care. Bruch (1973) has herself stated that it is of prime importance that the therapist never tell an obese child or adolescent what to do. Based on her many years of experience with obese children, she suggested that great patience is needed to avoid the pitfall of telling these children what they think. Morck (1976) also inferred that assertion training to develop the sense of self was needed in persons who had become obese in childhood. The findings in this study support Bruch's and Morck's conclusions; they further suggest that more concern needs to be placed on developing the child's ability to be self-directed than on weight loss. Weight loss in response to external pressure may only reinforce the lack of self-differentiation by preventing the children from deciding for themselves how they want to look as a reflection of how they feel about themselves. Rather than being encouraged to eat according to measured amounts which would only keep them eating as a response to external cues, behavioral modification, and training to eat in response to visceral sensations may instill corrective eating habits and develop an inner guide to eating in response to nutritional need. Focusing the obese child's awareness

within may also help to enhance feelings of self-identity and improve the body image. Increased motility would further develop the body image as well as help to decrease the anxious eating and burn calories.

### Implications for Further Research

An inquiry into the attachment histories of the mothers of obese children would clarify the maternal role in this relationship and could contribute to a greater understanding of anxious attachment in general. Better, more sophisticated, and more sensitive means of measuring anxious attachment are needed. The present study could beneficially be replicated using an attachment history questionnaire like Stone's (1980) as another way of testing for anxious attachment in the families of obese children.

The Hansburg Separation Anxiety Test, as indicated, clearly requires extensive psychometric improvements, including greater (and more definitely specified) reliability, controls for the differential ages of its stimulus figures, sharply reduced variability in the response set it appears to evoke, and evidence for the validity of its subscales.

Self-concept in obese children and its possible relationship to denial should be further investigated. The Social Desirability Scale might profitably also be used to see if the obese children are altering their responses in order to feel more socially accepted. Because the obese



children often stated that they had difficulty deciding whether something on the Piers-Harris was characteristic of them, further research into obese children's awareness of their own thoughts and feelings as an aspect of self-differentiation deserves further study.

### Summary

It appears that anxious attachment is implicated as a psychological component in the etiology of obesity. The anxious nature of the mother-child attachment contributes to the development of the obesity in the child in several ways. The parent's fearfulness that something will happen to the child leads to restrictions on the child's activities, causing reduced metabolic output--a major contributor to the development of obesity--and consequent inactivity and boredom. Because the anxious mother also tends to overfeed due to neurotic overconcern for the child's health, poor eating habits have been established and eating for emotional and externally cued rather than solely nutritional and internal needs has been learned. Boredom, a sedentary life style, and impaired interpersonal relationships which result from the child's overprotection and isolation from others lead the child to overeat even more in an effort at self-comfort. Denial by the parent of the child's separateness and growing autonomy prevents the development of an adequate body image which is the means

and the end product of the differentiation of the self out of the parent-child dyad. The body image distortion is exacerbated by restricted motility as the development of the body image is closely related to motility. Underdevelopment of the body image in itself functions to maintain externally cued eating as the bodily self is not referred to in deciding how much to eat. Failure to develop an adequate body image keeps the individual feeling a lack of self-identity and reinforces an external directedness which is evinced in field dependence.

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## APPENDICES

## APPENDIX A

### LIE ITEMS

## LIE ITEMS

1. Once in a while I think of things that are too bad to talk about.
2. At times I feel like swearing.
3. I do not always tell the truth.
4. I get angry sometimes.
5. Once in a while I put off until tomorrow what I ought to do today.
6. Sometimes when I am not feeling well I am cross.
7. If I could get into a movie without paying and be sure I was not seen I would probably do it.
8. I would rather win than lose in a game.
9. I like to know some important people because it makes me feel important.
10. I do not like everyone I know.
11. I gossip a little at times.
12. Once in a while I laugh at a dirty joke.
13. My table manners are not quite as good when I eat alone as when I am with company.

APPENDIX B

BEHAVIORAL CHECKLIST



# BEHAVIORAL CHECKLIST

Instructions: The statements below describe some behaviors of children. Please indicate the characteristics of your own child's behavior by marking the response which best describes your own child's attitudes, activities, or qualities. Read each statement and then--with your own child in mind--mark whether you Strongly Agree, Agree, Disagree, or Strongly Disagree with each statement.

Here is a sample item:

Strongly Agree    Agree    Disagree    Strongly Disagree

Reads more books than other children.

--	--	--	--

If the statement is highly characteristic of your child, then you would check Strongly Agree.

If the statement is not highly characteristic of your child, but is more characteristic than not, then you would check Agree.

If the statement is generally uncharacteristic of your child, then you would check Disagree.

If the statement is highly uncharacteristic of your child, then you would check Strongly Disagree.

Please respond to the following statements:	Strongly Agree	Agree	Disagree	Strongly Disagree
*1. Frequently reads comics.				
2. Doesn't try to avoid school by claiming to be sick.				
3. Bites fingernails.				
4. Seems more dependent than other children.				
#5. Is liked by most people who know him/her.				
6. Is not unusually shy when meeting adults for the first time.				
7. Dawdles a lot when getting ready to go places.				
*8. Often sings when doing other things.				
9. Doesn't tend to show off or seem to demand extra attention when parent pays attention to other children.				
*10. Shows a strong interest in arts and crafts.				
11. Feels picked on by the teacher.				

\*Neutral items    #Social Desirability Items

BEHAVIORAL CHECKLIST (continued)

	Strongly Agree	Agree	Disagree	Strongly Disagree
#12. Is happy most of the time.				
13. Frequently seems lonely.				
14. Has a number of friends his/her own age.				
15. Does well in school.				
16. Doesn't seem to like it when parents display affection for each other.				
17. Calls home frequently when visiting friends.				
#18. Is hurt terribly by criticism or scolding.				
19. Likes few of the other children he/she knows at school.				
20. Seems resentful or uneasy when parent shows friendliness or affection toward close adult friends.				
21. Opposes parent(s) going out alone for the evening.				
22. Seems significantly more self-confident than other children of the same age.				
23. Lacks confidence about usual physical activities of age-mates such as playing ball, riding bike, roller-skating, etc.				
24. On many mornings shows a dislike of going to school.				
25. Seems nervous or uneasy when has to leave home to go to school, run errands, or visit others.				
#26. Is no more nervous than most other children.				
27. Often calls other children on the telephone.				
28. Daydreams frequently.				

\*Neutral items

#Social Desirability Items

# BEHAVIORAL CHECKLIST (continued)

	Strongly Agree	Agree	Disagree	Strongly Disagree
29. Is comfortable when invited to spend a night at a friend's house.				
30. Typically avoids activities engaged in by other children of the same age.				
#31. Usually expects to succeed in things he/she does.				
*32. Watches television excessively.				
33. Initiates own activities; seems to be a self-starter.				
34. Eats meals with relatively good table manners including not usually spilling beverages or pushing food off the plate.				
35. Seems quite satisfied with own experience.				
36. Often has trouble going to sleep and seems anxious at bedtime.				
*37. Is hard to awaken in the morning.				
38. Often seems to be afraid of getting hurt.				
39. Makes own decisions about how to spend his/her own money.				
*40. Seems to need to urinate uncommonly often.				
#41. Would rather sit and daydream than do anything else almost any time.				
42. Seems to prefer being with me rather than with age-mates.				

Please check the item or items which apply:

43. Obtains own money by:      {    } Regular allowance  
                                          {    } Jobs around home or neighborhood  
                                          {    } Given by parents as needed

\*Neutral items      #Social Desirability Items

APPENDIX C

MINOR SUBJECT'S INFORMED  
CONSENT FORM

### MINOR SUBJECT'S INFORMED CONSENT FORM

My mother/father has told me that if I agree to be a subject in this study, I will be asked to look at some pictures and find some hidden figures. I will also be shown some pictures and be asked to pick the sentence or sentences which seem(s) best to fit how I feel about each picture. I will also be asked to answer some written questions about how I feel about myself and to make two drawings of people.

My mother/father has told me that I am only to do this study if I want to and that no one can make me do it. I can stop being in the study any time I want. If I decide to stop, I do not have to say why I want to stop.

I agree to be in this study.

\_\_\_\_\_  
Subject's signature

Date \_\_\_\_\_

APPENDIX D

CONSENT TO ACT AS A SUBJECT  
IN RESEARCH PROJECT

CONSENT TO ACT AS SUBJECT IN A RESEARCH PROJECT:

Personality Characteristics, Body Image, and Early Experience  
in Children Ages 9 through 16

I hereby authorize Regina Kay, M.A., to perform the following study on my child. This study is designed to contribute to a greater understanding of the way individuals are affected by early experiences. I understand that my child has been asked to participate because she/he is within the age range under study.

I understand that if my child is a subject, he/she will be interviewed individually for a period of one to one and one-half hour(s) during which she/he will be shown some pictures and will be asked to find some hidden figures. He/she will also be shown some pictures and be asked to choose the sentence or sentences which best fit(s) her/his own response from a provided listing of sentences. She/he will be asked to draw two human figures and to answer some written questions about how he/she feels about himself/herself.

I understand that I will be asked to respond to a brief questionnaire about my child's behaviors. I will also be asked to supply some demographic and health history information about my child.

The above procedures have been explained to me by Regina Kay, M.A.

I understand that the study described above may involve the following risks or discomforts:

- 1) Possible boredom
- 2) Investment of time during participation

I understand the possible benefits of the study are:

- 1) An increased understanding of how early experiences affect children.
- 2) If I so request, the investigator will provide me with feedback from the testing as to my child's emotional functioning which may enable me better to understand my child's needs.
- 3) My child may feel he/she has contributed to knowledge by participating in this study.

I understand that Regina Kay, M.A., who can be reached at (213) 393-5584, 1544 Sixth Street, Suite 201, Santa Monica, California, 90401 will answer any questions I may have at any time concerning details of the procedures performed as part of this study. If the study design or use of the data is to be changed, I will be so informed and my consent will be re-obtained.

I understand that I have the right to refuse to have my child participate in this study or to withdraw my child from this research at any time without prejudice. I understand that my child may refuse to participate in this study or to withdraw from this research at any time without prejudice. I understand that neither my child nor I must state a reason for choosing to withdraw from this study.

Because of the scientific nature of the study, the investigator may stop it at any time.

In signing this consent form, I acknowledge receipt of a copy of the form.

In signing this consent form, I agree to fill out the demographic and health history information sheet and the questionnaire on my child's behaviors and I also consent to his/her participation in this study.

\_\_\_\_\_  
Name of Subject

Subject is a minor (Age\_\_\_\_)

\_\_\_\_\_  
Signature of Mother

\_\_\_\_\_  
Signature of Father

Date \_\_\_\_\_

\_\_\_\_\_  
Subject's signature if 12 years  
or older

I, the undersigned, have defined and fully explained the studies involved to the above subject and parents.

\_\_\_\_\_  
Regina Kay, M.A.

Date \_\_\_\_\_



APPENDIX E

CONSENT TO ACT AS A SUBJECT

IN RESEARCH PROJECT

(UCLA SUBJECTS ONLY)

CONSENT TO ACT AS SUBJECT IN A RESEARCH PROJECT:

Personality Characteristics, Body Image, and Early Experience  
in Children Ages 9 through 16

I hereby authorize Regina Kay, M.A., to perform the following study on my child. This study is designed to contribute to a greater understanding of the way individuals are affected by early experiences. I understand that my child has been asked to participate because she/he is within the age range under study.

I understand that if my child is a subject, he/she will be interviewed individually for a period of one to one and one-half hour(s) during which she/he will be shown some pictures and will be asked to find some hidden figures. He/she will also be shown some pictures and be asked to choose the sentence or sentences which best fit(s) her/his own response from a provided listing of sentences. She/he will be asked to draw two human figures and to answer some written questions about how he/she feels about himself/herself.

I understand that I will be asked to respond to a brief questionnaire about my child's behaviors. I will also be asked to supply some demographic and health history information about my child.

The above procedures have been explained to me by Regina Kay, M.A.

I understand that the study described above may involve the following risks or discomforts:

- 1) Possible boredom.
- 2) Investment of time during participation.

I understand the possible benefits of the study are:

- 1) An increased understanding of how early experiences affect children.
- 2) If I so request, the investigator will provide me with feedback from the testing as to my child's emotional functioning which may enable me better to understand my child's needs.
- 3) My child may feel he/she has contributed to knowledge by participating in this study.

I understand that Regina Kay, M.A., who can be reached at (213) 393-5584, 1544 Sixth Street, Suite 201, Santa Monica, California, 90401 will answer any questions I may have at any time concerning details of the procedures performed as part of this study. If the study design or use of the data is to be changed, I will be so informed and my consent will be re-obtained.

I understand that I have the right to refuse to have my child participate in this study or to withdraw my child from this research at any time without prejudice. I understand that my child may refuse to participate in this study or may withdraw from this research at any time without prejudice. I understand that neither my child nor I must state a reason for choosing to withdraw from this study.

Because of the scientific nature of the study, the investigator may stop it at any time.

I have been informed that the general results of this study will be shared with the clinic but no specific information on any individual child will be disclosed. I have been informed that my identity and my child's identity will not be revealed except as required by law. Confidentiality and anonymity will be ensured by the use of a code number rather than our names for the purpose of data identification.

I understand that if I have any questions, comments, or concerns about the study or the informed consent process, I may address them to Associate Vice-Chancellor--Research, 3134 Murphy Hall, UCLA, Los Angeles, California, 90024 (213) 825-8714.

In signing this consent form, I agree to fill out the demographic and health history information sheet and the questionnaire on my child's behaviors and I also consent to his/her participation in this study.

\_\_\_\_\_  
Name of Subject

Subject is a minor (Age\_\_\_\_)

\_\_\_\_\_  
Signature of Mother

\_\_\_\_\_  
Signature of Father

Date \_\_\_\_\_

\_\_\_\_\_  
Subject's signature if 12 years  
or older

I, the undersigned, have defined and fully explained the studies involved to the above subject and parents.

\_\_\_\_\_  
Regina Kay, M.A.,  
Investigator

Date \_\_\_\_\_

## APPENDIX F

### BACKGROUND INFORMATION

Code Number \_\_\_\_\_

### BACKGROUND INFORMATION

Instructions: PLEASE COMPLETE THE FOLLOWING ITEMS:

1. Your child's date of birth \_\_\_\_\_
2. Your child's sex (please circle) Male Female
3. Your occupation \_\_\_\_\_
4. Your spouse's occupation \_\_\_\_\_
5. Your other children's ages and sex \_\_\_\_\_
6. Your education:

EDUCATION IN YEARS:  
(check one)

- \_\_\_\_\_ 0- 8 years
- \_\_\_\_\_ 9-12 years
- \_\_\_\_\_ 13-16 years
- \_\_\_\_\_ over 16 years

DEGREE:  
(check one)

- \_\_\_\_\_ High School
- \_\_\_\_\_ Junior College
- \_\_\_\_\_ College
- \_\_\_\_\_ Graduate School

7. Your spouse's education:

EDUCATION IN YEARS:  
(check one)

- \_\_\_\_\_ 0- 8 years
- \_\_\_\_\_ 9-12 years
- \_\_\_\_\_ 13-16 years
- \_\_\_\_\_ over 16 years

DEGREE:  
(check one)

- \_\_\_\_\_ High School
- \_\_\_\_\_ Junior College
- \_\_\_\_\_ College
- \_\_\_\_\_ Graduate School

8. With what ethnic group or groups do you identify? (For example, Irish, Jewish, Black, Mexican-American, or Chicano) \_\_\_\_\_
9. With what ethnic group or groups does your spouse identify? (For example, Irish, Jewish, Black, Mexican-American, or Chicano) \_\_\_\_\_
10. If you are not presently married to your child's other parent, please check whether you are: ( ) Divorced ( ) Widowed ( ) Separated
11. If you are divorced or widowed, have you remarried?  
(please circle) Yes No

12. If you and your spouse are divorced or separated, in what year did the separation occur? \_\_\_\_\_
13. With whom does the child usually reside? (please circle)
- |                               |                       |        |
|-------------------------------|-----------------------|--------|
| Both parents                  | Mother                | Father |
| Mother and stepfather         | Father and stepmother |        |
| Other (please describe) _____ |                       |        |
14. Please check below any health problems which have occurred either in your family or in your apouse's family:
- ( ) High blood pressure
  - ( ) Diabetes
  - ( ) Glandular disorders
  - ( ) Dizziness
  - ( ) Obesity
  - ( ) Visual problems
  - ( ) Hearing impairments
  - ( ) Speech problems
15. What is your child's height? \_\_\_\_\_
16. What is your child's weight? \_\_\_\_\_
17. If your child has any of the health problems listed in item #14 above, please list them and the age at which each occurred (for example, high blood pressure, age 8; speech problems, age 3) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
18. If your child is a boy, has he experienced a spurt of growth which is associated with puberty? (circle one) Yes No
19. If your child is a girl, has she experienced breast development associated with puberty? (circle one) Yes No
20. If your child is a girl, has she begun to menstruate? (circle one) Yes No