BODY BUILD STEREOTYPES IN THREE-, FOUR-, AND FIVE-YEAR-OLD CHILDREN

by

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The purpose of the study was to determine if a group of three-, four-, and five-year-old children exhibited the stereotypes relating to the mesomorphic, endomorphic, and ectomorphic body builds that have been found consistently among older subjects. The older subjects judged the endomorph and ectomorph to be less favorable than the mesomorph and professed a desire to look like the mesomorph.

Children over an age span of 43.9 months to 64.7 months were tested to determine if the stereotypes were present and, if found to be present, to determine at what age they appeared. All subjects were enrolled in a preschool: seventy-five were in a University of North Carolina at Greensboro center; the remaining fifteen were in a local, church-sponsored program.

An instrument was devised to judge the presence of the stereotypes. A checklist of age-appropriate adjectives was compiled, similar to checklists found in the literature relating to identification of body build stereotypes. Also included as a part of the instrument were stimulus drawings of the three body builds--endomorph, ectomorph, and mesomorph. Children were asked to assign each item from the adjective checklist to one of the three stimulus drawings. Each subject was asked to select the body build that he perceived himself to look like.

A one-way chi-square analysis was used to determine if any one adjective was attributed more often to a particular body build than to any other. A chi-square analysis was used as well to determine if a larger number of subjects correctly identified their own body builds than did not.

There appeared to be no support for all age groups for the hypotheses that the endomorphic and ectomorphic body builds would be assigned unfavorable adjectives, while the mesomorphic body build would be assigned the more favorable adjectives.

It was concluded that the three-, four-, and five-year-old children in this study did not exhibit body build stereotypes consistent with the literature. The five-year-olds did show some evidence of body build stereotypes but not to an extent that would allow for the acceptance of the hypotheses. A larger number of five-year-olds correctly identified their own body builds, but again not enough to allow for acceptance of the hypothesis.

CHAPTER I

INTRODUCTION

A perusal of research relating to social stereotypes of body builds leads one to reason that the behavior expected by others is related to body types. McCandless (1961) stated that

> if a certain type of body build or quality arouses characteristic and consistent negative or positive social reaction, then according to social learning theory, predictable and differential types of personality will occur. (p. 303)

Numerous researchers (Brodsky, 1954; Lerner & Gellert, 1969; Lerner & Korn, 1972; Staffieri, 1967; Staffieri, 1972; Walker, 1962) have used this rationale to justify studies aimed at determining if these body related connotations occur. Most of these researchers have used modifications of Sheldon's (1940) characterization of body build and related personality stereotypes. Sheldon inferred from his work that these associations between body build and personality were biological in nature rather than learned associations. However, while using the three basic somatotypes identified by Sheldon (endomorph, mesomorph, and ectomorph) researchers have rejected his "constitutional" theory and instead adhere to an interpretation of body build stereotypes as a result of social learning theory.

Walker (1962) found that ratings of nursery school teachers of children (male and female) aged two years six months through four years eleven months consistently showed associations between somatotype and personality congruent to those described by Sheldon for college aged males. In an early study Brodsky (1954) attempted to show that there are different reactions to each of the characteristic body builds. He found that college aged males consistently ascribed negative and less socially desirable traits to the endomorph and ectomorph body types, with the ectomorph receiving a slightly more positive description than the endomorph. By far the mesomorph body type was the most favored by the subjects. Hanley's (1951) study of junior high school males showed similar correlations.

These studies lead one to suggest that if certain somatotypes produce consistent reactions by adults and adolescents then there is a possibility that these same stereotypes could elicit similar responses in children. If these stereotypes are present in younger children then their impact on the development of personality and social behavior could be substantial.

Staffieri (1967) found that males, aged six to ten years, exhibited definite stereotypes of body build. The mesomorph somatotype was seen as entirely favorable while the endomorph and ectomorph body types were viewed as unfavorable (although each of these two unfavorable types had different

connotations). Those traits assigned to the endomorph were unfavorable and pointed to a socially aggressive model; those assigned to the ectomorph were of a socially submissive nature (p. 103). In a later study with females Staffieri (1972) found these same stereotypes to hold true with the exception of the ectomorph model, which received few significant adjectives.

Lerner and Gellert (1969) postulated that the imposition of these stereotypes on an individual will in part mold his personality and social behavior. They identified two types of social learning that would account for the presence of the stereotypes. One was the notion that the stereotypes are learned as part of our culture rather than through actual experiences with people exhibiting these behaviors. The second was that they encountered individuals whose actual body types and personalities were congruent with the traditional stereotypes.

Lerner and Korn (1972) studied the effects of positive and negative stereotypes on an individual's perception of his own body and self. Research with males, aged five, fourteen, and twenty years, showed that those having the favored physique (mesomorph) identified their somatotypes correctly while those having the less favored physique (endomorph) denied any association with their own body builds. It appeared that "as an indirect effect of the body build stereotype a negative body concept is inculcated while

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in mesomorphic children a positive body concept is formed" (p. 919).

The cited research has dealt predominantly with subjects in middle childhood, adolescence, and adulthood. A few studies have been done with five-year-olds (Lerner & Gellert, 1969; Lerner & Korn, 1972). It is the purpose of the present research to determine whether body build stereotypes are present in a group of three-, four-, and five-year-old children enrolled in a university nursery school. If stereotypes are found to exist, the research will determine whether they follow the direction of the stereotypes found consistently with older subjects. In addition the research is intended to determine if three-, four-, and five-year-old children perceive their own body types correctly.

For the present research the following hypotheses will be tested.

1. A significantly larger number of socially favorable adjectives will be used by the three-year-old subjects to describe the mesomorph than will be used to describe the endomorph or ectomorph models.
2. A significantly larger number of socially unfavorable adjectives will be used by the three-year-old subjects to describe the endomorph model than will be used by the subjects to describe the mesomorph model.
3. A significantly larger number of socially unfavorable adjectives will be used by the three-year-old

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subjects to describe the ectomorph than will be used to describe the mesomorph model.

4. A significantly larger number of socially favorable adjectives will be used by the four-year-old subjects to describe the mesomorph model than will be used by the subjects to describe the endomorph or ectomorph models.
5. A significantly larger number of socially unfavorable adjectives will be used by the four-year-old subjects to describe the endomorph model than will be used by the subjects to describe the mesomorph model.
6. A significantly larger number of socially unfavorable adjectives will be used by the four-year-old subjects to describe the ectomorph model than will be used to describe the mesomorph model.
7. A significantly larger number of socially favorable adjectives will be used by the five-year-old subjects to describe the mesomorph model than will be used to describe the endomorph or ectomorph models.
8. A significantly larger number of socially unfavorable djectives will be used by the five-year-old subjects to describe the endomorph model than will be used by the subjects to describe the mesomorph model.

9. A significantly larger number of socially unfavorable adjectives will be used by the five-year-old subjects to describe the ectomorph model than will be used to describe the mesomorph model.
10. A significantly larger number of socially favorable adjectives will be used by all subjects to describe the mesopmoph model than will be used to describe the endomorph or ectomorph models.
11. A significantly larger number of socially unfavorable adjectives will be used by all subjects to describe the endomorph model than will be used by the subjects to describe the mesomorph model.
12. A significantly larger number of socially unfavorable adjectives will be used by all subjects to describe the ectomorph model than will be used to describe the mesomorph model.
13. The three-, four-, and five-year-old children will correctly identify their own body types.

For the purpose of this research, the following definitions will be used.

Endomorph: "relative predominance of soft roundness throughout the various regions of the body" (Sheldon, 1940, p. 5). Recognizable as "chubby".

Mesomorph: "relative predominance of muscle, bone, and connective tissue" (Sheldon, 1940, p. 5). Recognizable as "muscular".

Ectomorph: "relative predominance of linearity and fragility" (Sheldon, 1940, p. 5). Recognizable as "thin".

CHAPTER II

REVIEW OF LITERATURE

The idea that a relationship exists between temperament and body type has been in the minds of men since early times. Tucker and Lessa (1940) compiled an extensive review of discussions and studies relating to the area, citing such philosophers as Aristotle and Hippocrates, and reporting their view that such a relationship was indeed present. The research of Sheldon (1940) led him to contend that there are definite biologically determined associations between body build and temperament. He labeled this approach as "constitutional" and his study of the relationship as the study of constitutional psychology, defined as "the study of the psychological aspects of human behavior as they are related to the morphology and physiology of the body" (Sheldon, 1940, p. 1). Sheldon identified three predominant body types--endomorph, ectomorph, and mesomorph--and the three corresponding personality types--viscertonic, cerebrotonic, and somatotonic. The endomorphic somatotype (see definitions in the preceding chapter) corresponds with the viscertonic personality, defined by Sheldon as a generally relaxed person, enjoying the comforts of life, easily communicating joy and sorrow. The mesomorph is somatonic, one who is energetic, never tiring, athletic, extroverted.

The ectomorph exhibits the cerebrotonic traits of easily fatigued, introverted, and inhibited (Sheldon, 1940, p. 8). Sheldon was adamant, however, in stressing that for his classification purposes, one could not identify a body as either endomorphic, ectomorphic, or mesomorphic. Each individual would be likely to possess some of the attributes of two or even three of the more general body types. This concept held true as well for the personality types. No person was completely viscertonic, somatotonic, or cerebrotonic but instead a combination of two or three types.

Sheldon's conclusions point to the idea that constitution (i.e., physical makeup) determines temperament. Many researchers (Cortes & Gatti, 1965; Hanley, 1951; Walker, 1962; Walker, 1963; Wells & Seigel, 1961) acknowledge this relationship between a person's body type and personality; others acknowledge this relationship but question Sheldon's constitutional explanation (Brodsky, 1951; Lerner, 1969a; Lerner, 1969b; Lerner & Gellert, 1969; Lerner & Korn, 1972); Lerner & Schroeder, 1971; McCandless, 1967; Staffieri, 1967; Staffieri, 1972).

One of the early studies following Sheldon's was conducted by Brodsky (1954). Working with college aged males (two groups: one black, one white), he found that essentially undesirable traits were attributed to the endomorph, who was characterized as "suited for nothing except consuming large quantities of food" (p. 97). The mesomorph, however,

received most of the favorable traits and was described as "a leader who knows his potentialities, and these potentialities are recognized by others" (p. 97). These findings support Sheldon's characterizations. Brodsky's only attempt to determine the origin of these stereotypes was to conclude that expectations leading to stereotypes can influence socialization of individuals possessing these somatotypes: Hanley (1951) compared somatotypes (as determined by a Sheldon type method) of junior high school males with their Reputation Test scores to determine that for ectomorphs and mesomorphs, Sheldon's reported relationships existed in junior high school males. However, the magnitude of the relationships was somewhat less than those reported by Sheldon.

Wells and Seigel (1961) had adults, male and females, rate pictures of somatotypes (as described by Sheldon, 1940) by use of a bipolar rating scale (with poles like dependent-self-reliant, fat-thin). Their results coincided with those reported by the above cited researchers. The endomorph received descriptions such as old fashioned, less strong, less good looking, and more dependent on others. The ectomorph was rated as more suspicious of others, more tense and nervous, less masculine, and more pessimistic. The mesomorph received a much more positive rating: more masculine, more adventurous, more mature, and more self reliant. Wells and Seigel concluded that people do believe that there are certain personality characteristics associated with certain

body builds. They suggested as well that "it is equally reasonable to assume that stereotypes of somatotypes represent a distillation of ages of social experiences; that even if they are not determined in the embryo, they are self-perpetuating and effective forces in the social environment" (p. 78).

Walker (1962) conducted extensive research with nursery school children to determine if the stereotypes reported from research with adolescents and adults were present in young children, thus avoiding partially the impact of the cultural influences of later years. He did so by assessing nude photographs of the subjects to determine body types and comparing this to nursery school teachers' judgments of behavior of subjects. He found that the asoociations did exist between an individual's physique and the reported behavior characteristics. Like Hanley, however, Walker found that the associations were not as strong as Sheldon reported. It is important to note here that it was not actual behavior that was compared but instead teachers' ratings of behavior. McCandless (1961) suggested that the teachers could have conceivably interpretated the behavior observed as a sort of self fulfilling prophecy of the stereotypes, i.e., if a child is of a particular somatotype, then he would be expected to behave in the stereotypical way.

Cortes and Gatti (1965) approached the question of relationship between physique and temperament in a different way.

The subjects were separated into three groups--high school males (mean age 17.5 years), college-aged females (mean age 20 years), and male convicted criminals within the Washington, D. C. prison system. The experimenter rated the subjects' somatotype by a method developed by Parnell (1958), a variation of Sheldon's somatotyping method. The subjects were then instructed to complete a fill-in-the-blank type test, with fill-in choices limited to items chosen from a list of temperamental traits of each of the three personality types: viscertonic, somatotonic, and cerebrotonic. The correlation between the judged physique and self description was then determined. Findings for all groups were positive. In each case the self description of the individual pointed to the judged somatotype.

Previously cited studies have shown that there is a relationship between somatotype and personality. The cited research has been primarily concerned with whether or not these stereotypes were found across age and cultural groups. Many of these researchers have not been satisfied with Sheldon's hypothesis that the relationship is biological, but have only mused about alternate reasons for this phenomenon. Researchers in the mid to late sixties began to question the cause of the stereotypes (Lerner, 1969a; Lerner, 1969b; Lerner & Gellert, 1969; Lerner & Korn, 1972; Lerner & Schroeder, 1971; McCandless, 1961; Staffieri, 1967; Staffieri, 1972) and thus the research took on a different impetus. Not

only were they attempting to identify the stereotypes, they were also attempting to determine the relationship of age to the process and also an explanation for the stereotypes other than Sheldon's constitutional theory.

Staffieri (1967), in a study conducted with males six to ten years of age, investigated the role of these stereotypes in relation to their development, social function, and interpersonal functions. Subjects assigned descriptive adjectives to silhouettes of three body types. He found that these children exhibited the commonly held stereotypes--favorable adjectives to the mesomorph, and unfavorable adjectives to the endomorph and ectomorph. The favorable attitude is present at age six although the desire to look like the mesomorph was not found to be present until age seven or age eight. Correct self-perception was attained at approximately age eight. Stafferi concluded from these findings that while some behaviors may be determined by body build, there is also a strong possibility that these stereotypes are a function of expected behavior.

In his book Children and Adolescents, McCandless (1961) suggested that the connection between physique and personality shown by a considerable number of studies is not necessarily a function of genetics but instead an outgrowth of consistent positive and negative reinforcement exhibited to the various body types. Lerner and Gellert (1969) rejected Sheldon's hypothesis and in its place formulated two

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possibilities for a social learning theory. This led to the hypothesis that young children are subjected to these stereotypes as a part of their socialization process and thus absorb them from the culture, apart from their own peer experience. Further, it hypothesized that at the time the child is mentally able to perceive these stereotypes he may be in contact with people exhibiting these stereotyped behaviors. It is important to find out at what age children perceive these stereotypes. Lerner (1969a) found that college aged females held the common stereotypes for males as did the males in a similar study done the same year (Lerner, 1969b). In both studies the mesomorph was given socially positive descriptions while the endomorph and ectomorph received socially negative descriptions. He felt these results were support for what he termed the "social inculcation theory" (Lerner & Geller , 1969); that is, "people in a child's socializing environment do stereotypically associate various behavior/personality traits with specific body builds" (Lerner, 1969a, p. 366). Thus, by way of social learning theory, children are exposed to these stereotyping attitudes from birth. Further support for the social learning interpretatian is given by a study conducted by Staffieri (1972) in which females, aged seven to eleven, showed common stereotypes for endomorphs and mesomorphs but not the commonly held negative view of the ectomorph. This could be explained by the acceptance (and in some cases the desirability) of submissive, quiet behavior

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for females and also the cosmetic desirability of thinness for women. Lerner and Korn (1972) have gone so far with the social learning theory as to suggest that the child may observe his own body type and thus begin to behave in a way as to conform to the perceived stereotype. The child may instead deny the association between his behavior and the expected stereotypical behavior, prefer a more favored physique, and thus an identity problem may arise having perhaps serious effects on the child's self image.

The cited research gives information that leads one to conclude that body build stereotypes are found in varying degrees of strength in adults and in children as young as age six. This evidence appears to support Lerner's social inculcation theory. Those age groups in which the stereotypes are present represent stages in life in which socialization has taken place with peers because of wider school, play, and work activities. Socialization of young children often is centered within the family; many times they do not have such extensive peer relationships that would influence attitudes about issues such as somatotyping. It is the purpose of the present research to determine if the described stereotypes are present in three-, four-, and five-year-old children. The design of the experiment will be presented in Chapter III.

CHAPTER III
METHODOLOGY

Research has shown that body build stereotypes do exist in kindergarten through adult subjects and are found in both males and females (Brodsky, 1951; Cortes & Gatti, 1965; Hanley, 1951; Lerner, 1969a; Lerner, 1969b; Lerner & Gellert, 1969; Lerner & Korn, 1972; Lerner & Schroeder, 1971; Sheldon, 1940; Staffieri, 1967; Staffieri, 1972; Walker, 1962; Wells & Seigel, 1961). Consistently, endomorphs were found to receive less favorable descriptions than either the ectomorph or the mesomorph. The mesomorphs received the most favorable descriptions while those adjectives assigned to the ectomorph were negative, but not to the degree found with the endomorphs.

It was the purpose of the present research to determine whether body build stereotypes were present in a group of three-, four-, and five-year-old children. If the stereotypes were found to exist, it was the purpose to derermine whether they follow the direction of the stereotypes found consistently with the older subjects of the previously cited research. It was also the purpose of the present research to determine if three-, four-, and five-year-olds could correctly identify their own somatotypes.

Instrument

A list of thirty adjectives was compiled from similar lists found in the literature (Brodsky, 1954; Lerner, 1969b; Lerner & Korn, 1972; Staffieri, 1967; Staffieri, 1972) and from teachers, each trained in child development and currently teaching in one of the UNC-G Laboratory Schools. A major consideration in compiling the adjective checklist was that each adjective be understood by each child tested. Initially an extensive list of over sixty adjectives was submitted to the teachers in the Laboratory Schools. The teachers were asked to evaluate each adjective to determine if a three-, four-, or five-year-old could comprehend its meaning. Thirty of those adjectives (or adjective phrases) were accepted by all of the teachers and included in the checklist. Before administering the test the teacher of each group to be tested evaluated the list to insure that the children in the classroom understood each adjective. It was not necessary to delete any item. See Appendix A.

Line drawings of three full body silhouettes, representing endomorphs, ectomorphs, and mesomorphs, were used as stimuli. Each silhouette was approximately nine inches tall and had the same head shape and facial design. The drawings were standardized by Lerner and used in several of his studies relating to somatotype stereotyping (Lerner, 1969a; Lerner & Gellert, 1969; Lerner & Korn, 1972). The drawings were mounted, separately, onto black construction

board. Six such mats were constructed, with the drawings in different order: endomorph, mesomorph, ectomorph; mesomorph, endomorph, ectomorph; mesomorph, ectomorph, endomorph; endomorph, ectomorph, mesomorph; ectomorph, endomorph, mesomorph; and ectomorph, mesomorph, endomorph. (See Sppendix B.)

Fifteen children (five three-year-olds, five four-year-olds, and five five-year-olds) participated in a pilot test conducted to determine if the children could respond to the drawings and the checklist in the desired way. Each child did appropriately assign the adjectives to the stimulus drawings. (The appropriateness did not refer to the hypothesized direction but to the mechanical aspect of the task.) The responses of the children in the pilot study were not included in the statistical analysis.

Subjects

Ninety three-, four-, and five-year-old children were used as subjects. (Thirty children were in each age group.) Of these children seventy-five were enrolled in one of the three University of North Carolina at Greensboro Laboratory Schools; the remainder (fifteen) were enrolled in a private, church-sponsored preschool program in Greensboro, North Carolina. Their ages ranged from 36 months through 71 months. Mean age for the three-year-old subjects was 43.9 months; for the four-year olds, 54.9; and for the five-year-olds, 64.7. (See Table 1.)

Table 1

Distribution of Subjects' Ages in Months

Three-year-olds N=30	Four-year-olds N=30	Five-year-olds N=30
36	48	60
36	49	60
37	51	60
38	51	60
41	51	61
41	51	62
42	53	62
42	53	62
43	54	62
43	54	62
43	54	62
44	54	62
44	54	63
45	55	64
45	55	64
46	56	64
46	56	65
46	56	65
46	56	66
46	56	66
46	56	68
46	57	68
46	57	69
47	58	69
47	58	70
47	58	70
47	58	70
47	59	71
47	59	71
47	59	71
Mean Age 43.9	54.96	64.7

Method of Data Collection

Prior to administration of the instrument the investigator visited in each classroom in order to gain familiarity with the children. Each child was taken individually to a room away from the classroom but within the same physical structure, with the exception of the subjects from the Carter Child Care Center, who were taken to a nearby building. In each instance, at the time of the testing, the room used for testing was being used for no other purpose.

Subjects were incidentally assigned to particular mats to be used with the adjective checklist to prevent the emergence of significant results as a function of the order of the drawings. Each mat was used five times with each age group, for a total of fifteen times. Each child was evaluated by the teacher and the researcher to determine his (or her) body type.

The child was presented with the matted stimulus drawings, and asked to point to the picture that was like the adjective given. An example would be: "point to the child who is brave" or "which child would be the best friend?" The investigator then recorded on the score sheet the drawing the subject pointed to or named. Upon completion of the thirty-item checklist the child was asked to point to the picture that looked like him or her. This was recorded by the investigator. The administration of the instrument took approximately eight to ten minutes per child.

Statistical Analysis

Each child's responses to the thirty items were noted on the adjective checklist by a checkmark. The marks were tallied to find the number of responses for each somatotype for each adjective. A tally was done for each age group and then for the entire sample.

Hypotheses 1 through 12 were analyzed by means of a one-way chi-square analysis. Hypothesis 13 was analyzed by determining the percentage of subjects correctly identifying their own somatotypes. The findings are presented in Chapter IV.

CHAPTER IV

RESULTS AND FINDINGS

The present study was an investigation of the presence of body build stereotypes in three-, four-, and five-year-old children. Ninety subjects were asked by the researcher to assign adjectives to one of the three body types represented by line drawings. The three body types were those designated by Sheldon (1940) as endomorph, ectomorph, and mesomorph. Children's responses were analyzed by computing a chi square statistic to determine whether an adjective was assigned to a particular body type significantly more often than to any one of the other body types. Each age group was analyzed separately to determine differences found by age.

For the three-year-old children three adjectiveswwere found to be significant (see Table 2) at the $p < .05$ level. A significantly larger number of subjects designated the endomorphic line drawing to be ugly; a significantly smaller number chose the mesomorphic drawing. According to the concept of chi square goodness of fit (Roscoe, 1975) the researcher expected each body type to be chosen by ten of the subjects of each age group, for each adjective. In the case of the ectomorph, for the adjective ugly, this held true. For the item fights, significantly more chose the endomorph, and significantly less chose the ectomorph (see

Table 2

Frequency of Assignment of Each Adjective to Each Somatotype by Three-Year-Olds
N=30

Adjective	Somatotype			χ^2
	Endo	Meso	Ecto	
1. Brave	7	11	12	1.4
2. Loud	15	7	8	3.8
3. Large	8	13	9	1.4
4. Remembers	12	11	7	1.4
5. Does not tease	8	11	11	.6
6. Forgets	9	11	10	.2
7. Dirty	9	8	13	1.4
8. Sick	9	12	9	.6
9. Afraid	14	7	9	2.6
10. Selfish	10	10	10	0.0
11. Slow	8	10	12	.8
12. Quiet	13	12	5	3.8
13. Small	6	11	13	2.6
14. Shares	6	15	9	4.2
15. Sad	15	9	6	4.2
16. Healthy	8	9	13	1.4
17. Best Friend	6	12	12	2.4
18. Eats the most	14	7	9	2.6
19. Eats the least	6	11	13	2.6
20. Runs the slowest	9	13	8	1.4
21. Happy	9	9	12	.6
22. Teases	11	7	12	1.4
23. Clean	8	11	11	.6
24. Ugly	16	4	10	7.2*
25. Pretty	8	13	9	1.4
26. Which would you not like for your best friend	7	13	10	1.8
27. Fights	18	8	4	10.4*
28. Fast	5	9	16	6.2*
29. Does not fight	8	14	8	2.4
30. Runs fastest	8	14	9	1.4

Note: Endo=Endomorph; Meso=Mesomorph; Ecto=Ectomorph

* $p < .05$

Table 2). Of the thirty subjects responding, sixteen chose the ectomorph to represent the item fast. Significantly fewer subjects chose the endomorph as the fast one. Although of these three items each followed the expected direction (that of the endomorph being less favorable, the ectomorph and the mesomorph being more favorable) it was felt that three items out of a possible thirty was not enough to determine conclusively that body build stereotypes are present in three-year-old children. Therefore, due to this lack of significance in regard to the number of adjectives for which there were differences, Hypotheses 1, 2, and 3 were rejected.

Three adjectives were found to be significant at the $p < .05$ level for four-year-olds (see Table 3). Significantly more four-year-olds described the endomorph as being brave, while a significnatly smaller number of subjects reported the endomorph to eats the most; a significantly smaller number attributed this trait to each of the other two somatotypes. The four-year-olds chose the endomorph significantly more times as the one who would fight; the ectomorph was selected fewer times as a fighter. As was concluded from the data, there did not appear to be enough adjectives (which were significantly different) to support the hypotheses relating to four-year-olds--Hypotheses 4, 5, and 6. (It should be noted here that of the three significant adjectives, one, brave, did not follow the expected direction. Brave was considered to be a favorable adjective and, according

Table 3

Frequency of Assignment of Each Adjective to Each Somatotype by Four-Year-Olds
N=30

Adjective		Somatotype			χ^2
		Endo	Meso	Ecto	
1.	Brave	15	4	11	6.2
2.	Loud	10	15	5	5.0*
3.	Large	6	9	5	4.2
4.	Remembers	8	10	12	.8
5.	Does not tease	11	8	11	.8
6.	Forgets	10	13	7	1.8
7.	Dirty	10	11	9	.2
8.	Sick	9	9	12	.6
9.	Afraid	11	12	7	1.4
10.	Selfish	12	6	12	2.4
11.	Slow	6	14	10	3.2
12.	Quiet	10	7	13	1.8
13.	Small	10	10	10	0.0
14.	Shares	13	9	8	1.4
15.	Sad	9	13	8	1.4
16.	Healthy	8	11	11	.6
17.	Best Friend	8	13	9	1.4
18.	Eats the most	18	7	5	9.8*
19.	Eats the least	7	7	16	5.4
20.	Runs the slowest	9	12	9	2.6
21.	Happy	7	14	9	2.6
22.	Teases	13	9	10	1.8
23.	Clean	11	9	10	.2
24.	Ugly	14	10	6	3.2
25.	Pretty	15	8	12	.8
26.	Which would you not like for your best friend?	11	9	10	.2
27.	Fights	17	8	5	7.8
28.	Fast	7	9	14	2.6
29.	Does not fight	8	7	15	3.8
30.	Runs fastest	11	13	6	2.6

Note: Endo=Endomorph; Meso=Mesomorph; Ecto=Ectomorph

* $p < .05$

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to Hypothesis 4, should have been assigned to the mesomorph, rather than to the endomorph somatotype.)

A larger number of significant adjectives emerged from the five-year-old group (see Table 4). Responses for seven adjectives were found to be significantly different: brave, shares, eats the most, eats the least, ugly, fast, and least best friend. Like the four-year-olds, significantly more subjects assigned brave to the endomorph than to the mesomorph. Significantly more subjects assigned the trait shares to the mesomorph and significantly less assigned it to the endomorph. The subjects were more often correct than in error when concerned with the relationships between eating and body build. The endomorph was chosen more often as the ugly somatotype and the mesomorph was assigned it least of all. The fives were very nearly in agreement when choosing which would you not like for your best friend?; twenty-two of the thirty subjects assigned it to the endomorph, three to the mesomorph, and five to the ectomorph. Significantly more subjects believed that the ectomorph was fast, while significantly less attributed fast to the endomorph.

Considering these findings it was necessary to reject Hypothesis 7, that a larger number of more favorable adjectives (of those significant adjectives) were used to describe the mesomorph. Hypothesis 8, that a larger number of more favorable adjectives (of those found to be significant) were used to describe the endomorph, was likewise rejected due to

Table 4

Frequency of Assignment of Each Adjective to Each Somatotype by Five-Year-Olds
N=30

Adjective	Somatotype			χ^2
	Endo	Meso	Ecto	
1. Brave	15	2	13	9.8*
2. Loud	10	15	5	5.0
3. Large	10	12	8	.8
4. Remembers	9	8	13	1.4
5. Does not tease	5	13	12	3.8
6. Forgets	10	10	10	0.0
7. Dirty	13	7	10	1.8
8. Sick	10	8	12	.8
9. Afraid	8	14	8	2.6
10. Selfish	16	8	6	5.6
11. Slow	8	9	13	1.4
12. Quiet	9	9	12	.6
13. Small	10	7	13	1.8
14. Shares	5	17	8	7.8*
15. Sad	12	8	10	.8
16. Healthy	7	12	11	1.4
17. Best Friend	11	6	7	2.6
18. Eats the most	17	6	7	7.4*
19. Eats the least	5	9	16	6.2*
20. Runs the slowest	7	15	8	3.8
21. Happy	9	7	14	2.6
22. Teases	9	13	8	1.4
23. Clean	12	9	9	.6
24. Ugly	15	4	11	6.2*
25. Pretty	7	11	12	1.4
26. Least best friend	22	3	5	21.8*
27. Fights	24	8	8	2.4
28. Fast	5	8	17	7.8*
29. Does not fight	9	9	12	.6
30. Runs fastest	6	12	12	2.4

Note: Endo=Endomorph; Meso=Mesomorph; Ecto=Ectomorph

* $p < .05$

the low number of significant adjectives. Although the negative adjectives found to be significant were all assigned to the endomorph figure, they numbered only three. It was felt that three adjectives were not enough to constitute an acceptance of the hypothesis. The hypothesized aversion to the ectomorph was not found; therefore Hypothesis 9 was rejected. Data were not analyzed as a composite since no significance was found in the separate age groups.

It appeared that body build stereotypes were not found to exist among three-, four-, and five-year-old children. There appeared to be some evidence that five-year-old children have slight stereotypes but not of the intensity found by Lerner and Korn (1972) and by Staffieri (1967).

Hypothesis 13 was concerned with the ability of the three-, four-, and five-year-olds to correctly identify their own body types. A comparison of the subjects' self description with the observer's description (see Table 5) showed that among all subjects 40.6 percent correctly identified their own body types. Fifty-nine percent incorrectly identified their own body types. Thirty-nine percent of the three-year-olds correctly identified their own body types while 60.7 percent did not. Among four-year-old subjects, 32.1 percent were correct; 67.9 percent were incorrect. The five-year-olds did somewhat better with 50 percent identifying correctly and 50 percent identifying incorrectly.

Table 5

Frequency and Percentage of Correctness of Subjects' Self Identification of Body Build

Group	Correctly		Incorrectly		χ^2
	number	%	number	%	
3-year-olds N=28	11	39.3	17	60.7	1.27
4-year-olds N=28	9	32.1	19	67.9	3.57
5-year-olds N=30	15	50	15	50	0
3-, 4-, and 5-year-olds N=86	35	40.6	51	59.3	2.76

A one-way chi square analysis on the correct and incorrect self-identification task showed that in none of the age groups was there any significant difference in the number of correct self-identifications. Hypothesis 13 was rejected due to the low number of correct self-identifications.

A breakdown of the correct and incorrect self-identifications (see Table 6) for three-year-olds showed that eight of the twenty-five mesomorphs correctly identified their body builds. One ectomorph correctly identified his body build while two did not. Nine mesomorphs identified themselves as ectomorphs, while one ectomorph identified himself as an endomorph and one ectomorph identified himself as a mesomorph. These children did not appear to have the preference to look like the mesomorph that was documented in the literature.

Twenty-seven four-year-olds were judged to be mesomorphic. Eight of those correctly identified themselves while fourteen identified themselves as ectomorphs and five identified themselves as endomorphs. One ectomorph correctly identified himself.

The sample of five-year-old children consisted of twenty-eight mesomorphs, one endomorph, and one ectomorph. Fourteen of the mesomorphs correctly identified themselves; eleven identified themselves as ectomorphs, and three identified themselves as endomorphs. The child with the ectomorphic body build correctly identified himself while the endomorph identified himself as a mesomorph.

Table 6

Correct and Incorrect Self-Identification by Body Type

Body type	Number
Three-Year-Olds N=28	
Correct	
Mesomorph	8
Ectomorph	1
	9
Incorrect	
Mesomorph (8 Endomorph, 9 Ectomorph)	17
Ectomorph (1 Endomorph, 1 Ectomorph)	2
	19
Four-Year-Olds N=28	
Correct	
Mesomorph	8
Ectomorph	1
	9
Incorrect	
Mesomorph (14 Ectomorph, 5 Endomorph)	19
Five-Year-Olds N=30	
Correct	
Mesomorph	14
Ectomorph	1
	15
Incorrect	
Mesomorph (11 Ectomorph, 3 Endomorph)	14
Endomorph (1 Mesomorph)	1
	15

Note: Incorrect perceived body build in parentheses.

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Although none of the hypotheses can be accepted it is possible to observe that the five-year-old children appeared to have more of the stereotypes than do either three- or four-year-old children. The intensity of the stereotypes was not found to be as strong as that documented for six- to ten-year-old children but was more visible than were any stereotypes among three- and four-year-old subjects.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

It has long been held that body build stereotypes do exist. Sheldon (1940) in his research suggested that the relationship between body build and temperament was biological, that an individual possessing a certain body type would also possess a certain temperament. More recently researchers (Brodsky, 1954; Lerner, 1969a; Lerner, 1969b; Lerner & Gellert, 1969; Lerner & Korn, 1972; Staffieri, 1967; Staffieri, 1972; Walker, 1962) have concluded that body build stereotypes are a result of culturation; children learn body build stereotypes as a part of their social development. Few studies have been concerned with subjects younger than age ten. Of those that have (Lerner & Korn, 1972; Staffieri, 1972; Walker, 1962) the body build stereotypes of preschool-aged children have appeared to be consistent with the stereotypes of the older subjects.

This study was designed in order to determine at what age children begin to exhibit body build stereotypes. Ninety subjects were tested: thirty three-year-olds, thirty four-year-olds, and thirty five-year-olds. Each child was asked to assign adjectives (from a list developed expressly for use with preschoolers) to simulus drawings of Sheldon's (1940) three body types: endomorph, mesomorph, and ectomorph.

The line drawings used were standardized by Lerner (1969a). Each child was asked to identify his (or her) own body build. The adjective checklist data was analyzed by a chi-square analysis. The self description data was analyzed by finding the percentage who correctly identified their own body builds as perceived by the researcher and the child's classroom teacher.

Conclusions

Hypotheses 1, 2, 3, which stated in essence that the adjectives assigned by the three-year-olds to the mesomorph would be favorable while those assigned to the ectomorph and endomorph would be less favorable, were rejected, due to lack of significant findings. Hypotheses 4, 5, 6, which predicted that four-year-old children would choose the mesomorph as favorable and the ectomorph and endomorph as unfavorable, were rejected as well. For five-year-olds the hypotheses (7) that the mesomorph would receive the most favorable adjectives was rejected as was the hypothesis (8) that the endomorph would receive a larger number of unfavorable adjectives. Hypothesis 9 was rejected, as the predicted aversion to the ectomorphic figure was not found. Due to lack of significant findings for three- and four-year-olds hypotheses 10, 11, 12 were not tested. Only 40.6 percent of all children correctly identified their own body types; therefore hypothesis 13 was rejected.

The results of this study leads one to believe that body build stereotypes are not present in three- and four-year-old children as evaluated by this particular method. While rejecting the hypotheses concerning stereotypes for five-year-old children, some evidence was shown to suggest that aversion to the endomorph was emerging in the five-year-old child.

Recommendations for Further Study

A point to be considered in interpreting these results and conclusions is the group experience of those subjects tested. If Lerner and Korn's (1972) hypothesis, that social learning is responsible for the transmittance of body build stereotypes, is held, then the stereotypes should be stronger in children with more group experience, as a result of either group day care or "street" experience. (It should be noted here that although some of the subjects were in full day care, most were not.) It would be interesting and perhaps enlightening to compare the responses of five-year-olds in half-day preschool programs with five-year-olds in kindergartens within an elementary school setting where the influences on the five-year-olds would be more of a "school-age" nature.

It would be interesting as well to see if the subjects responded differently to stimulus drawing variation. An instrument with female figure instead of male figures could

be used as could more distinctly different drawings. Perhaps the hypothesized but not realized aversion to the ectomorph was a result of indistinct differences between the mesomorphic drawing and the ectomorphic drawing (see Appendix B). Another variation could be the use of children's figures rather than adult figures.

Another instrument adaptation could be the use of an open-ended schedule as opposed to the forced choice one used in the reported research.

The data collected for the present study indicated that by age five body build stereotypes are developing. Further study could be directed toward identifying the influencing forces responsible for the emergence of these stereotypes.

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