75-23,151

SNODGRASS, Jeanne Ellen, 1930-
COMPARISONS AND RELATIONSHIPS OF SELECTED MEASURES OF SELF-CONCEPT IN PRIMARY AGE CHILDREN.

The University of North Carolina at Greensboro, Ed.D., 1975
Education, general

Xerox University Microfilms, Ann Arbor, Michigan 48106

COMPARISONS AND RELATIONSHIPS OF SELECTED MEASURES OF SELF-CONCEPT IN PRIMARY AGE CHILDREN

by

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A Dissertation Submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

Greensboro
1975

Approved by

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APPROVAL PAGE

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SNODGRASS, JEANNE ELLEN. Comparisons and Relationships of Selected Measures of Self-Concept in Primary Age Children. (1975)
Directed by: Dr. Rosemary McGee. Pp. 143

The purpose of this investigation was to study comparisons and relationships among measures of body image, movement satisfaction, and physical self-concept of first and second grade children. An informal aspect of this study was a description of children in the testing situation.

The design involved utilization of a self-concept measure which was an adaptation of the Piers-Harris Self-Concept Scale developed by the UCLA Perceptual Motor Learning Laboratory, a movement satisfaction measure developed by Tanner, a body image measure developed by McFee and adapted for use with primary age children by Tanner, and a narrative description of children in the testing situation. A single administration of each test in small group situations was conducted in the Spring of 1974 at two schools in Fairfax County, Virginia, with 333 first and second grade children.

Data were scored by the investigator according to procedures established in the design of each of the three test measures. Computer analyses provided basic statistical data for all variables. Differences were analyzed through t ratios. A two-way analysis of variance was used to study the sex and grade differences found in the seven variables: self-concept, movement satisfaction, and the body image measures of height, extended height, shoulder width, extended shoulder width, and hip width. Pearson product moment correlation coefficients were obtained for all variables. Subjective

observation data were collected and analyzed according to occurrences representing various selected categories. Subgroups analyzed included grade one boys, grade two boys, grade one girls, grade two girls, all boys, all girls, all grade one, all grade two, and total sample from the two schools.

First grade children appeared to be generally more positive in self-concept and in movement satisfaction, but children in second grade seemed more accurate in estimation of body image dimensions with the exception of extended shoulder width. Differences were found between grades one and two in movement satisfaction, in height, and in shoulder width. In the overall view of the findings, however, very little difference existed between grade levels. Little difference existed between boys and girls in any of the seven variables.

Self-concept was significantly related to movement satisfaction in 12 of the possible 18 subgroups analyzed. The high percentage of significant results reflected in this finding would indicate a definite relationship between these self-concept and movement satisfaction measures. Significant relationships were also found between self-concept and height for 1 subgroup; between self-concept and extended height in 5 of the subgroups; between self-concept and shoulder width for 5 of the 18 subgroups analyzed; between self-concept and extended shoulder width for 1 subgroup; and between self-concept and hip width for 6 of the 9 subgroups in School One. Few significant relationships were found between movement satisfaction and the five body image dimensions.

The observational study of children in the testing situation provided subjective information related to the testing measures and procedures used. The self-concept and movement satisfaction measures proved to be satisfactory for use with primary age children. The body image measure, however, was not designed appropriately for this age child and the data were believed to be of little value to measure this variable.

DEDICATION

TO MY MOTHER AND LATE FATHER

With deep affection and gratitude for their love, understanding, and direction.

TO LYNN AND JIM GEORGE

Without whose help and support this endeavor would never have been possible.

ACKNOWLEDGMENTS

The investigator wishes to express her gratitude to Dr. Rosemary McCee for her continued assistance and encouragement throughout the period of doctoral study.

To other members of the committee, Drs. Kate Barrett, Garrett Lange, Elizabeth Ulmstead, and Richard Weller, appreciation is extended for their careful direction and reading of the manuscript. The investigator also wishes to note appreciation for the assistance of the late Dr. June P. Galloway.

The investigator is particularly grateful to friends and colleagues for their continued support throughout the period of study. Special appreciation is extended to Drs. Loretta Stallings, Don Paup, and Sal Paratore for their able and willing assistance.

To Roby Schmidt gratitude is extended for her careful and conscientious preparation of the manuscript.

The investigator wishes to express her appreciation to Bonnie MacCallum, Marie Sterne, Marjorie Knutson, Dwight Smith, and Stuart Chaplain, of the Fairfax County Schools, for permission to test children in their schools, and assistance in carrying out the testing program. To the teachers of the first and second grade children at the two schools gratitude is also expressed. Special appreciation is also extended to the children who so willingly participated in the testing program, and to Lynn George, Roby Schmidt, and William Commins who assisted with the testing.

Appreciation is extended to the School of Health, Physical Education and Recreation of the University of North Carolina at Greensboro for some financial support for initial computer analysis and to the School of Education, Department of Human Kinetics and Leisure Studies, George Washington University for financial support for final computer analyses of data.

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CHAPTER I

INTRODUCTION

The realization of one's potential in the process of becoming a fully developed person has been a dynamically accepted goal of education. In recent years the importance of the relationships of the individual's perception of himself to the achievement of such a goal has become more evident.

> The self concept, they tell us, is one of the most important factors affecting the way in which an individual will behave. If this is true, then any educational program which hopes to make a difference in its charges must be concerned with the nature of the self and its development (Combs, 1962, p. 93).

Psychologists and educators have become increasingly concerned with the individual's concept of self. Many have attempted to theorize about the important aspects of the self and to identify the critical elements. Basic investigations, such as those of Coopersmith (1967), Fisher (1958), Fitts (1964), Sears (1963), and Wylie (1961) have related to the establishment of a definition of the self-concept, an understanding of how the self-concept can be changed, and critical analyses of measurement tools and techniques used in the evaluation of the self-concept.

Self-concept is a very broad term encompassing many facets of the individual's awareness of his total being. The importance of the self-concept to the individual appears to be an established fact yet the concept boundaries continue to be quite elusive (Bourrisseau in Yamamoto, 1972, p. 81).

Jersild (1952) identified many different facets of self-concept and classified them as perceptual, conceptual, or attitudinal components. Body size, appearance, or other elements of body image composed the perceptual element. Factors related to background and origin, future existence, or abilities and characteristics were considered conceptual. Attitudinal components were feelings about one's worth or value, aspirations, commitments, or personal beliefs and ideals.

Many studies have evolved in an effort to view the relationships of these various components. To the observer of the normal growth and development processes, a close relationship between one's physical capabilities, one's image of the physical self, and one's concept of the total self appears to be self-evident. Much in the general literature related to child development seems to support such a theory. Yet research efforts in recent years appear to suggest quite conflicting findings.

Doudlah (1963) studied the self-concept, body image, and movement concept of college women. The discrepancy between the ratings assigned by the individual to the self as it was viewed and the self the individual viewed as ideal was considered to be the evaluation of the self-concept. Significant correlations were found between the self-concept and the self-image and between the self-image and the movement concept. Differences existed between subjects of varied motor ability; those with average motor ability were more congruent in their self-ratings.

In an investigation of some of the relationships existing between self-concept and body concept, Zion (1965) found significance at the .01 level between self-description/body description, ideal self/ideal body, and self-description-ideal discrepancy/body description-ideal discrepancy. She concluded that ". . . the security one has in one's body is related to the security with which one faces one's self and the world (p. 494)."

Rohaly's (1972) study of movement participation, movement satisfaction, self-actualization, and trait anxiety in college freshman women showed nonstrong relationships. However, some significant differences were evidenced in self-actualization between movement satisfaction and trait anxiety groups. Vail (1970) also used college freshman women in examining some relationships of self-concept, body image, and novel skill learning and retention. She found no significant relationship between self-concept and body image accuracy and little relationship between the other elements.

High relationships between body image and motor development were found for six and seven year-old subjects in Elbaum's (1965) study. Few research efforts have involved younger children. Increased importance has been ascribed, however, to the young child's self-concept development as an element which is closely related to the goal of personal adjustment and self-acceptance.

Other studies have investigated the relationship of self-concept as a personality variable to human performance tasks or to intellectual achievement. Most of the completed research has

utilized original measurement tools. Little replication has occurred. It is difficult to be sure whether it has been inadequate tools or other factors which have muddled the findings. It has been suggested (Harris, 1973) that much more research is needed to determine what and how the many factors are related.

Examination of the many components of self-concept resulted in the identification of certain aspects particularly related to the physical attributes of the total self-concept. Body image appeared to be an element often studied and considered to be a vital facet of the physical self-concept since Jersild's (1952) basic studies. Schilder extended this view of the body image to one of the moving body.

> It is remarkable. . . that movement leads to a better orientation in relation to our own body. We do not know very much about our body unless we move it. Movement is a great uniting factor between the different parts of our body. By movement we come into a definite relation to the outside world and objects, and only in contact with this outside world are we able to correlate the diverse impressions concerning our own body. The knowledge of our own body is to a great extent dependent upon our own action (1950, p. 112).

Tanner (1969) used two elements of the body concept, body image and movement satisfaction, to look at their relationships to outcomes of different curricular approaches used in teaching first and second grade children. Thus, both the perceptual and the attitudinal components of Jersild's analysis of the self-concept were included in the Tanner study.

The third category of Jersild's analysis, the conceptual component, seemed sufficiently important for complete investigation. Cratty (1970), using the Piers-Harris Self-Concept Inventory (1964)

as a base, isolated those items which proved to be particularly related to the measurement of children's physical attributes or characteristics. He identified, from the many facets of the total self-concept, those factors which were related to the physical being. The tool which resulted was considered to be a valid measure of the physical self-concept (Cratty, 1970).

An investigation of perceptual, conceptual, and attitudinal components of the self-concept was the intent of this study. Representation of these components was illustrated through body image, physical self-concept, and movement satisfaction of children.

STATEMENT OF THE PROBLEM

The purpose of this study was to examine the comparisons and relationships among body image, movement satisfaction, and the physical aspects of the total self-concept of first and second grade children. The following questions provided the framework for the investigation:

1. Were there significant differences between boys and girls in body image, movement satisfaction, and physical self-concept?

2. Were there significant differences between grade levels in body image, movement satisfaction, and physical self-concept?

3. Was the child's satisfaction in movement related to his physical self-concept?

4. Was the child's satisfaction in movement related to his body image?

5. Was the child's body image related to his physical self-concept?

The study was intended to be an extension of a previous study by Patricia Tanner titled The Relationships Of Selected Measures Of

Image and Movement Concept To Two Types Of Programs Of Physical Education In The Primary Grades (1969).

The present study followed that of the previous one in repetition of the tests of body image and movement concept. In addition to the two dimensions mentioned above, a measure of the overall physical self-concept was included. The present study also was directed toward the relationships of the three aspects of the total self-concept with little regard for the types of physical education programs experienced by the children.

A second aspect focused on an observation of the behavior of the children during the time they were taking three tests. It was believed that the tests, the testing situation, or the normal characteristics of children of six or seven years of age were perhaps variables which could affect the statistical results of the three tests and as such were important factors in this study.

DEFINITION OF TERMS

Body image - the mental picture an individual has of his own body (Schilder, 1950).

Movement concept - ". . . the individual's conative, cognitive and affective attitudes toward movement, and his movement ability (Tanner, 1969, p. 8)."

Physical self-concept - the dimensions of the total self-concept related to physical ability and attributes (Cratty, 1970).

Self-concept - ". . . those perceptions, beliefs, feelings, attitudes, and values which an individual views as part or characteristic of himself (Perkins, 1958, p. 204)."

ASSUMPTIONS

The assumption that body image and movement satisfaction were construct elements of the total self-concept of children was accepted by the investigator. The study was also based on the assumption that the measurement tools used were acceptable tests of body image, movement satisfaction, and physical self-concept for primary aged children.

SCOPE OF THE STUDY

The study was limited to children in first and second grades at Graham Road and Hunters Woods Elementary Schools in Fairfax County, Virginia. Children at Graham Road school were tested in a pilot study. No changes were made for testing of the children at the Hunters Woods school. A single administration of each test of body image, movement satisfaction, and physical self-concept was carried out. Because uncontrollable intervening variables may exist, such as socioeconomic status, outside experiences, or parental influence, generalizations based on the data obtained to other sample groups were not possible. No inferences could be drawn regarding any cause or effect of these variables.

SIGNIFICANCE OF THE STUDY

If body image and movement satisfaction are established facets of the total physical self-concept, then the implications for affecting a child's positive development are apt to be great. Differences between sex or grade would also have implications for affecting change.

It was hoped that this study would add to existing knowledge related to the relationships of the elements of body image and movement satisfaction to the physical self-concept. Although early

childhood and elementary education experts appeared to accept the importance of positive self-concept development in children and the relationship of movement satisfaction as a pertinent facet to that development, sufficient research has not been completed to justify this relationship. Few related studies involving younger children have been completed.

CHAPTER II

REVIEW OF LITERATURE

Purkey (1967, p. 3) has stated that "the difficulties people experience in most areas of life are closely connected with the ways in which they see themselves and the world in which they live." The acceptance of self-perception as a behavior determinant has resulted in greater attention to the construct of the self-concept.

Prior to the late 1800's consideration of the self was characterized by various religious views related to notions of the soul (Coller, 1971). In 1890 William James identified the ego as an individual's sense of identity. This theory initiated concern for the individual's sense of being and has continued to contribute to self-concept theory even into contemporary time (Coller, 1971).

In recent years there has been increasing interest and concern in the individual as affective aspects of behavior have been recognized as important to growth and learning. Phenomenologically oriented psychologists, such as Combs, Maslow, and Rogers, have contributed greatly to acceptance of theories which ascribe increased importance to the self-concept. Many psychologists and educators have attempted to theorize about the important aspects of the self and identify the critical elements (Allport, 1961; Combs, 1959; Fisher & Cleveland, 1958; Secord & Jourard, 1954; Maslow, 1954; Piers & Harris, 1964; and Wylie, 1974).

For the purposes of this study a survey of literature related to self-concept theory was made with particular reference to definition, development, and measurement of the self-concept. The elements of body image and movement satisfaction received particular focus. Special emphasis was also placed on material pertaining to the self-concept of children.

Self-Concept

The extensive use of the term self-concept today would lead one to believe that the term is one quite generally understood. However, the theoretical frameworks within which the concept has been used lend insight into the varied meanings ascribed to this psychological construct.

The multidimensional characteristics of the self-concept are readily seen in the terminology used throughout the literature. Components of the self-concept appear in the literature to be one or a combination of the following: abilities, acceptance, actualization, appearance, attitudes, appraisal, awareness, body image, confidence, esteem, feelings, fulfillment, motives, needs, origins, perceptions, personality, regard, resources, and values. Both phenomenological (conscious) and nonphenomenological (unconscious) elements are evident. Influencing factors appear to be character structure and traits, interpersonal relations and their effects, physical attributes, needs, and relations with significant people. Throughout the literature the self-concept is viewed as a link between observable behavior and the underlying processes of the individual. It is a

psychological construct of the self inferred from observable behavior. It is felt to be a directing force in all behavior.

Definitions. Definitions of the self-concept serve to provide focus on particular elements and to illustrate the breadth in scope of this human element:

Anderson (in Hamachek, 1965)

> The self is the physical and psychological concept of the individual as a unique person.

LaBenne & Greene (1969)

> The self is a hypothetical construct of the group of feelings and cognitive processes inferred by observation and manifest behavior to be the individual.

Fitts (1972)

> The self is the summary of all one is - his motives, needs, attitudes, values, and personality.

Coller (1971)

> The self is a group of psychological processes that govern behavior and adjustment.
>
> The self is an organized collection of attitudes, beliefs, and feelings a person has about himself.

Creelman (in Coller, 1954)

> The self is a multidimensional construct that covers and includes the total range of one's perceptions and evaluations of himself.

Theories. One self-theory which received attention from various theorists throughout the 1900's revolved around two internal dimensions: the "self-as-subject" and the "self-as-object" categories. The former related to the pure ego of James and Freud and the related processes of thinking, remembering, and doing. The latter was

concerned with the person's attitudes, feelings, perceptions, and evaluations of himself as an object. External dimensions affecting the self included environment, moral-ethical, family, and social elements. Interactions of these various elements produced either congruence or conflict (Fitts, 1972; Hall & Lindzey, 1957; & Wylie, 1961). The self-as-object appeared to be simply a knowledge element constructed from increased awareness of oneself. The self-as-process was constructed dynamically on a base of cognitive processes as the person one thinks is himself.

One of the primary proponents of this theory was William James. His analysis of the self included spiritual, material, and social aspects. The spiritual aspects included mental faculties and inclinations; the material aspects, material possessions; and the social, the esteem and regard a person perceives others have for him. James believed the ego was the individual's sense of identity and the self-theory based on self-preservation was a dynamic one (LaPenne & Green, 1969).

Another proponent was Alfred Adler. Adler's theory dealt with the human tendency to strive for perfection and reach the ideal self. Important elements were seen to be an active initiating approach to life combined with a constructive style of interaction with people. Important to his theory was also consideration of the individual's self-esteem (Coopersmith, 1967).

G. H. Mead saw the self as it related to others. He believed that as the individual was aware of himself and others he responded

to himself as others responded to him. Mead analyzed the self as being composed of three aspects: the home self, the school self, and the social self (LaBenne & Greene, 1969).

To Arthur Jersild the self was a person's inner world. It included his thoughts, feelings, strivings, hopes, fears, fantasies, his view of what he is, has been and might become, and his attitudes pertaining to his worth. Analysis of his concept was based on three components: the perceptual - body image; the conceptual - characteristics, abilities, resources, background and origins, and future; and attitudinal - feelings about one's self, one's worth, self-esteem, beliefs, values, and ideals. When a discrepancy existed between the real self and the ideal self, the individual became the deciding agent as to what he was able to accept and what he was impelled to change (Jersild, 1952).

Three meanings of the self appeared evident in this theory: a dynamic process, a system of awareness, and an interrelated process and awareness concept. The dynamic aspect included the processes of cognition: perceiving, interpreting, thinking, and remembering. Feelings, evaluations, and beliefs about himself were included in the awareness aspect. In the third category the effect and interpretations of all perceptions were included.

In the 1930's and 1940's the predeterministic, psychoanalytic theory closely associated with Freud was prominent. Innate drives were believed to be the key elements and one's experiences were simply derivatives of these drives. Freud viewed the ego as the center of

personality structure. The nature of the ego was instinctive and served to control the actions and choices of the individual as he decided what instinct to satisfy and how. Three successive stages in development were important to Freud's theory: the oral, the anal, and the genital. He believed that undesirable experiences during one of these stages resulted in fixation at that stage for the individual in more or less permanent personality traits. Behavior variables were thought to be related to social, internal growth, maturation, and perceptual factors. Neo-Freudian proponents included Fromm and Sullivan (Coller, 1971; LaBenne & Greene, 1969).

Sociological theories dealt with concepts of the self in relation to other selves. There was considered to be an interrelatedness of the self as both an object and a process in a dynamic manner including an awareness of self, bodily sense, self-image, self-esteem, and self-identity as well as thinking and knowing components (Coller, 1971). Ausubel was a proponent of this approach. He saw the self-concept as an abstraction of the essential and distinguishing characteristics of the individual including attitudes, values, aspirations, motives, and obligations. He termed the attitudes, values, and motives ego; personality he viewed as all the behavioral predispositions which characterized the individual at any given point in time. In Ausubel's satellization theory the child voluntarily assumed a dependent role related to another person, usually a parent. In this way he could protect his self-esteem as being accepted and valued as himself. This process was evident in the development of children at

about ages two, four, and six. In late childhood, however, a maturation crisis occurred. Desatellization was necessary at this time to enable the child to move through adolescence to maturity (Ausubel, 1970).

Two other proponents of the sociological theory were Cattell and Coopersmith. Both were interested mainly in the element of self-esteem. Coopersmith described the basic element of self-esteem as a personal regard of value and worth which one feels about himself. It was considered the good/bad dimension of the self-concept. (Coopersmith, 1967). Cattell's main interest related to a concept of the individual's awareness particularly in differences between the real and the ideal selves. He viewed the individual's selective perception as an attempt to maintain his self-esteem. Cattell's inventory scale has been one of the major instruments used in measurement of personality factors of self-esteem (LaBenne & Greene, 1969).

Erikson related the development of physical and cultural skills by the child to an increased sense of competence as he was able to become a more fully functioning member of his society (LaBenne & Greene, 1969). Kagan further expressed this idea when he delineated as part of the self-concept the degree to which the individual matched those attributes valued in our culture. Characteristics of warmth, honesty, strength, physical attractiveness, intelligence, wealth, and capacity to enjoy life were a few illustrations (Kagan, 1971).
In a study by Sears (1964), ten areas of self-concept were identified by 5th and 6th grade children. Physical ability, mental ability,

social relations with other boys and girls, attractive appearance, social relations with teachers, work habits, social virtues, happy qualities, school subjects, and home relationships and out-of-school experiences were thought to be important.

The sociological theorists seemed to place the greatest stress on those aspects of the self-concept most related to self-other dimensions. Particularly important to many of these theorists seemed to be the maintenance and enhancement of self-esteem.

Concern for overt, observable behavior was the main concern of behaviorism theorists. J. B. Watson was perhaps the originator of this approach (Biehler, 1971). Concern for the self in these theories related to personal insight and the rearrangement of previous ideas and experiences into new patterns of thought and behavior by the individual (Biehler, 1971). B. F. Skinner has continued development of the ideas of these theories.

The perceptual field theory of the phenomenologists was based on the belief that all behavior was a product of the perceptual field of the individual at any given moment. Only those feelings, cognitions, and perceptions which existed in the consciousness of the individual affected the behavior of the individual according to Combs (Combs, 1959). Two aspects of the phenomenal self were the objective (attitudes, feelings, perceptions, and evaluations) and the process (thinking, perceiving, and doing).

The self-actualizing theories related to an existential philosophy were developed on a base view of the individual in the process of

becoming. Rogers' theory was related to growth of the individual from one compelled by internal and external forces beyond his control toward becoming a fully functioning person making responsible choices. Much of his work was done in psychotherapy and dealt predominantly with the significance of the self-concept in determining behavior. Basic elements included stress on the consciousness of the individual and his perceptions of himself and his world. The characteristics of the fully functioning person were identified as follows: increasing openness to experience; living fully and vitally each moment; increasing trust in one's own experiencing; freedom to choose among alternative choices; creative; and becoming unified within one's self (Rogers, 1961).

Maslow was perhaps the main proponent of the theory of self-actualization. Maslow was a humanistic psychologist concerned with the uniqueness of the human individual. One of his primary contributions was the development of a needs hierarchy. In this theory basic needs for safety, belonging and love, physiological needs, and needs for self-esteem must be met in order for the individual to approach self-actualization, knowing and understanding, and aesthetic needs. Maslow also referred to the peak experience, that climax of self-actualization when what ought to be is. He was also one of the strongest proponents of man's desire for self-fulfillment (Maslow, 1968). The fulfillment of the individual's full potential as a person was the main concern of humanistic and existential theorists such as Maslow.

Development. The self-concept is a human attribute that must be achieved. It is not given. General agreement exists that a self-concept does not exist at birth (Fitts, 1971). Its development begins soon after birth and continues throughout life although it is thought to be fairly stable by the age of 11 or 12. The basis of development is the interaction of the individual with his environment and with other people (Combs, 1962; Jersild, 1952; Rogers, 1961).

In infancy the process of development begins through self-cognition. The child first learns a boundary of reality related to his own body. He first relates to his environment through his senses and muscular control (Gotts, 1969). The child builds an inner image of himself as he gradually realizes his separateness from his mother and his abilities to cause events to occur. The basic self-concept in its early development appears to be one primarily physical and one of self-image. Through exploration and experiencing his own body, the child begins to differentiate his own capacities and limitations.

In early childhood gradual development occurs through wider experience with people and the environment. Acceleration of development occurs with language development. As he interacts with the environment he learns his capacities to use his senses, to move, to eat, to sleep, to climb, and manipulate objects. He begins to learn who he is and what he can do. He learns to think and reason, to communicate with others, to compete and cooperate, and to feel compassion or indifference. He learns to distinguish his shape, size, weight, and height.

The early determinants of the child's sense of self appear to be rooted in kinesthetic experiences and in the differentiation process of development from the newborn's state of omnipotence to autonomy and self-control (Grossman, 1971). One aspect of the developmental process concerns the child's view of himself, of others, and in comparison with others. This is evidenced at about age two by concern for that which is me or mine. At three the concern has broadened to one of me too, we, our, and let's. And at four comparisons such as "I'm bigger than you" are heard. First development at these stages may be based on contacts with siblings and others in the home situation. In this period the "mirror image" (Hurlock, 1972) of what the child believes significant people think of him is important. This image is also one which is vulnerable to misinterpretation by the child. Although the child is able to sense what people's opinions are and what their reactions mean, he is often not able to know why people accept or reject him (Hurlock, 1972). By the time a child enters school, he has developed an "invisible price tag" (Purkey, 1967). He is "damaged goods," "a fine value," or an "unworthy person" (Purkey, 1967). A vital part of his self-concept includes his view of his physical capabilities. Those skills over which he has gained mastery, such as skipping, riding a bicycle, running, and throwing, are likely to be ones which he esteems highly (Lane, 1965).

Self-confidence is another self-concept element which begins development early and has its roots in motor success (Omwake, 1971). The child who has difficulty managing his body is likely to have a

poor self-concept. Rate of growth, body size, body build, and body capabilities all play roles in the determination of attitudes toward the self.

As the basic real self-concept is formed so is the ideal self being formed. Its component parts include the physical aspects of what one would like to look like as well as the psychological aspects related to desired capacities. In this structure boys and the very bright tend to be more active in specific construction of the ideal (Hurlock, 1972). As the child structures his aspirations and desires the significant people around him are very important. Parents, teachers, older siblings, neighbors, relatives, and theatric/sport heroes may be influencing factors. The aspiration may be for the present or for the future - for the "now" or for the "when I grow up." Different models are generally used by the young child. These models are usually very specific ones. With age, the models become less specific and more composite ones representative of several other persons. These changes come about as feelings about the selves change; as bodies change and as attitudes of significant others change so does the structure of the ideal self. The real and ideal selves become increasingly and significantly more congruent through time as a result of growth and development and experience (Perkins, 1957).

Conditions which seem to lead to the realization of high self-esteem include such things as acceptance and respect of the child and well-defined limits and values established in the child's environment (Smart & Smart, 1972). Child rearing patterns, sex role identification,

capabilities, and experiences with parents, siblings, peers, and others also seem to be important in the development of a positive self-concept. "Children who feel good about themselves and their world need to spend a minimum amount of time focusing on personal problems . . . and are free to apply their energies to learning. . ." from new experiences provided (Wills, 1970).

Once the self-concept has become fairly well established and the child knows who and what he is, this concept tends to remain more or less stable and favorable. Therefore much human behavior is concerned with maintaining or enhancing the established pattern of the self as it appears to the individual. These defense or enhancement behaviors relate to all three general aspects of the self: what he believes he is, what he believes he ought to be, and what he believes other people believe him to be (Hamachek, 1965).

Indicative of the belief that self-concept development is an ongoing process throughout life is the picture of the mature individual drawn below (T.I.P., Vol. VI, No. 4, p. 207):

> The mature individual has a sense of becoming. He has grasped the deeper significance of life as a continuous process of self-fulfillment drawing together the separate strands of his own existence and giving purpose and meaning to human life. He recognizes that <u>becoming</u> is a continuous and never-ending quest. This realization provides a sense of personal satisfaction and security making possible a sustained effort in order to achieve his goals.

Other characteristics of the mature individual include the person's awareness of himself and what his capabilities, limitations, and potentialities are. He is able to accept himself and set realistic goals for himself. He is able to accept others; he holds his own

consistent system of values, but is able to appreciate those of others. He is open, sensitive, and self-directive.

Principal components of the self-concept appear to be the internal aspects of attitudes, feelings, perceptions, evaluations, thinking, perceiving, doing, and evaluating and the external elements of physical attributes, moral-ethical concerns, personal relationships, and family and social relationships (Fitts, 1971). The self-concept is neither taught nor trained, but developed through experiences and interactions of the individual with his environment and his world.

Movement Satisfaction

Another area of concern in this study was that of body-cathexis and satisfaction. Body experience in movement appeared to be a complex matter. Much more research seems to be needed.

Theories. In general various theories related to using excess energy, to relaxation, to feeling better, and for aesthetic appreciation have been treated as possible causes for seeking movement as an enjoyable experience (Harris, 1973). Secord & Jourard have investigated in adults the degree of satisfaction an individual experienced related to his body parts and processes (1953). Their study investigated the relationship of feelings about the body to feelings about the self. There appeared to be a positive relationship between the two dimensions (females - .66; males - .58).

While body image was more often considered a perception of the body in a static condition, movement satisfaction changed the dimension to one which was dynamic. The importance of movement in childhood has

been well documented; however, the recognition of why such is considered important has not been fully studied.

Children do enjoy movement as such and it has been taken for granted that they perhaps move for the pure joy of moving. Variation in kinesthetic stimuli has been documented as being necessary for emotional satisfaction (Harris, 1973). Bourrisseau has stated that "the child's concept of ability may be as crucial to his success as his ability per se (Yamamoto, 1972)."

Allen & Nelson (1970) looked further at the moving being in terms of the expressed satisfaction in that movement. They developed a scale to measure movement satisfaction in adults. Reliability was found to be .95, but further study was advised.

Body Image

Although body image is an aspect of the self-concept, there is a body of knowledge which deals most directly with research that has been done in this area. Terminology, although related, has been used interchangeably and definitions have neither been carefully set down nor used. Most used terms appear to be body image, schema, ego, concept, or percept (Blom, 1970). Whatever the term applied there appear to be some variations in focus:

Definitions.

Blom, et al., 1970

> Body image is the "mental representation of one's body in both static and actions aspects."

Cratty, 1971

> Body image is the individual's awareness of his body parts and their capabilities, his body's shape, movement capacities, and the relationships of the body and its parts to events in the near and distant space.

Fisher, 1973

> Body image is an attitudinal framework defined through the long-term concept of the body and influencing the perception of the body. It constitutes the body's outer boundary.

Ajuriaguerra, 1965

> The body schema is a combination of cognitive and affective dimensions based on environmental interaction and emotional needs.

Freud (Blom, 1970)

> The body ego is the individual's awareness of the bodily processes and his attitudes about them and of his body size and image of that size in relation to that of others.

Schilder, 1935

> The body concept is a global picture of the way the individual pictures his own body in his mind.

Witkin, 1965

> The body concept is a global entity involving an awareness of the body parts and their interrelationship with the outside world.

Wapner & Werner, 1965

> The body percept includes motor action, affective motor responses, gestures, body concepts, symbolization, and physiological processes in an awareness of the relationships of the body, its parts, others and the environment.

Theories. To Ajuriaguerra (1965) body schema was more than perception. Cognitive aspects, following Piaget's analysis of growth

through the sensori-motor, preoperational and concrete operational stages, evolved through a child's interaction with objects in the environment. Affective aspects based on emotional needs followed Freud's developmental phases or the oral, anal, phallic, latency, and genital stages. Ajuriaguerra believed that the elements were interdependent although associated (Blom, et al., 1970).

Fisher and Cleveland (1965) believed that the body image was a screen reflecting other aspects of the self-concept such as feelings, anxieties, and values. These elements were felt to be related to personality characteristics such as achievement motivation, interest in communication, and autonomous behavior. They used boundary and penetration scores of the Rorschach responses to measure the body image.

A tridimensional body image was studied by Schilder (1935). Appearance, perception, and mental representations were considered to be pertinent aspects. The store of past impressions in these respects was believed to form the body image. The picture an individual formed in his mind of his body had its basis in these elements.

Development. Merleau-Ponty (1962) conceived of three stages of development of the body image concept. In the early years body image was conceived of as ". . . a sum of the total number of visual, tactile, kinesthetic, olfactory, and other bodily sensations." The addition of an awareness of form and pattern in awareness of the relationship between body parts characterized the second stage. The third stage was more dynamic in nature and evidenced interdependence of the body image and the environment (Blom, et al., 1970).

Witkin (1965) studied the gradual differentiation from a global concept to greater articulation as the individual became more aware of his body parts and their relationships. The body and the environment were considered in the early stages of development to be one (Blom, et al., 1970).

It has been established "that individuals assign qualities of size, shape, and attractiveness to their bodies in terms of personalized standards which may bear little relationship to actual body characteristics (Harris, 1973, p. 139)." The estimation of size and constancy in these estimations has received some study (Popper, 1958; Cohen, 1958; Dillon, 1962; and Shontz, 1963).

Four dimensions are seen in the study of body image: body consciousness, and body satisfaction (Secord & Jourard, 1955); body image boundary (Fisher & Cleveland, 1954 - 1964); and body image buffer zone (Wapner & Werner, 1962 - 1965). Throughout these major efforts the individual is seen as possessing a perception of his body which identifies him as his own unique being as well as interprets to others his identity (Stockwell & Bahs, 1972).

Measurement of Self-Concept, Movement Satisfaction and Body Image

Self-Concept. Major research in the measurement of self-concept seemed to be evaluations of particular aspects of the view of the self; discrepancies between the real self-ideal self; self reports-observer reports; stability or realism of the self-concept; or the establishment of correlations with other variables. Measures of body image, views of personal ability, feelings of acceptance, and levels of aspiration

serve as examples of much of the measurement reported in the literature. Few tests have been devised and developed specifically for young children.

Problems associated with self-concept research are reported to be many. Wylie (1961) considered major problems to be construct validity, intercorrelations, internal factor analysis, replication difficulty, and overgeneralizations. Fitts (1971) viewed difficulties in such research as the instruments themselves (i.e. the level of the tests, the vocabulary used, the instructions, and the mechanics of answering), the different conceptualizations of terminology, and the use of standard measures for an attribute that is considered to be unique to each individual.

Many researchers have questionned the statistical interpretations used. The use of means, scaling, predicting, and generalizing seemed questionable for the measurement of such unique elements. Perhaps this may in part explain why many of the tools available fail to provide any significant evidence.

The majority of the measurement tools employed the following techniques: projective tools which ascribe to something or someone else internal feelings (e.g. figure drawing, sentence completion, and stories devised from pictures); inventories which illustrate feelings about the self or differences between the self and the ideal self (e.g. Q-sorts and adjective check lists); semantic differential scales utilizing bi-polar adjective lists; sociograms which illustrate group relationships; and informal tools which involved verbal statements,

puppetry, handwriting analysis, free play roles, and muscle coordination.

Most of the projective tools have been used in clinical settings and were designed for psychiatric evaluations. The most applicable measures for educators appeared to be ones such as follow.

Coopersmith (1967) developed a 58-item self-esteem inventory using simple declarative sentences. Responses were made by checking in "like me" or "unlike me" columns. The score was a total of each column for each of four scales (self, social, home, and school) and a total score was obtained by totaling the four subscores. Significant findings included close association of self-esteem with early childhood experience, parental characteristics, and parental attitudes and treatment. Gordon's (1959) "How I See Myself Scale" consisted of a 40-item elementary form designed "to measure dimensions of self-concept (Beatty, 1969)." Each item represented a continuum with a five point scale. Scores were obtained for each item and through factor analysis twelve elements of the self-concept were identified related to grade level and socioeconomic levels. Reliability of the factors was approximately .80. No clear predictive validity was established. Piers & Harris (1969) developed a self-concept scale consisting of eighty declarative statements. Responses were made by circling "Yes" or "No." Factor analysis was used to identify six major dimensions (behavior, general and academic status, physical appearance and attributes, anxiety, popularity, and happiness and self-satisfaction). Almost half of the items indicated a positive self-concept and slightly more than half indicated a negative self-concept.

Internal consistency of the scale ranged from .78 to .93 and retest reliability ranged from .71 to .77. In 1969 Jennett worked through the UCLA Perceptual-Motor Learning Laboratory on the development of a self-concept scale based on the physical appearance/attributes and happiness/satisfaction dimensions of the Piers-Harris Self-Concept Scale. Durkin further developed the scale into a 20-item scale with a reliability factor of .82 on test-retest conditions separated by a week's time. A score of 16 or above indicated a high self-concept; 14 or below indicated a low self-concept. The mean score, based on data representing 288 children age five to twelve, was 15.1, with a standard deviation of 3.21. No significant differences were found between sexes. All 20 items were found to be valid and ones which showed significant differentiation between children with low and high self-concepts. Application was established for children five years and older.

Movement Satisfaction. The relationship between body concept and self-concept is supported by studies of adult men and women by Secord & Jourard (1953). Their body-cathexis scale utilized feelings of satisfaction or dissatisfaction related to the body parts and their functions. Split-half reliability was .81 for body cathexis and .90 for self-cathexis. The Self-Cathexis and Body-Cathexis Scales correlated at .58 for men and at .66 for women. Allen & Nelson (1970) further extended this study by devising a scale appropriate for fifteen to twenty-one year olds, reliability coefficient was $r = .84$, $p < .01$. Males and younger subjects expressed greater satisfaction than females and older subjects. Tanner (1969) revised the Allen-Nelson scale

for use with five to eight year old children. Reliability of the revised scale was found to be .875.

Discussion has been limited to those investigations deemed to be most relevant to this study. Few studies have been completed related to children and instruments appropriate for this age group have not been fully supported. Relationships do appear to exist, however, between body image and movement satisfaction as elements of the physical self-concept.

Body Image. A study by Schilder (1950) extended the view of body image to one of the moving body. He believed that better orientation and relationship to the outside world and objects in general were attained through movement and knowledge of one's own body.

Elbaum (1965) studied body perception of children using the Draw-A-Person (MDAP) and the Lincoln-Oseretsky Motor Development Scale (20 item) tests. A high relationship between movement development and body image in six and seven year olds was shown. Correlations averaging .89 were obtained. Other research, such as that of Katcher and Levin (1955), utilized representations of various sized body parts related to children's conceptions of body size of themselves, their mother, their father, and the opposite sex. For total size scores, test-retest correlations were .71. Size concepts of the self appeared to be the most reliable ($r = .84$). Subjects were 2 years 9 months to 5 years 4 months. Girls of four to six tended to be more accurate in their estimations than boys. Fisher and Cleveland (1968) stated:

> By and large, one gets the impression that although figure drawing may be a potentially valuable method for studying body-image, it has not as yet added much to our knowledge in this area. It is still used in a vague, impressionistic manner and there has been limited success in differentiating which aspects of the drawing are linked with body-image, which with drawing skill, and which are due to the manner in which the drawing is obtained (p. 35).

Fisher and Cleveland (1964) developed their own technique utilizing the Rorschach ink-blot test. Their method was based on a barrier score determined by the number of responses indicating the presence of a boundary. Interpretation of the score was made in terms of body-image assessment. Both validity and reliability were based on subjective assessment of the ink-blot responses.

Dillon (1962) developed an expanding door frame device to study perceived body size. Subjects used were adults. Reliability coefficients were: .75 for height, .40 for width, and .51 for depth. Validity coefficients between overall estimates and the actual measurements were .86 for height, .48 for width, and .42 for depth. All were significant beyond the .01 level. As subjects indicated their perceived size, the top bar and one side beam of the frame were moved to that position. Both ascending, in which the frame was moved in an upwards direction, and descending measures were taken. Ascending estimates of height, width, and depth were found to be more accurate than descending ones. Descending estimates were greater than ascending and significantly different from true measures.

Shontz (1963) adapted Dillon's technique in investigating the perception of the size of body parts - nonbody parts and ratings of the degree of satisfaction with body parts and somatic characteristics.

He used a rod with movable sleeves to gain size estimates and a body acceptance scale paralleling the Body Cathexis Scale of Secord & Jourard (1953). Correlation between 10 body parts, such as mouth, face, hand, foot, and waist and nonbody parts of different sized wooden sticks, was .40. Shontz found that women overestimated body parts and were less stable in their estimates. No sex differences were found in non-body part estimates.

Popper (1958) and later Woods (1966) and McFee (1969) investigated relationships of barrier scores, body dimension estimates and motor tasks. Popper and Woods utilized children while McFee used college age students. Popper studied children's perceptions of their own heights and that of adults familiar to them. The children significantly underestimated their own heights. Age differences were slight but sex differences did appear. Girls underestimated themselves more than boys and overestimated men in relation to women. The children underestimated vertical aspects and horizontal arm span and overestimated hip and shoulder horizontal measures. McFee developed a grid to aid in increasing the accuracy of the estimations. Perceived dimensions of height, extended height, shoulder width, hip width, and arm span were included. In this study, vertical dimensions were overestimated.

CHAPTER III

PROCEDURES

The intent of this study was to investigate the comparisons and relationships among body image, movement satisfaction, and the physical aspects of the self-concept of first and second grade children. Answers to the following questions were sought:

1. Were there significant differences between boys and girls in body image, movement satisfaction, and physical self-concept?
2. Were there significant differences between grade levels in body image, movement satisfaction, and physical self-concept?
3. Was the child's satisfaction in movement related to his physical self-concept?
4. Was the child's satisfaction in movement related to his body image?
5. Was the child's body image related to his physical self-concept?

The procedures described in this chapter were designed to enable study of the relationships of three aspects of the self-concept and of possible grade level and sex differences of children. A second aspect of the study, more informal however, was the observational study of the children during administration of the three test measures. Selection of subjects, the measurement instruments utilized, and procedures for data collection and analysis were included.

Selection of Subjects

In accordance with the procedures established by the administrative officials of the Fairfax County, Virginia, public schools, the

investigator submitted a written proposal of the study to the County supervisor of physical education. She presented the request to the officials responsible for research conducted in the County and permission was granted to carry out the project. The study was limited to children in first and second grades at two elementary schools in Fairfax County, Virginia, the Graham Road and Hunters Woods schools. The principals of both schools were contacted and planning sessions for the test administration were held with them and with the teachers who would be involved.

Children at Graham Road School were tested first. Subjects were 77 first graders and 68 second graders. However, one class of special children was eliminated from the study because of the extreme mental and physical problems which existed in the group. It was believed that a totally different testing situation would be required for these children and would therefore alter the resulting data. Children who did not complete all test measures were also eliminated as subjects. Therefore, the sample composition was 43 first graders and 51 second graders.

Children at Graham Road School represented a wide cultural background. English for many was a second language. The socioeconomic status of the school population was generally representative of a low level. Although some team teaching existed at Graham Road, all first and second grades followed a self-contained classroom pattern of organization. The children did leave their classrooms for instruction in art, music, and physical education.

At the Hunters Woods School subjects were all first and second graders. An open concept pattern of organization with a team teaching approach existed. One team group was composed of 160 subjects; the other, 145 subjects. A group of 29 subjects was excluded from the study because it was not possible to schedule them. They were not on the team pattern and followed a very individual scheduling pattern. Children who did not complete all test measures were also eliminated as subjects. The sample composition was, therefore, 111 first graders and 128 second graders.

Although Hunters Woods School was built for a capacity of 990 children, the current enrollment was 1267. The children represented a moderate cultural background and a high socioeconomic level. The school was located in a "new town" setting in Reston, Virginia. The primary age children, as was true of the entire school population, were taught in an open classroom setting. First and second grades were grouped in team teaching situations with five subdivisions in each team. Third and fourth grades were grouped as were fifth and sixth grades.

Some children missed a test due to illness or absence for other reasons on the testing day. No make-up tests were given. A few children were unable to complete a test due to emotional or other handicapping conditions. The same test administration was carried out for both school groups. An analysis of the total sample completing all three tests is presented in Table 1.

TABLE 1

COMPOSITION OF SAMPLE

N = 333

Subgroups	School One Graham Road	School Two Hunters Woods
Grade 1 Boys	23	58
Grade 1 Girls	20	53
Grade 2 Boys	23	65
Grade 2 Girls	28	63
All Boys	46	123
All Girls	48	116
All Grade 1	43	111
All Grade 2	51	128
Total School	94	239

Measures Used

Cratty Adaptation of Piers-Harris Self-Concept Scale. Until the last decade "no reliable evaluation instruments had been developed, . . . , which permitted more than a cursory estimate of how children feel about their general physical appearance and their ability to perform physical skills (Cratty, 1970, p. 6)." Piers & Harris (1964) developed a 100-item self-concept test (reliability coefficient, r = .71, validity, .78) drawn from Jersild's (1952) compilation of statements made by children concerning their likes and dislikes about themselves. In 1967, at the UCLA Perceptual Motor Learning Laboratory under the direction of Cratty, construction of a questionnaire based on selected questions from the Piers-Harris test was completed to measure children's feelings about their physical ability and appearance (test-retest reliability, r = .82). Testing was done of 288 children, ages 5 to 12, in a group classroom situation within a normal population of west central Los Angeles from upper income families. The total self-concept score, with a possible range of 0 to 20, was computed by totaling those responses indicating positive feelings. A score of 20 indicated a high self-concept; five, a low self-concept. Data were analyzed by sex and by age. The questions were analyzed and classified into the following five categories: feelings about general well-being (questions 9, 10, and 17), social competence (questions 5, 7, 11, 12, 13, 15, 16, and 19), physical ability (questions 1, 2, 3, and 14), physical appearance (questions 4, 6, and 18), and school achievement (questions 8 and 20). Item analysis

was performed to study the significance of the discrimination between children with high scores and those with low scores and to establish internal validity. Age trends and sex differences in total mean scores and in individual answers to the questions were computed. The mean score for both boys and girls was 15.1 and the standard deviation was 3.21. No significant age or sex differences were found ($t = .25$). All 20 of the questions were found to be valid. This self-concept scale appeared to be the best tool available for measuring physical aspects of the self-concept and was chosen for use for this reason as well as for administrative feasibility. Permission for use of the scale was obtained from Cratty and Thomas Publishers. A copy of this Scale may be found in Appendix A.

Movement Satisfaction Scale. Allen & Nelson looked further at the moving being in terms of the expressed satisfaction in that movement and developed a scale (1970) for measuring that movement satisfaction. An adaptation of this instrument was the only one in the area of movement concept found to be suitable for administration to primary age children. Tanner (1969) developed this adaptation of the Allen & Nelson Movement Satisfaction-Dissatisfaction Scale. The Allen-Nelson Scale was a 75-item, Likert 5-point scale, developed from an original list of 150 statements about movement. These statements were judged as to relevancy to movement satisfaction-dissatisfaction by a jury of ten recognized physical education authorities. The 75-item scale which resulted from these ratings was administered to a college population and showed a reliability coefficient of .96. Tanner revised and adapted the scale

for use with younger children (1969). A jury of five elementary physical education authorities judged 55 of the statements for relevance and appropriateness for measurement of feeling of movement satisfaction-dissatisfaction of primary age children. Fifty items were included in the final version with a simulated Likert 5-point answer scale. Reliabilities were established in a pilot study of 99 subjects in first and second grade ($r = .875$). An item analysis was conducted and reliability for each item was computed. The 20 least reliable items were eliminated. The final instrument was composed of 30 items. A copy of the instrument and answer form may be found in Appendix B. The simulated Likert scale was developed using animated Snoopy cartoon figures representing ratings of very happy, happy, undecided, sad, and very sad. Tanner's permission to use this measure was obtained as well as direction related to its administration.

McFee Body Image Grid Measure. The picture an individual forms in his mind of his body has its basis in the tridimensional body image studied by Schilder (1935). He considered dimensions of appearance, perception, and mental representations. The qualities of size and shape may, as Harris (1973) suggested, have little relationship to actual body measurements. As an aspect of body image and awareness of the body, measurement of dimensions of body space were desired. In a study by Woods (1966) using children aged 8, 10, and 12, a measure of vertical dimensions of height, extended height with arms over head, and horizontal dimensions of shoulder width, extended shoulder width with the arms to the sides at shoulder height, and hip width showed the following:

1. Standing height, extended height and extended shoulder width were underestimated by children.

2. Overestimation was evidenced in dimensions of shoulder width and hip width.

3. A trend existed with age toward increased accuracy in estimations.

4. Sources of variation were age (.01 level); and sex (.05 level for height and extended shoulder width and .01 level for hip width).

McFee (1968) studied the relationships between the body image boundary, certain movement tasks and estimation of the dimensions of body space in college age subjects. She developed a grid test for estimating vertical dimensions of height and extended height and horizontal dimensions of shoulder, extended shoulder, and hip width. An adaptation of this test for use with primary grade children was completed by McFee and used by Tanner (1969) with first and second grade children. A sample of the grid and scoring form may be found in Appendix C. The subject estimated his dimensions of height, height with arms extended over head, shoulder width, arm span at the shoulders, and hip width as he perceived them from a specified position and distance related to a grid display. Actual measurement of the same dimensions was utilized to achieve a discrepancy score for the five dimensions. No significant differences were found by Tanner related to age or sex. It appeared that height and width estimates were not related in any way to movement satisfaction. Width estimates appeared to be poorly perceived and greatly overestimated. The only correlation found significant at the .05 level of confidence was between height and width measures of grade two girls. Tanner thought it possible that this may have been a

function of change. Although this instrument appeared weak in many respects, the investigator believed it was preferable for younger children over other measures which were more symbolic in nature. It was further believed that data pertaining to the relationships of self-concept to this measure of body image would contribute greater depth in available information. Use of this measure was discussed with both Tanner and McFee and their direction, related to difficulties previously encountered, as well as permission to use the instrument was obtained.

Observation of Children During Testing. The observation of children during the test administrations was considered an informal dimension of this study. Informal discussions with previous investigators of studies with children and careful analysis of the expectations of the three chosen instruments were carried out in order that some behaviors which might be perceived by the investigator would be anticipated. Since the setting was to be unrestricted, narrative records were made at the close of each testing period of events which had occurred during that period. Analysis of the answer forms was made at the close of each day's testing. No attempt was made to code each occurrence of a behavior, but rather those events which occurred most frequently and appeared to be general ones were noted. Categories included ability to follow instructions, length of attention span, limited written and verbal skills, cognitive and perceptual levels of development, creativity, peer pressure, subjects anonymity, and the time of testing.

Collection of Data

The testing program took place in May, 1974. All measures were administered by the writer and where assistants were required, they were trained by the writer and remained constant throughout the testing. Measures of physical self-concept, body image, and movement satisfaction were administered.

Self-Concept Scale. The self-concept measure, based on the Piers-Harris Self-Concept Scale and developed under Cratty (1967) at the UCLA Perceptual-Motor Learning Laboratory, was the first item administered. The measure was administered in the individual classrooms of each first and second grade at the Graham Road School and in homeroom groupings in the team pods at the Hunters Woods School. A cassette tape of instructions and the test was prepared in order to standardize the administration of the measure. Answer forms were printed. Red and blue pencils were obtained for use on the answer forms and paper guides were prepared to help the children keep their place as they moved to each new question. In this measure the children were asked to circle "yes" or "no" on their answer form as their first reaction to questions related to how they felt about themselves. Instructions stressed the importance of answering as they really felt and deciding yes or no for each question. Each child recorded, with help if needed, his name, school, grade, and sex on the answer form before the testing began. Boys used blue pencil and girls, red, as a check on the sex identification of the answer form. The children were allowed to ask questions about the test until the investigator felt they were comfortable and knew what to do.

This was the time in which a certain rapport was also established between the children and the investigator. The tape of instructions and test was played for the group. In the time lapse between questions, the investigator occasionally reminded the children to circle yes or no and to move the paper guide down to reveal the next question. After the last item, the children were thanked. The answer forms were collected and checked for complete identification information and to see if instructions had been followed. A copy of the administrative procedures for this measure may be found in Appendix A.

Movement Satisfaction Scale. The Tanner Movement Satisfaction Scale (1969) was administered in the second testing session. The test administration was conducted in the individual classrooms of each first and second grade at Graham Road School and in homeroom groupings in the team pods at the Hunters Woods School. A cassette tape of instructions and the test was also prepared for this item as were answer forms. Red and blue pencils and paper guides were provided for use by the children on the answer forms. In this measure the children were asked to color the Snoopy figure on their answer form which best showed how they felt about doing thirty various movement experiences. The series of Snoopy drawings represented five different emotions: very happy, happy, undecided, sad, and very sad. Instructions stressed the importance of coloring only one Snoopy figure for each answer, the one which best showed how they felt about that item. Before the testing began, the Snoopy figures were explained and the children were allowed to ask questions about the test until the investigator felt they were

comfortable and knew what to do. Each child recorded, in some cases with teacher or investigator help, his name, school, grade, and sex on the answer form before the testing began. Boys used blue pencil and girls, red, as a check on the sex identification of the answer form. The taped instructions and test were played for the children. The instructions called for a Snoopy wall chart to help the children understand how to interpret the figures and apply the scale. The tape was stopped between questions occasionally to allow the children more time to respond if it seemed necessary. Both the teacher and the investigator also were alert for children who appeared to be making a pattern or following a particular column in answering rather than responding to each question. After completion of the test, the children were thanked. Answer forms were collected and checked for completeness and accuracy in following instructions. A copy of the administrative procedures for this measure may be found in Appendix B.

Body Image. In the third testing session, the McFee grid test of body image was administered. This measure required greater space and was administered in the gymnasium at Graham Road School and in the central area and pod corridors at Hunters Woods. Assistants were required, were trained by the investigator, and were constant throughout the testing. Answer forms and red/blue pencils were provided. The grids were prepared on sheets of white plastic, 5' by 10'. An example of the grids may be found in Appendix C. Parallel lines were drawn two centimeters apart through a centered line which ran the length of the grid. Random assignment of numbers to every other line was placed at the edge

of the lines. These numbers were used to identify the dimension estimates. Height and extended height dimensions were estimated from the vertical grid; shoulder width, arm span in extended shoulder width, and hip width dimensions were estimated from the horizontal grid. A sample chart of the grids was used to help the children understand how to interpret and use the grids. Four stations were established: vertical height estimation, horizontal width estimation, actual vertical height measurement, and actual horizontal width measurement. The two grids for estimation of heights and of widths were suspended from the wall at two locations. Lines approximately five feet in front of the grids were taped to the floors. Tape measures for actual measurement of heights and of widths were attached to the wall at two other locations. One tester was at each estimation and each measurement station. The children were rotated in small groups from estimation stations to actual measurement stations, e.g. from vertical estimations to actual height measurements. In this measure the children were asked to guess their height, extended height, shoulder width, arm span in extended shoulder width, and hip width. They were also actually measured for these same dimensions. The estimated measurements were determined from the large vertical and horizontal grids. Actual measurements were taken using tape measures. Instructions stressed how to use the grids and practice choosing representative numbers was allowed. Each child recorded, with help if needed, his name, school, grade, and sex on the answer form before the testing began. He carried the form with him until all measures had been recorded and it was then collected. Boys used blue pencil to

record their results and girls used red. The taped instructions were played to the children at each of the grid stations. During the time lapse between items, the investigator reminded the children to remain behind the line and in a sitting position. Answer forms were checked at the last station for completeness. A copy of the administrative procedures for this measure may be found in Appendix C.

Observation. At each testing session the children were observed and narrative reports of events which occurred at that session were written by the investigator at the close of the session. At the end of each day's testing the answer forms were reviewed and specific variations were noted. Particular attention was directed to the following categories: ability to follow instructions, length of attention span, limited written and verbal skills, cognitive and perceptual levels of development, creativity, peer pressure, subjects anonymity, and the testing setting.

Analysis of Data

The variables investigated in this study included the comparisons and relationships among body image, movement satisfaction, and physical aspects of the self-concept of first and second grade children. An observational record of children in the testing situation was also an aspect of this study. Answers to the following questions were sought:

1. Were there significant differences between grade levels in body image, movement satisfaction, and physical self-concept?

2. Were there significant differences between boys and girls in body image, movement satisfaction, and physical self-concept?

3. Was the child's satisfaction in movement related to his physical self-concept?

4. Was the child's satisfaction in movement related to his body image?

5. Was the child's body image related to his physical self-concept?

The raw data were collected and scored by the investigator according to procedures established in the test designs. The self-concept measure was scored according to the established key indicating the total number of positive responses. An illustration of scoring procedures may be found in the Appendices. A possible range of 0 to 20 existed with higher scores being more positive. The movement satisfaction measure provided a total score from the values chosen with one indicating very happy, two - happy, three - undecided, four - sad, and five - very sad. A possible range of 30 to 150 existed with lower scores being more positive. Scoring of the McFee grid measure of body image, including dimensions of height, extended height, shoulder width, extended shoulder width, and hip width, resulted in a discrepancy score of difference in accuracy between the estimations and actual measurement for each dimension. The estimated grid figures, recorded in centimeters, were translated into inches since the actual measurement figures were recorded in inches. The discrepancy scores were then calculated. Lower scores indicated less discrepancy and greater accuracy in estimation.

Master data sheets were prepared for the subjects from each school by grade and sex. All data were expressed in numerical terms and data processing cards were prepared in Fortran language for each subject. All data were processed at The George Washington University Computer Center.

A listing of all raw data was completed. A Statistical Program For The Social Sciences (SPSS) (1970) computer program package, Codebook, was designed to yield per cent responses and basic statistical analysis for each item included in the study. Subgroups analyzed for each school included all boys, all girls, grade one, grade two, first grade boys, first grade girls, second grade boys, second grade girls, and the total sample. Comparisons of the various sample groups were then made. Differences between means were analyzed and t ratios obtained. A computer program for two-way analysis of variance (GWU, 1973) was used to study sex and grade differences found in the seven variables: self-concept, movement satisfaction, and body image dimensions of height, extended height, shoulder width, extended shoulder width, and hip width. Pearson product moment correlations of the relationship of self-concept to body image and movement satisfaction and of movement satisfaction to body image were obtained, through the use of an SPSS program. The .05 level of confidence was selected as significant for this research. Reference for statistical procedures used was Guilford & Fruchter (1973).

Observation data were compiled according to particular behaviors found during administration of a particular test measure, answering questions of a particular test measure, or the testing situation in general. Behaviors noted were arranged under the categories selected for attention.

Support for data processing was provided by the School of Education, Department of Human Kinetics and Leisure Studies at The George Washington University, Washington, D. C.

CHAPTER IV

ANALYSIS AND DISCUSSION OF DATA

This investigation was designed to study the comparisons and relationships among body image, movement satisfaction, and physical self-concept of first and second grade children. Observation of children in the testing situation was also an informal aspect of this study.

Data were collected from two school groups. Some differences existed between groups; therefore, data from each school were analyzed separately. Groups from the Graham Road School were referred to as School One while groups from Hunters Woods School were called School Two.

Comparisons of differences between means, utilizing t ratios, for school, sex, and grade subgroups as well as the total samples and two-way analyses of variance for sex and grade were determined for the seven variables. Presentation of these results can be found in Tables 2 through 16. Pearson product moment correlations of the relationships among the body image, movement satisfaction, and physical self-concept measures were obtained and are summarized in Tables 17 through 36. The .05 level of confidence was selected as significant for this research.

Comparisons

Self-Concept. The self-concept scores, which depict the child's degree of positive feelings toward his physical self, are shown in Tables 2 and 3. Most positive self-concept is represented by a score of 20.

Mean scores for children from School One ranged from a low of 13.929 for second grade girls to a high of 15.087 for first grade boys. The mean for the total School One sample was 14.5. The range of mean scores for children from School Two was 14.631 for second grade boys to 15.778 for second grade girls. The total School Two sample mean score was 15.268.

Differences existed in this study between the grade two girls in Schools One and Two ($t = 2.7$). Mean for School One girls was 13.929 while for School Two girls the mean was 15.778 showing more positiveness among the School Two girls. Significant difference was also found between the total samples from the two schools ($t = 2.1$). School One had a mean of 14.5 and School Two, 15.268 (Refer to Table 2 for the above findings).

No significant differences were found between boys and girls or between grades one and two in self-concept for the School One sample (Table 3). However, a difference between boys and girls ($F = 5.711$) was found in the School Two group. The boys had a mean of 14.921 and the girls, a mean of 15.741 (Table 2) showing a significantly more positive self-concept for these girls.

TABLE 2

SELF-CONCEPT MEAN DIFFERENCES
BETWEEN SCHOOLS

Subgroups		Mean	Range	S.D.	t
Grade 1 Boys	School 1 (N= 23)	15.087	5 - 20	2.275	.087
	School 2 (N= 58)	15.034	11 - 19	2.828	
Grade 1 Girls	School 1 (N= 20)	14.800	8 - 18	3.122	1.150
	School 2 (N= 53)	15.698	7 - 20	2.919	
Grade 2 Boys	School 1 (N= 23)	14.348	8 - 19	3.084	.373
	School 2 (N= 65)	14.631	4 - 19	3.085	
Grade 2 Girls	School 1 (N= 28)	13.929	7 - 19	3.276	2.700**
	School 2 (N= 63)	15.778	6 - 20	2.820	
All Boys	School 1 (N= 46)	14.717	8 - 19	2.705	.206
	School 2 (N= 123)	14.821	4 - 20	2.962	
All Girls	School 1 (N= 48)	14.292	7 - 19	3.209	.870
	School 2 (N= 116)	15.741	6 - 20	2.853	
Grade 1	School 1 (N= 43)	14.953	8 - 19	2.672	1.231
	School 2 (N= 111)	15.351	5 - 20	2.878	
Grade 2	School 1 (N= 51)	14.118	7 - 19	3.166	.475
	School 2 (N= 128)	15.195	4 - 20	3.001	
Total Sample	School 1 (N= 94)	14.500	7 - 19	2.965	2.122*
	School 2 (N= 239)	15.268	4 - 20	2.940	

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

TABLE 3

ANOVA FOR GRADE & SEX IN SELF-CONCEPT
FOR SCHOOL ONE

Source	Sum of Squares	df	Mean Squares	F	Probability
Grade	15.021	1	15.021	1.694	0.1964
Sex	2.884	1	2.884	0.325	0.5699
Grade & Sex	0.113	1	0.113	0.013	0.9105
Within Cells	798.100	90	8.868		
Total	816.125	93			

FOR SCHOOL TWO

Grade	1.551	1	1.551	0.182	0.6699
Sex	48.635	1	48.635	5.711*	0.0177
Grade & Sex	3.523	1	3.523	0.414	0.5208
Within Cells	2001.128	235	8.515		
Total	2054.840	238			

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

Cratty, in his 1967 use of this measure with children, found no significant age or sex differences. In his study (N = 258, age 5 to 12), mean score was 15.1 for both boys and girls.

The basis of self-concept development has been stated to be the interaction of an individual with his environment and with other people (Combs, 1962; Jersild, 1952; Rogers, 1961). If self-concept is at least somewhat a function of age, and educators do, in fact, accept the premise often set forth that positive self-concept development is an important goal, then it would seem that more positive self-concept would be found with increasing school experience. The differences found in the present study were not significant in degree. Further study is needed to determine whether such a trend exists and if it does, why.

Movement Satisfaction. Tables 4 and 5 show the mean scores for the various sample subgroups on the movement satisfaction scale. A range of 30 to 150 existed with lower scores indicating more positiveness.

Mean scores for children at School One ranged from a low of 66.4 for first grade girls to a high of 80.435 for second grade boys. Mean score for the total sample of School One was 73.309. The range of mean scores for children from School Two was from 71.585 for first grade girls to 72.397 for first grade boys. The total sample mean score for School Two was 72.130.

Significant difference existed between grade two boys in Schools One and Two (t - 2.01). Mean for the School One boys was 80.435 while the School Two boys had a mean of 72.262 showing more positive feelings in movement satisfaction for the School Two boys subgroup.

TABLE 4

MOVEMENT SATISFACTION MEAN DIFFERENCES
BETWEEN SCHOOLS

Subgroups		Mean	Range	S.D.	t
Grade 1 Boys	School 1 (N= 23)	67.043	51 - 94	11.142	1.68
	School 2 (N= 58)	72.397	36 -105	13.285	
Grade 1 Girls	School 1 (N= 20)	66.400	46 - 93	12.382	.014
	School 2 (N= 53)	71.585	46 -101	12.870	
Grade 2 Boys	School 1 (N= 23)	80.435	43 -124	19.097	2.01*
	School 2 (N= 65)	72.262	34 -145	15.527	
Grade 2 Girls	School 1 (N= 28)	77.857	59 - 98	11.085	.289
	School 2 (N= 63)	72.206	44 -102	11.861	
All Boys	School 1 (N= 46)	73.739	43 -124	16.877	.536
	School 2 (N= 123)	72.325	34 -145	14.455	
All Girls	School 1 (N= 48)	73.083	46 - 98	12.851	.535
	School 2 (N= 116)	71.922	44 -102	12.282	
Grade 1	School 1 (N= 43)	66.535	46 - 94	11.801	2.552**
	School 2 (N= 111)	72.009	36 -105	13.035	
Grade 2	School 1 (N= 51)	79.020	43 -124	15.116	2.755**
	School 2 (N= 128)	72.234	34 -145	13.791	
Total Sample	School 1 (N= 94)	73.309	43 -124	14.995	.747
	School 2 (N= 239)	72.130	34 -145	13.418	

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

TABLE 5

ANOVA FOR GRADE & SEX IN MOVEMENT SATISFACTION
FOR SCHOOL ONE

Source	Sum of Squares	df	Mean Squares	F	Probability
Grade	3575.897	1	3575.897	18.948*	0.0000
Sex	60.176	1	60.176	.319	0.5737
Grade & Sex	21.446	1	21.446	.114	0.7368
Within Cells	16984.828	90	188.720		
Total	20642.500	93			

FOR SCHOOL TWO

Grade	4.407	1	4.407	.024	0.8766
Sex	12.061	1	12.061	.066	0.7922
Grade & Sex	7.190	1	7.190	.039	0.8427
Within Cells	42825.410	235	182.236		
Total	42850.000	238			

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

Of higher significance was the difference found between the grades one ($t = 2.552$) and between the grades two ($t = 2.755$) from the two schools. Grade one from School One had a mean of 66.535 showing more positiveness than grade one of School Two with a mean of 72.009. In grade two the difference was found to be opposite between schools with a mean of 79.020 for School One and 72.234 for School Two, showing the greater positiveness for the latter. (Refer to Table 4 for the above findings).

A significant difference in movement satisfaction was found between grades ($F = 18.948$) in School One (Table 5). The first graders had a significantly more positive movement satisfaction score than the second graders having means of 66.533 and 79.020 respectively. No difference existed in School Two. No difference was found between boys and girls at either school.

In Tanner's study (1969) lowest scores were found for first grade boys (Mean 75.6) and second grade girls (Mean 74.33). The difference found between grades in the present study was one of lower scores, indicating greater satisfaction in movement, for first graders in three of the four subgroups. As with the self-concept measure, this fact appeared to be cause for concern and justification for further study as to cause.

Body Image. The body image variable was composed of five dimensions: two vertical measures (height and extended height) and three horizontal measures (shoulder width, extended shoulder width, and hip width). Each measure indicated the subject's accuracy in estimation in the five dimensions and the score was derived from the discrepancy

between scores of estimation and actual measurement. The final score was expressed in inches. Findings are presented in Tables 6 through 15.

In the height measure (See Table 6), mean scores for children from School One ranged from a low of 7.45 for first grade girls to 18.522 for first grade boys. Mean score for the total sample for School One was 12.415. The range of mean scores for children from School Two was from 6.937 for second grade girls to 15.190 for first grade boys. Mean score for the total sample for School Two was 11.686. Standard deviations appeared to be large in this and other dimensions of the body image measure. This may in part be explained by the nature of the measure itself when used with younger children. Discussion of related observations is presented later in this chapter. The large range in scores was believed to be a factor also.

A difference between grade two girls from the two schools was found ($t = 2.105$) in the height dimension. Greater accuracy was seen in the girls from School Two (Mean 6.937) compared to those from School One (Mean 11.750).

No significant differences between sex or grade were found in the height factor in the School One sample and this was the pattern throughout the five body image dimensions. Significant difference was found in the body image dimension of height between grades at School Two ($F = 6.925$) (Table 7). Second graders showed significantly greater accuracy than the first graders with means of 9.336 and 14.396 respectively. No sex differences existed in this measure in the School Two group.

TABLE 6

BODY IMAGE-HEIGHT MEAN DIFFERENCES
BETWEEN SCHOOLS

Subgroups		Mean	Range	S.D.	t
Grade 1 Boys	School 1 (N= 23)	18.522	0 - 80	19.630	.697
	School 2 (N= 58)	15.190	0 - 75	18.906	
Grade 1 Girls	School 1 (N= 20)	7.450	0 - 31	8.900	1.545
	School 2 (N= 53)	13.528	1 - 76	16.450	
Grade 2 Boys	School 1 (N= 23)	10.826	0 - 75	17.961	.218
	School 2 (N= 65)	11.662	0 - 59	14.729	
Grade 2 Girls	School 1 (N= 28)	11.750	1 - 67	14.188	2.105*
	School 2 (N= 63)	6.937	1 - 36	7.251	
All Boys	School 1 (N= 46)	14.674	0 - 80	19.006	.443
	School 2 (N= 123)	13.325	0 - 75	16.850	
All Girls	School 1 (N= 48)	9.958	0 - 67	12.339	.005
	School 2 (N= 116)	9.948	1 - 76	12.711	
Grade 1	School 1 (N= 43)	13.698	0 - 80	16.347	.231
	School 2 (N= 111)	14.396	0 - 76	17.715	
Grade 2	School 1 (N= 51)	11.333	0 - 75	15.839	.883
	School 2 (N= 128)	9.336	0 - 59	11.858	
Total Sample	School 1 (N= 94)	12.415	0 - 80	16.030	.308
	School 2 (N= 239)	11.686	0 - 76	15.049	

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

TABLE 7

ANOVA FOR GRADE & SEX IN BODY IMAGE-HEIGHT
FOR SCHOOL ONE

Source	Sum of Squares	df	Mean Squares	F	Probability
Grade	66.776	1	66.776	0.267	.6067
Sex	596.381	1	596.381	2.384	.1261
Grade & Sex	833.357	1	833.357	3.331	.0713
Within Cells	22515.230	90	250.169		
Total	24011.734	93			

FOR SCHOOL TWO

Grade	1520.243	1	1520.243	6.925*	.0091
Sex	605.447	1	605.447	2.758	.0981
Grade & Sex	139.337	1	139.337	0.635	.4264
Within Cells	51588.402	235	219.525		
Total	53853.422	238			

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

Tanner (1969) found no significant grade or sex differences. Popper (1958), however, found slight age differences and differences in sex with girls underestimating themselves more than boys. There was perhaps a cultural implication here related to more concern for male height. Woods (1966) also found increased accuracy with age. Katcher and Levin (1955) found that girls of four to six years tend to be more accurate than boys in size estimation. Comparison of the mean data in this study would seem to support this finding also except for grade two girls of School One whose mean of 11.75 exceeded that of grade two boys from either school showing less accuracy for these girls.

In the extended height dimension of body image, (Refer to Table 8), mean scores for children from School One ranged from a low of 16.043 for second grade boys to 20.45 for first grade girls. Mean score for the total sample in School One was 18.798. A range from 10.794 for second grade girls to 17.241 for first grade boys was found for children from School Two. The total School Two sample mean score was 13.929.

School group differences were found between grade two girls ($t = 2.209$). Girls from School Two had a mean of 10.794 while those from School One had a mean of 17.607, showing greater accuracy in the former group. Difference was also found between the all girls subgroups from the two schools ($t = 2.494$). Girls from School Two again showed greater accuracy than those from School One with means of 12.552 and 18.792 respectively. The total sample subgroups also showed significant difference ($t = 2.298$). School Two had a mean of 13.929 while School One had a mean of 18.798.

TABLE 8

BODY IMAGE-EXTENDED HEIGHT MEAN DIFFERENCES BETWEEN SCHOOLS

Subgroups		Mean	Range	S.D.	t
Grade 1 Boys	School 1 (N= 23)	20.043	1 - 56	15.973	.623
	School 2 (N= 58)	17.241	0 - 95	18.783	
Grade 1 Girls	School 1 (N= 20)	20.450	3 - 53	16.478	1.415
	School 2 (N= 53)	14.642	0 - 71	14.986	
Grade 2 Boys	School 1 (N= 23)	16.043	0 - 68	18.475	.641
	School 2 (N= 65)	13.431	0 - 70	15.882	
Grade 2 Girls	School 1 (N= 28)	17.607	0 - 59	15.943	2.209*
	School 2 (N= 63)	10.794	1 - 61	12.142	
All Boys	School 1 (N= 46)	18.043	0 - 68	17.196	.934
	School 2 (N= 123)	15.228	0 - 95	17.344	
All Girls	School 1 (N= 48)	18.792	0 - 59	16.056	2.494**
	School 2 (N= 116)	12.552	0 - 71	13.592	
Grade 1	School 1 (N= 43)	21.047	1 - 56	16.061	1.725
	School 2 (N= 111)	16.000	0 - 95	17.049	
Grade 2	School 1 (N= 51)	16.902	0 - 68	16.972	1.834
	School 2 (N= 128)	12.133	0 - 70	14.172	
Total Sample	School 1 (N= 94)	18.798	0 - 68	16.603	2.298*
	School 2 (N= 239)	13.929	0 - 95	15.660	

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

In Tanner's study (1969) no grade or sex differences were found in the extended height dimension of body image. An increase in accuracy in estimation with age was found by Woods (1966). Although not significant in degree in the present study (Table 9), mean scores decreased for grades one and two in both schools. School One showed a decrease from 21.05 for grade one to 16.90 in grade two. In School Two the decrease was from 16.0 to 12.13 for grades one and two respectively.

In the body image dimension of shoulder width (Table 10) mean scores for children from School One ranged from a low of 12.0 for second grade boys to 23.4 for first grade girls. Mean score for the total School One sample was 17.574. The range of mean scores for children from School Two was from 6.222 for second grade girls to 11.672 for first grade boys. Total sample mean score for School Two was 8.745.

School differences were found between grade one girls ($t = 2.04$). Greater accuracy was shown by School Two girls with a mean of 10.566 compared to a mean of 23.4 for the girls from School One. Grade Two girls also showed significant difference between schools ($t = 3.783$). Again girls from School Two showed greater accuracy than those from School One with means of 6.222 and 18.679 respectively. The difference between girls from the two schools was also reflected in the all girls subgroup ($t = 4.166$). School Two showed a mean of 8.207 while School One had a mean of 20.646. Significant difference was also noted between schools in grade one ($t = 2.587$) with the School Two mean of 11.144 and the School One mean of 19.837. Second graders also differed between schools ($t = 3.492$). The School Two grade two showed a mean of 6.664 and the grade two from School One had a mean of 15.667.

TABLE 9

ANOVA FOR GRADE & SEX IN BODY IMAGE-EXTENDED HEIGHT
FOR SCHOOL ONE

Source	Sum of Squares	df	Mean Squares	F	Probability
Grade	271.199	1	271.199	.971	.3272
Sex	22.498	1	22.498	.081	.7773
Grade & Sex	7.726	1	7.726	.028	.8683
Within Cells	25143.531	90	279.373		
Total	25444.953	93			

FOR SCHOOL TWO

Grade	870.655	1	870.655	3.585	.0595
Sex	407.139	1	407.139	1.676	.1967
Grade & Sex	.029	1	.029	0.000	.9913
Within Cells	57071.055	235	242.856		
Total	58348.871	238			

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

TABLE 10

BODY IMAGE-SHOULDER WIDTH MEAN DIFFERENCES BETWEEN SCHOOLS

Subgroups		Mean	Range	S.D.	t
Grade 1 Boys	School 1 (N= 23)	16.739	0 - 62	16.119	1.092
	School 2 (N= 58)	11.672	0 - 97	19.506	
Grade 1 Girls	School 1 (N= 20)	23.400	1 - 99	28.320	2.0399*
	School 2 (N= 53)	10.566	0 - 78	15.936	
Grade 2 Boys	School 1 (N= 23)	12.000	1 -114	23.392	1.351
	School 2 (N= 65)	7.092	0 - 56	10.130	
Grade 2 Girls	School 1 (N= 28)	18.679	0 - 86	22.776	3.783**
	School 2 (N= 63)	6.222	0 - 42	8.141	
All Boys	School 1 (N= 46)	14.370	0 -114	19.996	1.752
	School 2 (N= 123)	9.252	0 - 97	15.390	
All Girls	School 1 (N= 48)	20.646	0 - 99	25.055	4.166**
	School 2 (N= 116)	8.207	0 - 78	12.461	
Grade 1	School 1 (N= 43)	19.837	0 - 99	22.588	2.587**
	School 2 (N= 111)	11.144	0 - 97	17.819	
Grade 2	School 1 (N= 51)	15.667	0 -114	23.060	3.492**
	School 2 (N= 128)	6.664	0 - 56	9.179	
Total Sample	School 1 (N= 94)	17.574	0 -114	22.818	4.235**
	School 2 (N= 239)	8.745	0 - 97	14.026	

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

Significant difference was also noted between the total sample groups from the two schools. Mean for School Two was 8.745 and for School One, 17.574. Throughout this shoulder width dimension of body image School Two was seen to be greater in accuracy than School One.

No grade or sex differences were found in the School One sample. Significant difference was found in the School Two group between grades (F = 6.096) in the shoulder width dimension of body image (Table 11). Differences between boys and girls were not significant in School Two. No significant grade or sex differences were found by Tanner (1969) in this dimension of body image.

In the extended shoulder width dimension of the body image measure (Table 12) mean scores for children from School One ranged from a low of 24.696 for first grade boys to 35.464 for second grade girls. Mean score for the total sample of School One children was 29.053. For children from School Two a range from 21.698 for first grade girls to 25.523 for second grade boys was found. Mean score for the total School Two sample was 23.866.

School differences were found between grade two girls (t = 4.311). The girls from School Two had a mean of 22.81 and girls from School One showed a mean of 35.464. Difference between schools was also noted in the all girls subgroup (t = 3.039). Girls from School Two showed greater accuracy in the extended shoulder width dimension than those from School One with means of 23.302 and 32.792 respectively. A difference between second graders from the two schools was found (t = 2.064).

TABLE 11

ANOVA FOR GRADE & SEX IN BODY IMAGE-SHOULDER WIDTH
FOR SCHOOL ONE

Source	Sum of Squares	df	Mean Squares	F	Probability
Grade	518.350	1	518.350	0.993	.3217
Sex	1030.530	1	1030.530	1.974	.1635
Grade & Sex	-0.017	1	-0.000	-0.000	1.0000
Within Cells	46979.328	90	521.992		
Total	48528.180	93			

FOR SCHOOL TWO

Grade	1182.148	1	1182.148	6.096*	.0143
Sex	57.985	1	57.985	0.299	.5850
Grade & Sex	0.812	1	0.812	0.004	.9485
Within Cells	45568.121	235	193.907		
Total	46809.059	238			

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

TABLE 12

BODY IMAGE-EXTENDED SHOULDER WIDTH MEAN DIFFERENCES BETWEEN SCHOOLS

Subgroups		Mean	Range	S.D.	t
Grade 1 Boys	School 1 (N= 23)	24.691	6 - 44	12.378	.092
	School 2 (N= 58)	25.138	2 - 86	15.740	
Grade 1 Girls	School 1 (N= 20)	29.050	4 - 85	21.984	1.592
	School 2 (N= 53)	21.698	0 - 90	15.240	
Grade 2 Boys	School 1 (N= 23)	25.609	5 - 50	12.666	.018
	School 2 (N= 65)	25.523	0 - 92	21.260	
Grade 2 Girls	School 1 (N= 28)	35.464	1 - 85	23.026	4.311**
	School 2 (N= 63)	22.810	0 - 66	15.973	
All Boys	School 1 (N= 46)	25.152	5 - 50	12.392	.063
	School 2 (N= 123)	25.341	0 - 92	18.785	
All Girls	School 1 (N= 48)	32.792	1 - 85	22.587	3.039**
	School 2 (N= 116)	23.302	0 - 90	15.584	
Grade 1	School 1 (N= 43)	26.721	4 - 85	17.428	1.150
	School 2 (N= 111)	23.495	0 - 90	15.529	
Grade 2	School 1 (N= 51)	31.020	1 - 85	19.530	2.064*
	School 2 (N= 128)	24.188	0 - 92	18.819	
Total Sample	School 1 (N= 94)	29.053	1 - 85	18.624	2.384*
	School 2 (N= 239)	23.866	0 - 92	17.337	

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

Greater accuracy was seen in children from School Two (Mean 24.188) than in those from School One (Mean 31.02). The total sample from School Two showed greater accuracy with a mean of 23.866 compared to a mean of 29.053 for the School One total subgroup.

The investigator found no grade or sex differences in the extended shoulder width dimension (Table 13). Tanner (1969) also found no grade or sex differences.

In the hip width dimension of the body image measure (Table 14) mean scores for children from School One ranged from a low of 9.87 for second grade boys to 15.957 for first grade boys. Mean for the total sample of School One children was 11.926. For children from School Two a range from 10.19 for second grade girls to 17.889 for first grade girls was found. Mean score for the total School Two sample was 14.356.

No differences were found between schools in this dimension of the body image measure (Table 14). An interaction between grade and sex differences was found in this dimension among children from School Two (Table 15). Mean for first grade boys was 12.534; for second grade boys, 17.138. However, mean for first grade girls was 17.887; for second grade girls, 10.19. Thus, the lines of interaction moved in opposite direction. Greater accuracy was shown by first grade boys than by second grade boys while girls differed inversely; second grade girls had greater accuracy than those in first grade. In addition, first grade boys showed greater accuracy than did first grade girls, yet second grade girls were more accurate than second grade boys.

TABLE 13

ANOVA FOR GRADE & SEX IN BODY IMAGE-EXTENDED SHOULDER WIDTH
FOR SCHOOL ONE

Source	Sum of Squares	df	Mean Squares	F	Probability
Grade	310.947	1	310.947	.921	.3399
Sex	1169.381	1	1169.381	3.462	.0661
Grade & Sex	175.291	1	175.291	.519	.4732
Within Cells	30398.250	90	337.758		
Total	32053.855	93			

FOR SCHOOL TWO

Grade	33.167	1	33.167	.110	.7406
Sex	561.938	1	561.988	1.862	.1738
Grade & Sex	7.973	1	7.973	.026	.8710
Within Cells	70941.938	235	301.880		
Total	71544.938	238			

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

TABLE 14

BODY IMAGE-HIP WIDTH MEAN DIFFERENCES BETWEEN SCHOOLS

Subgroups		Mean	Range	S.D.	t
Grade 1 Boys	School 1 (N= 23)	15.957	1 - 64	19.352	.761
	School 2 (N= 58)	12.534	0 - 78	17.472	
Grade 1 Girls	School 1 (N= 20)	9.900	0 -106	23.470	1.147
	School 2 (N= 53)	17.887	0 -120	27.005	
Grade 2 Boys	School 1 (N= 23)	9.870	0 -114	23.810	1.095
	School 2 (N= 65)	17.138	0 -119	28.087	
Grade 2 Girls	School 1 (N= 28)	11.750	0 - 73	16.013	.124
	School 2 (N= 63)	10.190	0 -150	21.158	
All Boys	School 1 (N= 46)	12.913	0 -114	21.673	.507
	School 2 (N= 123)	14.967	0 -119	23.702	
All Girls	School 1 (N= 48)	10.979	0 -106	19.257	.685
	School 2 (N= 116)	13.707	0 -150	24.206	
Grade 1	School 1 (N= 43)	13.140	0 -106	21.324	.503
	School 2 (N= 111)	15.090	0 -120	22.586	
Grade 2	School 1 (N= 51)	10.902	0 -114	19.718	.678
	School 2 (N= 128)	13.719	0 -150	25.065	
Total Sample	School 1 (N= 94)	11.926	0 -114	20.387	.862
	School 2 (N= 239)	14.356	0 -150	23.906	

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

TABLE 15

ANOVA FOR GRADE & SEX IN BODY IMAGE-HIP WIDTH
FOR SCHOOL ONE

Source	Sum of Squares	df	Mean Squares	F	Probability
Grade	103.967	1	103.967	.246	.6214
Sex	101.010	1	101.010	.239	.6265
Grade & Sex	364.828	1	364.828	.862	.3557
Within Cells	38100.590	90	423.340		
Total	38670.383	93			

FOR SCHOOL TWO

Grade	141.947	1	141.947	.250	.6177
Sex	37.792	1	37.792	.066	.7967
Grade & Sex	2245.863	1	2245.863	3.951*	.0480
Within Cells	133567.125	235	568.371		
Total	135992.500	238			

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

This was the only measure in which such an interaction between grade and sex occurred. No grade or sex differences were found for the School One sample.

Summary of Body Image Comparisons. In the various dimensions of the body image measure significant differences in means were found between schools as follows:

1. Height - grade two girls
2. Extended Height - grade two girls; girls; total sample
3. Shoulder Width - grade one girls; grade two girls; girls; grade one; grade two; total sample
4. Extended Shoulder Width - grade two girls; girls; grade two; total sample
5. Hip Width - none

There were consistently no differences for the School One sample throughout the five dimensions of the body image measure. Significant differences in grade were found in the School Two sample in height and shoulder width. A significant interaction between grade and sex was found in the hip width dimension for the School Two group.

The findings in this study of body image differed from that of Popper (1958) who found only slight age differences but differences in sex with girls underestimating themselves more than boys. Woods (1966), however, found boys (age 8) tended to underestimate the height and shoulder width dimensions and girls overestimated dimensions of extended height and hip width. She suggested that the tendency to underestimate one's body image was related to a well-defined body image. Tanner

(1969) found great overestimation in width factors with both boys and girls. No real differences were noted by Tanner between boys and girls.

If Witkin's (1965) view of body image development is true, that body image development is a process of differentiation between the body and the environment, then the function of age should provide differences. In the present study, such differences were found only in the body image dimensions of height and shoulder width for the School Two sample. Because the use of this body image measure with younger children appeared to be inappropriate and the data obtained through its use may be questionable it would seem wise not to attempt any comparisons with other findings or to make any suppositions based on this data.

Summary of Significant Differences. In addition to the significant differences in body image noted above, differences were found between schools in self-concept for grade two girls and for the total school subgroups. In movement satisfaction, differences were found between grade two boys, grade ones, and grade twos. A summary of all significant t's is presented in Table 16.

Relationships

Pearson product moment correlations of the relationship of self-concept to body image and movement satisfaction and of movement satisfaction to body image were obtained. The five dimensions of body image were analyzed as separate measures. The better self-concept measures, or more positive scores, were the higher ones.

TABLE 16

SUMMARY OF SIGNIFICANT t's FOR SELF-CONCEPT, MOVEMENT SATISFACTION, & BODY IMAGE BETWEEN SCHOOLS

Subgroups	S-C	M.S.	Body Image				
			H	E.H.	S.W.	E.S.W.	H.W.
Grade 1 Boys							
Grade 1 Girls					2.04*		
Grade 2 Boys		2.01*					
Grade 2 Girls	2.70**		2.11*	2.21*	3.78**	4.31**	
All Boys							
All Girls				2.49**	4.17**	3.04**	
Grade 1		2.55**			2.59**		
Grade 2		2.75**			3.49**	2.06*	
Total School	2.12*			2.30*	4.24**	2.35*	

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

Key.- S-C = Self-concept
M.S.= Movement Satisfaction
H = Height
E.H.= Extended Height
S.W.= Shoulder Width
E.S.W. = Extended Shoulder Width
H.W.= Hip Width

The better movement satisfaction scores and scores on each of the five dimensions of the body image measure were the lower ones. The computation of the Pearson product moment correlations yielded coefficients of opposite numerical sign for the self-concept relationships. Consequently, in the tables and for the discussion included in this section (Tables 17 through 35), all numerical signs for self-concept coefficients have been changed to reflect the true direction of the relationship. Subgroups categorized by sex, grade, and school were analyzed.

School One Subgroups. There was a significant relationship between self-concept and movement satisfaction ($r = .5257$) for grade one boys from School One (Table 17). A low negative relationship was found between movement satisfaction and body image-extended shoulder width for this subgroup also ($r = -.3427$). This finding would indicate higher scores in both measures were found showing a relationship of less satisfaction in movement and less accuracy in size estimation in this dimension for this group.

For the grade two boys group, there was a significant relationship between the self-concept score and movement satisfaction ($r = .5376$); between self-concept and the body image dimensions of extended shoulder width ($r = .3699$); and hip width ($r = .5033$) (Table 18). No significant relationships existed between movement satisfaction and the body image dimensions.

No significant relationships were found between any of the seven variables for the School One grade one girls subgroup (Table 19).

TABLE 17

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL ONE GRADE ONE BOYS

(N = 23)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.5257**	.0224	.1327	.2163	.0022	-.0466
p =	.005	.460	.273	.161	.496	.416
Movement Satisfaction Total Score		-.2428	.0904	-.2085	-.3427*	-.2599
p =		.132	.341	.170	.055	.116

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

TABLE 18

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL ONE GRADE TWO BOYS

(N = 23)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.5376**	-.2490	.0984	.3355	.3699*	.5033**
p=	.004	.126	.328	.059	.041	.007
Movement Satisfaction Total Score		-.1348	.1415	-.1443	-.1269	.3318
p=		.270	.260	.256	.282	.061

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

TABLE 19

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL ONE GRADE ONE GIRLS

(N = 20)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	-.0226	-.0564	-.2024	.2199	-.0025	-.0442
p=	.462	.407	.196	.176	.496	.427
Movement Satisfaction Total Score		-.2725	.1030	.0915	.1865	-.2261
p=		.123	.333	.351	.216	.169

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

It is interesting to note that only for the School One grade one subgroup was this finding also true.

For the School One grade two girls subgroup there was a significant relationship between self-concept and the body image dimensions of extended height ($r = .4104$) and hip width ($r = .5665$) (Table 20). A significant relationship between movement satisfaction and the body image dimension of extended height ($r = .3342$) was also found.

A modest relationship between self-concept and movement satisfaction ($r = .5371$) was found (Table 21) for School One boys. Low, but significant, relationships were also found between self-concept and the body image dimensions of shoulder width ($r = .2737$) and hip width ($r = .2714$). A low negative relationship was found between movement satisfaction and the height dimension of body image ($r = -.2335$).

Only one significant relationship was found among the seven variables for the School One girls subgroup (Table 22). Self-concept appeared to be somewhat related to the body image dimension of hip width for this group ($r = .2616$). No negative relationships between self-concept and the other measures appeared for this subgroup. Only School Two girls also showed all positive relationships between self-concept and all other measures.

No significant relationships were found among the seven variables for the School One grade one subgroup (Table 23). This finding was interesting since in all other subgroups, except grade one girls, at least one relationship was found.

TABLE 20

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL ONE GRADE TWO GIRLS

(N = 28)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.1900	.0617	.4104*	.1239	-.0068	.5665**
p=	.166	.377	.015	.265	.486	.001
Movement Satisfaction Total Score		.0940	-.3342*	.0768	.0199	.0958
p=		.317	.041	.349	.460	.314

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

TABLE 21

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL ONE BOYS

(N = 46)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.5371**	-.1499	.0934	.2737*	.2168	.2714*
p=	.001	.160	.269	.033	.074	.034
Movement Satisfaction Total Score		-.2335*	.0641	-.1956	-.1673	.0698
p=		.059	.336	.096	.133	.322

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

TABLE 22

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL ONE GIRLS

(N = 48)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.1477	.0491	.1454	.1511	.0141	.2616*
p =	.158	.370	.162	.153	.462	.036
Movement Satisfaction Total Score		.0541	-.1624	.0332	.1436	-.0466
p =		.357	.135	.411	.165	.377

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

TABLE 23

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL ONE GRADE ONE

(N = 43)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.2109	-.0227	-.0503	.2226	.0059	-.0523
p =	.087	.443	.374	.076	.485	.369
Movement Satisfaction Total Score		-.2082	.0962	-.0236	-.0124	-.2349
p =		.090	.270	.440	.469	.065

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

Correlation data for the School One grade two subgroup showed low but significant relationships between self-concept and movement satisfaction (r = .3632); between self-concept and the body image dimensions of extended height (r = .2644), shoulder width (r = .2238) and hip width (r = .5207) (Table 24). Low correlation was found between movement satisfaction and the hip width dimension of body image (r = .2494).

For the School One sample group there were significant relationships between total scores for self-concept and movement satisfaction (r = .337) and between self-concept and the body image dimensions of shoulder width (r = .207) and hip width (r = .259) (Table 25). No significant relationships were found between movement satisfaction and the body image dimensions.

School Two Subgroups. In the School Two grade one boys subgroup low relationships were found between self-concept and movement satisfaction (r = .2474) and between self-concept and the body image dimension of extended height (r = .3129) (Table 26). No significant relationships were found between movement satisfaction and the body image dimensions.

The only significant relationship found among the seven variables for the School Two grade two boys subgroup was between self-concept and movement satisfaction (r = .3662). Data pertaining to this subgroup may be found in Table 27.

The only significant relationship found among the seven variables for the School Two grade one girls subgroup was between movement satisfaction and the body image dimension of hip width (r = -.2652). Table 28 shows the findings for this subgroup.

TABLE 24

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL ONE GRADE TWO

(N = 51)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.3632**	-.0881	.2644*	.2238*	.1152	.5207**
p =	.004	.269	.030	.057	.210	.001
Movement Satisfaction Total Score		-.0542	-.0426	-.0637	-.0582	.2494*
p =		.353	.383	.328	.343	.039

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

TABLE 25

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL ONE

(N = 94)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.337**	-.068	.122	.207*	.088	.259**
p =	.001	.256	.121	.023	.200	.006
Movement Satisfaction Total Score		-.130	-.033	-.081	.010	.023
p =		.105	.377	.218	.461	.415

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

TABLE 26

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL TWO GRADE ONE BOYS

(N = 58)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.2474*	-.0468	.3129*	.0141	-.0444	.0817
p =	.031	.364	.008	.458	.370	.271
Movement Satisfaction Total Score		-.0541	.1451	.0373	-.1802	.1446
p =		.343	.139	.390	.088	.139

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

TABLE 27

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL TWO GRADE TWO BOYS

(N = 65)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.3662**	-.0629	-.0110	-.1666	-.1519	.0299
p =	.001	.309	.466	.092	.114	.407
Movement Satisfaction Total Score		.0740	-.0442	-.0312	.0458	.0070
p =		.279	.363	.402	.359	.478

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

TABLE 28

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL TWO GRADE ONE GIRLS

(N = 53)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.1979	.0571	.0750	.1732	-.0027	.2034
p =	.078	.342	.297	.107	.492	.072
Movement Satisfaction Total Score		.0307	.0409	-.0449	-.0695	-.2652*
p =		.414	.386	.375	.311	.027

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

For the School Two grade two girls subgroup there were low correlations between self-concept and the body image dimensions of height ($r = .3289$) and shoulder width ($r = .2163$) (Table 29). No significant relationships existed between movement satisfaction and the body image dimensions.

The only significant relationship among the seven variables found in the School Two boys subgroup, was between self-concept and movement satisfaction ($r = .3161$). Findings for this subgroup are shown in Table 30.

In the School Two girls subgroup slight relationships were seen between self-concept and movement satisfaction ($r = .1629$) and between self-concept and the body image dimension of shoulder width ($r = .1802$) (Table 31). The entirely positive findings in the relationships between self-concept and all other measures was found in only one other subgroup, the School One girls. Slight relationship was also found between movement satisfaction and the body image dimension of hip width ($r = -.1478$).

Low relationships were seen between self-concept and movement satisfaction ($r = .2257$) and between self-concept and the body image dimension of extended height ($r = .2160$) for the School Two grade one subgroup (Table 32). No significant relationships were found between movement satisfaction and the body image dimensions.

The only significant relationship noted for the School Two grade two subgroup was between self-concept and movement satisfaction ($r = .2655$). Table 33 shows the findings for this subgroup.

TABLE 29

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL TWO GRADE TWO GIRLS

(N = 63)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.1307	.3289**	.1719	.2163*	.1141	-.0442
p =	.154	.004	.089	.044	.187	.365
Movement Satisfaction Total Score		.1461	.1304	.1615	-.1631	-.0080
p =		.127	.154	.103	.101	.475

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

TABLE 30

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL TWO BOYS

(N = 123)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.3161**	-.0606	.1382	-.0621	-.1098	.0529
p =	.001	.253	.064	.247	.113	.281
Movement Satisfaction Total Score		.0109	.0452	.0094	-.0357	.0500
p =		.453	.310	.459	.348	.291

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

TABLE 31

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL TWO GIRLS

(N = 116)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.1629*	.1378	.1221	.1802*	.0606	.0866
p =	.040	.070	.096	.026	.259	.178
Movement Satisfaction Total Score		.0556	.0785	.0233	-.1183	-.1478*
p =		.277	.201	.402	.103	.057

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

TABLE 32

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL TWO GRADE ONE

(N = 111)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.2257**	.0054	.2160**	.0857	-.0113	.1350
p =	.009	.477	.011	.186	.453	.079
Movement Satisfaction Total Score		-.0157	.1036	.0038	-.1248	-.0926
p =		.435	.140	.484	.096	.167

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

TABLE 33

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL TWO GRADE TWO

(N = 128)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.2655**	.0901	.0791	.0019	-.0306	.0269
p =	.001	.156	.187	.492	.366	.382
Movement Satisfaction Total Score		.0900	.0190	.0407	-.0286	.0019
p =		.156	.416	.324	.374	.492

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

Correlation data for the School Two sample showed significant relationships between the self-concept total score and movement satisfaction ($r = .248$) and between self-concept and the body image dimension of extended height ($r = .142$) (Table 34). No significant relationships were found between movement satisfaction and the body image dimensions.

Summary of Relationships. Table 35 presents a summary of significant relationships found. In the School One sample group, significant relationships were found at low to modest levels between self-concept and movement satisfaction. Similar relationship was found between self-concept and the body image dimension of hip width. In five of the nine subgroups analyzed, self-concept appeared to be related to movement satisfaction. Relationship appeared strongest among boys and grade one. In six out of the nine subgroups self-concept appeared to be related to the body image dimension of hip width. Grade two girls and grade two showed some relationship between self-concept and the body image dimension of extended height. Boys, grade two, and the total School One sample showed some relationship between self-concept and the body image dimension of shoulder width. Grade two boys were found to show a relationship between self-concept and the body image dimension of extended shoulder width. No relationships were found for any of the nine subgroups between self-concept and the body image dimension of height.

In the School Two sample group significant correlations were found at a low level between self-concept and movement satisfaction.

TABLE 34

PEARSON CORRELATION COEFFICIENTS
FOR SCHOOL TWO

(N = 239)

	Total Scores					
Items	Movement Satis.	Body Image				
		Height	Ext. Height	Shoulder Width	Ext. Shoulder Width	Hip Width
Self-Concept Total Score	.248**	.371	.142**	.046	-.022	.072
p =	.001	.284	.014	.241	.367	.133
Movement Satisfaction Total Score		.029	.059	.015	-.067	-.038
p =		.327	.182	.406	.151	.277

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

TABLE 35

FREQUENCY OF SIGNIFICANT CORRELATION COEFFICIENTS

	Mov't Satis.	Body Image				
		Height	Extend. Height	Sh. Width	Ext. Sh. Width	Hip Width
School 1						
Self-Concept	5	0	2	3	1	6
Movement Satisfaction		1	1	0	1	1
School 2						
Self-Concept	7	1	3	2	0	0
Movement Satisfaction		0	0	0	0	2

Note.- A frequency of 9 was possible in each dimension reflecting the subgroups analyzed for each school.

Seven of the nine subgroups showed a significant relationship between these two measures. Grade two girls showed a relationship between self-concept and the body image dimension of height. Grade one boys, grade one, and the total sample showed relationships between self-concept and the body image dimension of extended height. Grade two girls and girls showed some relationship between self-concept and the body image dimension of shoulder width. No relationships were found between self-concept and the body image dimensions of extended shoulder width and hip width. It was interesting to note that while no relationships were found between self-concept and hip width for the School Two subgroups, quite the opposite was found in the School One groups. Among the School One subgroups, six of nine showed some relationship.

No previous studies had attempted to discover relationships between these measures of self-concept and movement satisfaction. Because of the nature of the study no cause-effect inferences nor generalizations are possible. Differences between the school groups in cultural, socioeconomic, or educational backgrounds could have brought about variations which would result in different relationships among the measures.

Movement satisfaction appeared to be related for the School One sample group to the body image dimension of height for boys, of extended height for grade two girls. In the School Two sample, the only significant correlations found between movement satisfaction and body image dimensions were those of hip width for grade one girls and all girls. These correlations were at low levels and negative in direction.

Tanner (1969) found no significant correlations between movement satisfaction and vertical-horizontal dimensions of body image. She concluded that no relationship existed between these variables. Since some of the correlations found in this study were low, not significant and not representative in the total samples, such a conclusion may be supported or may be open to further study. However, other intervening conditions related to the nature of the body image measure may well explain the lack of further relationships. Many factors discussed under the observations section could have served to affect these findings. Further study utilizing a different body image measure was felt needed before a firm conclusion supporting no relationship between movement satisfaction and body image in younger children could be made.

Observations

An informal aspect of the study was the observational study of the children during the administration of the three test measures. Narrative records were made at the close of each testing period and compiled at the end of the day. Those behaviors or events which occurred most frequently were noted. Categories utilized in the narrative record included ability to follow instructions, length of attention span, limited written and motor skills, cognitive and perceptual levels of development, creativity, peer pressure, subjects anonymity and the testing situation. Events in the various categories were noted as they applied to the test administration and design, to responses made to particular test items, or to the testing situation in general.

Events which were most critical included patterns in response without regard for the question, more than one response per question, inaccuracy in written skill, perceptual difficulties such as number reversal or inversion, difficulty in concentration or memory, and difficulties related to the testing schedule. Other notations dealt with the class climate, the testing order chosen, and difficulties in interpretation of questions.

The observational study of the children related to testing proved an interesting and informational aspect of this study. Little group testing with younger children has been done. In an administration of the self-concept measure, Cratty (1967) had found it necessary to discard forty-five per cent (45%) of the data from five year olds and 20 per cent of that from sixes. Discussions with other investigators who utilized children in their investigations had alerted this investigator to the importance of special provisions for many factors in the testing situation when the subjects used are younger children. Although some problems did occur in the present study, only 14% of the sample was lost because of inaccurate or incomplete data. Since this percentage also included children who were absent for one or more of the tests, it is an understandable and minimal amount of loss.

Great care was required in preparing the children for the testing. Time was required to help them understand exactly what was expected of them. The subjects' ability to follow instructions varied greatly. Some children forgot how to mark the answer forms, or where to go for particular test items as in the body image measure unless

they were aided during the testing. Paper guides were used to help the children keep their places on the written answer forms and record answers for appropriate questions. The different colored pencils proved to be an attractive distraction from the testing to the children. The color identity was more related to art activity than sex identification to the children.

The attention span of some children tended to be short. The twenty-item self-concept measure seemed to be appropriate in length. The thirty-item movement satisfaction measure, requiring more effort in response, however, proved to be a little long for some children. As attention to the task waned, concentration lapsed and errors were made in response. Children were more confused as to which question was to be answered. Although following a set pattern rather than really responding to each particular question was evidenced throughout the tests, patterning of responses was more pronounced with the last ten questions of the movement satisfaction measure. When found in general, this behavior seemed to be more a halo effect in response to a particular answer column or figure.

Distinction along a graduated scale as presented in the movement satisfaction scale appeared to be difficult for some children. Perhaps such fineness in evaluation is a function of age and fewer categories would result in more accurate responses for younger children. Interpretation of some questions, such as one related to playing with younger children which appears in the self-concept measure, may have been different from that expected in the test design. Some children

commented regarding playing with younger brothers and sisters as their interpretation of playing with younger children.

The effect of limited written skills was evident in the body image testing. Ability to write numbers varied greatly among the subjects. Poor skills made it extremely difficult for the investigator to interpret the data for this item. Many numbers were questions and no assurance can be made that the investigator chose that figure which was intended by the subject. Ones, fours, sixes, sevens, and nines presented difficulties in interpretation.

The perceptual aspects related to the body image measure presented the investigator with the greatest difficulty and concern. The concept of estimating one's size related to the grids seemed to be difficult to grasp for the subjects of this study. The task of finding one's estimated dimension and then associating the number at the side with that line and recording that number was a difficult one. The width measure also involved a right-left orientation and ability to cross the midline visually which was confusing and difficult for the children. Some children were proud of the fact that they knew their height and used those figures in response regardless of the directions and explanations. Another interpretation problem was presented by children who reversed or inverted their figures, a normal occurrence at the age and stage of development of the subjects used. The investigator felt the data were tainted by these factors in the body image aspect.

Some evidence was noted of peer pressure resulting in responses according to how the individual perceived he should reply or to how

others were replying rather than how he really felt within himself. Perhaps this is an unavoidable aspect of self-reporting. Some children were also concerned regarding who would see their responses. In the self-concept measure some children also counted and compared the number of yes responses they had made. Of course some no responses were expected and indicated more positive self-concept so such a response set would invalidate the data.

As is usual in a normal day with elementary school age children, many extraneous elements affected the subjects related to their physical and mental condition when tested. The time of testing, day and hour, had an effect. Lunch, recess, an assembly, Monday and Friday conditions became intervening events. The usual class climate and teacher-class relationships also had an effect.

The testing order for the three measures used (self-concept, movement satisfaction, and then body image), was a blessing. Rapport could be established between the investigator and the children. The three items increased in complexity but the children were able to build on a base of comfort and confidence in the testing situation.

The events which occurred in the self-concept and movement satisfaction measures were those which could be better controlled with appropriate revisions in administration. Both the self-concept and the movement satisfaction measures were appropriate in design for the subjects used in this study. The body image measure, however, was questionable in validity and the data in this aspect may well be inaccurate. Considerable refinement would be required in this investigator's opinion to make it a truly valid instrument for use with younger children.

CHAPTER V

SUMMARY AND SUGGESTIONS FOR FURTHER STUDY

The purpose of this investigation was to study comparisons and relationships among measures of body image, movement satisfaction, and physical self-concept of first and second grade children. An informal aspect of this study was a description of children in the testing situation.

The design involved utilization of a self-concept measure which was an adaptation of the Piers-Harris Self-Concept Scale developed by the UCLA Perceptual Motor Learning Laboratory (1967), a movement satisfaction measure developed by Tanner (1969), a body image measure developed by McFee (1969) and adapted for use with primary age children by Tanner (1969), and narrative description of children in the testing situation. A single administration of each test in small group situations was carried out in the Spring of 1974, at two schools in Fairfax County, Virginia, with 333 first and second grade children.

Data were scored by the investigator according to procedures established in the design of each of the three test measures. Numerical data were analyzed with the utilization of an SPSS computer program designed to provide basic statistical analyses including means and standard deviations for all variables. Differences were analyzed through the use of t ratios. A two-way analysis of variance was used to study the sex and grade differences found in the seven variables:

self-concept, movement satisfaction, and the body image measures of height, extended height, shoulder width, extended shoulder width, and hip width. Pearson product moment correlations were obtained for the relationships of self-concept to movement satisfaction and body image dimensions and of movement satisfaction to body image dimensions. The .05 level of confidence was selected as significant for this research. Subjective observation data were collected and analyzed according to occurrences representing various selected categories. Subgroups analyzed included grade one boys, grade two boys, grade one girls, grade two girls, all boys, all girls, all grade one, all grade two, and total samples from the two schools.

Findings

First grade children appeared to be generally more positive in self-concept and in movement satisfaction, but children in second grade seemed more accurate in estimation of body image dimensions with the exception of extended shoulder width. Differences were found between grades one and two in movement satisfaction and in the body image dimensions of height and shoulder width. Little difference existed between boys and girls in any of the seven variables. The only significant difference between boys and girls was found in self-concept in one school sample. An interaction between grade and sex existed in the body image dimension of hip width.

Self-concept was significantly related to movement satisfaction in 12 of the possible 18 subgroups. Significant relationships at the .05 level or better were found between self-concept and height for one

subgroup; between self-concept and extended height in five of the subgroups; between self-concept and shoulder width for 5 of the 18 subgroups analyzed; and between self-concept and hip width for six of the nine subgroups in School One. Only one group showed relationship between elements of self-concept and extended shoulder width. Few significant relationships were found between movement satisfaction and the five body image dimensions.

The observational study of children in the testing situation provided much subjective information related to the testing measures and procedures used, and resulted in recommendations for some administrative changes. The self-concept and movement satisfaction measures were satisfactory in design and appropriate for use with primary age children. The body image measure, however, was not designed appropriately for this age child and the data were believed to be of little value.

Some findings differed from those of previous studies using the same measures. Cratty (1967) found no age or sex differences in the self-concept measure for similar aged children. The pattern of the findings in the present study supported no age or sex differences since no grade difference was found and sex difference was noted in only one sample subgroup. In movement satisfaction, Tanner (1969) found lowest mean scores for first grade boys and second grade girls. First grade girls were found with lowest mean score in the current study. Tanner (1969) also found no grade or sex differences in movement satisfaction. In the present study a difference between grades existed in movement

satisfaction in one sample school group. No sex differences were found in the movement satisfaction measure. Data related to the body image measure were believed to be too questionable for comparison with other data.

The interrelationships of self-concept, movement satisfaction, and body image were an important aspect of the study. It was believed that if body image and movement satisfaction were facets of and closely related to the physical self-concept, the implications for affecting positive self-concept development might be many. Significant relationships were found between self-concept and movement satisfaction in 12 of a possible 18 analysis groupings. Although some of the relationships were modest, they were, nevertheless, significant. It would seem that educational programs of movement could have some effect on the development of at least the physical aspects of self-concept.

Five questions served to give structure to the study and were used in designing the analysis of data. Answers to the questions were as follows:

Question One. Was there a significant difference between grade levels in physical self-concept, movement satisfaction, and body image? Some isolated differences were found between schools in various grade level subgroups. Significant differences were found between grades in at least one school group sample in measures of movement satisfaction and the body image dimensions of height and shoulder width. Some grade and sex interaction was found in the body image measure of hip width.

However, in an overall view of the findings, it would seem that very little difference existed between grade levels.

Question Two. Was there a significant difference between boys and girls in physical self-concept, movement satisfaction, and body image? The only significant difference was found between boys and girls in the self-concept measure. Girls from School Two showed a more positive self-concept. Some interaction between grade and sex did occur in the body image dimension of hip width. It would seem appropriate, however, to conclude that no preponderance of significant differences existed between boys and girls.

Question Three. Were there relationships between a child's physical self-concept and his movement satisfaction? Significant relationships were found for 12 of the 18 subgroups analyzed. Grades one and two boys, all boys, grade twos, and the two total school samples showed positive relationships in both school groups. One subgroup of grade one and one of girls also showed positive relationships. Since such a high percentage of the subgroups analyzed showed significant results, it would appear that a relationship does exist between physical aspects of self-concept and movement satisfaction.

Question Four. Was there a relationship between the child's physical self-concept and his body image? Significant relationships were found between self-concept and several of the body image dimensions. However, because of the questionable validity of the data on the body image measure, it would seem to be unwise to draw conclusions about relationships between self-concept and body image.

Question Five. Was there a relationship between the child's movement satisfaction and his body image? Few significant relationships were found between movement satisfaction and the body image dimensions. No strong relationships appeared to exist. It would again seem unwise, however, to conclude that movement satisfaction was or was not related to body image because of the questionable body image data.

Suggestions for Further Study

1. A study of self-concept development from early childhood through adolescence to investigate any trends and variation among various socioeconomic or cultural groups.
2. A study of the relationship of value considerations attached to physical competence and self-concept.
3. Development of a measure for body image appropriate for younger children.
4. An investigation of relationships between number concepts ability and body image.
5. A study of body image development from early childhood through adolescence to investigate change in accuracy.
6. An investigation of relationships between intelligence and height - width perceptions.
7. An investigation of relationships between sex and height - width perceptions.

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APPENDIX A

SELF-CONCEPT ITEMS

SELF-CONCEPT TEST

Administration Instructions

In this test the children are asked to circle "yes" or "no" on their answer form as their first reaction to questions related to how they feel about themselves. Each question is read on the tape and the children then circle "yes" or "no." There are twenty items.

Materials Needed:

Cassette Recorder and Cassette Tape (Side 1)
Answer Forms with Yes and No responses
Red/Blue Pencils
Paper Guides (To help separate questions as they move down the answer form)

Administration:

1. Tell the children that these questions will relate to how they feel about themselves. They should understand that they must circle yes or no for each question and that they do need to decide quickly and answer with their first reaction to each question.

2. Distribute to each child an answer form, a paper guide, and a red/blue pencil. Do not let the children mark before instructions.

3. Boys should use only the blue end of the pencil; girls, only the red end.

4. The children may write in their names, school, grade, and sex.

5. Allow them to ask questions about the test until you are sure they know what they are to do.

6. The taped instructions and questions are attached.

Cautions:

1. Please be sure the children know they must answer each question -- answer yes or no and use a blue (boys) or red (girls) pencil to circle each answer.

2. Please be sure each answer form has the child's name, school (H.W. is sufficient), grade level (1 or 2 - 1st or 2nd year of regular school) and sex indicated correctly.

3. The children (first graders especially) may need to be reminded after each question to move the guide down under the next question.

Taped Instructions for Self-Concept Test:

You have a questionnaire which will determine how you feel about yourself. Each question will be read and you should then immediately decide how you feel and circle yes or no to answer.

-- Ready? --

The first question is -- . Now circle "Yes" or "No." (The question is repeated and the instruction to circle yes or no given again.) -- The second question is -- (etc. through the twenty items).

SELF-CONCEPT TEST

(Answer Form and Scoring Key)

NAME_____SCHOOL_____GRADE__M__F__

Scoring Key				
*	1.	Are you good at making things with your hands?	Yes	No
*	2.	Can you draw well?	Yes	No
*	3.	Are you strong?	Yes	No
*	4.	Do you like the way you look?	Yes	No
	5.	Do your friends make fun of you?	Yes	No
*	6.	Are you handsome/pretty?	Yes	No
	7.	Do you have trouble making friends?	Yes	No
*	8.	Do you like school?	Yes	No
	9.	Do you wish you were different?	Yes	No
	10.	Are you sad most of the time?	Yes	No
	11.	Are you the last to be chosen in games?	Yes	No
*	12.	Do girls like you?	Yes	No
*	13.	Are you a good leader in games and sports?	Yes	No
	14.	Are you clumsy?	Yes	No
	15.	In games do you watch instead of play?	Yes	No
*	16.	Do boys like you?	Yes	No
*	17.	Are you happy most of the time?	Yes	No
*	18.	Do you have nice hair?	Yes	No
	19.	Do you play with younger children a lot?	Yes	No
*	20.	Is reading easy for you?	Yes	No

*Questions to which a positive response is expected.

SELF-CONCEPT TEST

(Scoring Sample)

NAME JANE DOE SCHOOL H.W. GRADE 1 M F X

1.	Are you good at making things with your hands?	(Yes)	No	
2.	Can you draw well?	(Yes)	No	
3.	Are you strong?	(Yes)	No	
4.	Do you like the way you look?	(Yes)	No	
5.	Do your friends make fun of you?	Yes	(No)	
6.	Are you handsome/pretty?	Yes	(No)	X
7.	Do you have trouble making friends?	Yes	(No)	
8.	Do you like school?	(Yes)	No	
9.	Do you wish you were different?	Yes	(No)	
10.	Are you sad most of the time?	Yes	(No)	
11.	Are you the last to be chosen in games?	Yes	(No)	
12.	Do girls like you?	(Yes)	No	
13.	Are you a good leader in games and sports?	Yes	(No)	X
14.	Are you clumsy?	Yes	(No)	
15.	In games do you watch instead of play?	Yes	(No)	
16.	Do boys like you?	Yes	(No)	X
17.	Are you happy most of the time?	(Yes)	No	
18.	Do you have nice hair?	(Yes)	No	
19.	Do you play with younger children a lot?	Yes	(No)	
20.	Is reading easy for you?	(Yes)	No	

20
- 3 Negative Responses (Indicated by an X)

17 = Score

APPENDIX B

MOVEMENT SATISFACTION ITEMS

MOVEMENT SATISFACTION SCALE

Administration Instructions

In this test the children are asked to color the Snoopy figure on their answer form which best shows how they feel about doing thirty various movement experiences. The series of Snoopy drawings represents five different emotions: very happy, happy, don't know, sad, and very sad.

Materials Needed:

Cassette Recorder and Cassette Tape (Side 2)
Snoopy Chart of Five Figures
Answer Forms with Snoopy Figures
Red/Blue Pencils

Administration:

1. The Snoopy Chart should be pinned to the board in front of the children.

2. Distribute to each child a three-sheet Snoopy-figured answer form and a red/blue pencil. Do not let the children color before instructions.

3. Boys should use only the blue end of the pencil; girls, only the red end.

4. The children may write in their names, school, grade, and sex.

5. All children should understand that they are to color just one Snoopy figure for each answer - the one which best shows how they feel about that item.

6. The taped instructions to the children use the Snoopy wall chart to help the children understand how to interpret the figures and apply the scale. You will need to point to the chart and the individual figures as they are referred to in the instructions. The instructions that will be given are attached.

7. You may stop the tape between questions if the children need more time than is allotted to respond.

Cautions:

1. Do not let the children color before the instructions are given.

2. As the children are responding to the questions please be sure they are coloring only one Snoopy figure per question.

3. Be alert for any children whom you feel are making patterns or following columns in answering rather than responding to each question and please note such later on their answer form.

4. Please be sure each answer form has the child's name, school (H.W. is sufficient), grade level (1 or 2 - 1st or 2nd year of regular school), and sex indicated correctly.

Taped Instructions for the Movement Satisfaction Scale:

Do you recognize these pictures? (Point to the Snoopy Wall Chart. Response from children.) Yes, of course you do; our friend Snoopy. Do you notice anything about Snoopy in these drawings? Yes, in some he is very happy, and in some he is sad; either looking as though he feels good about things, or bad about them. How does he look here? (Point to the first drawing.) Yes, very happy indeed doesn't he; and here? (Point to the second drawing.) Yes, still happy, but not very happy like the last one. In this one? (Point to the last drawing.) Oh yes, he is very unhappy isn't he, very sad looking; and here? (Point to the next to last drawing.) He is still sad, his ears are still drooping down aren't they? Is he as unhappy as the one before? No, he isn't is he. Now look at this drawing in the middle. (Point to the middle drawing.) He's not happy or sad, is he? In fact he looks as though he is not quite sure how he feels about things. His ears are half up and half down, aren't they? He really doesn't know how to feel about it all.

Can you really tell how Snoopy feels by these pictures? Yes, I think you can now -- so now you are going to use them in a fun way; you are going to use them to show me how you feel about some of the things that you do.

You see the papers in front of you; they have Snoopys drawn on them just like these on the board. I am going to ask you some questions about things that you do, and you are to color the Snoopy which best shows how you feel about doing them.

Let's have a little practice with one or two questions before you start coloring on your paper. If I ask you "How do you feel about eating ice cream?" which one would you color? Yes, nearly all of you would color the very happy one; some might not feel quite so pleased about it and might color just the happy one, but I don't suppose anyone would color the very sad one. Let's try another, "How do you feel about playing the piano?" Some of you may never have had the chance to try this, and so have no idea how you would feel about it. If that is the case, which one would you color? Yes, this one in the middle, the one which is not really sure what to think about how he feels. One more: "How do you feel about having to sit down all day long?" Most of you feel very unhappy when you have to sit still for a long time, don't you.

I think you know how to do this now, don't you? Just remember, you don't have to try to please anyone by your answer; there is no right or wrong answer; you are just showing how you feel about the question.

Is your name at the top of your paper? Put your marker pencil beside number one, and listen -- now color the Snoopy which best shows how you feel about that. Now put your marker beside number two -- (etc.)

Movement Satisfaction Scale Items

1. How do you feel about bouncing a ball many times without stopping?
2. How do you feel about jumping very high?
3. How do you feel about picking very big things up and carrying them?
4. How do you feel about moving and stopping very suddenly?
5. How do you feel about climbing on very high things?
6. How do you feel about tagging games?
7. How do you feel about playing hard and using lots of energy?
8. How do you feel about stretching your body as far as you can?
9. How do you feel about balancing on one leg?
10. How do you feel about running very fast?
11. How do you feel about jumping over something about as high as your knee?
12. How do you feel about rolling over and over and over?
13. How do you feel about moving in a big space?
14. How do you feel about moving quickly around chairs, tables or people when you have to?
15. How do you feel about kicking a ball a long way?
16. How do you feel about having to move slowly all the time?
17. How do you feel about running for a very long time?

18. How do you feel about moving to music?

19. How do you feel about running backwards?

20. How do you feel about bouncing a ball quickly lots of times?

21. How do you feel about hanging from things?

22. How do you feel about throwing a ball for someone else to catch?

23. How do you feel about moving when your friends are watching you?

24. How do you feel about playing very hard and fast?

25. How do you feel about jumping on to something about as high as your knee?

26. How do you feel about moving very heavy things?

27. How do you feel about throwing and catching a ball?

28. How do you feel about moving sideways?

29. How do you feel about changing directions quickly when you are moving?

30. How do you feel about jumping a long way, when you get to run before you jump?

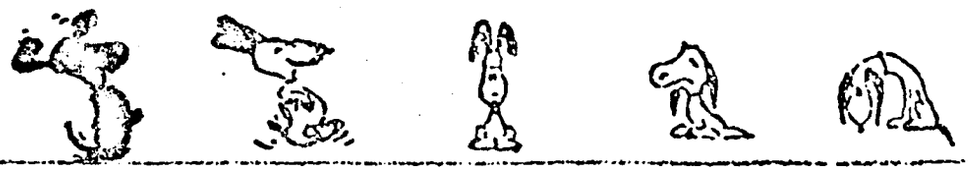
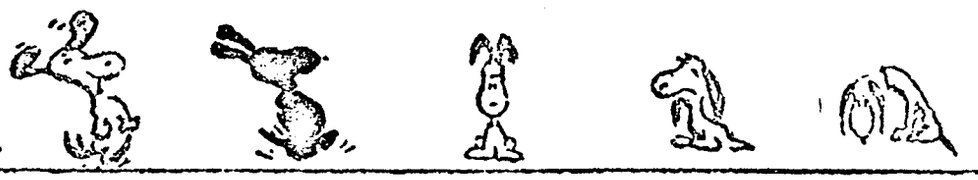
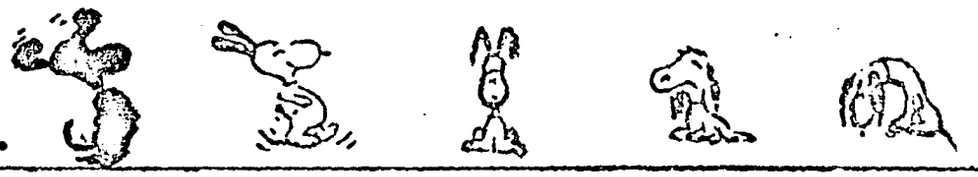
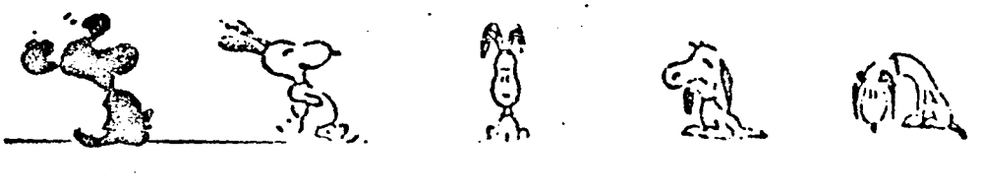
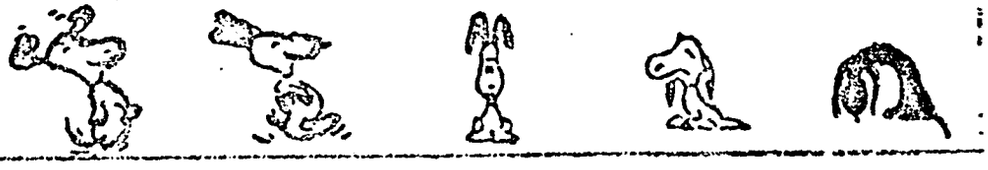
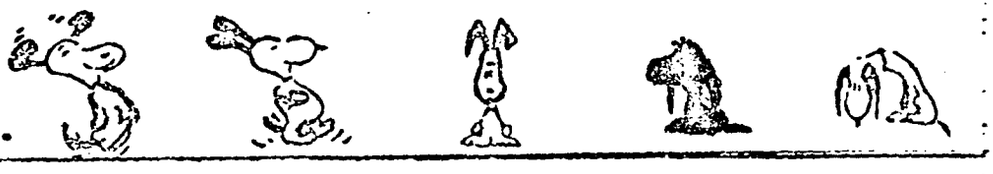
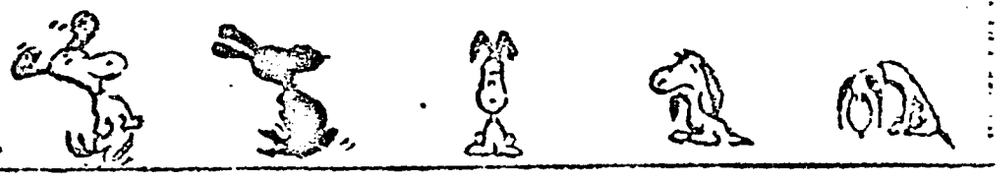
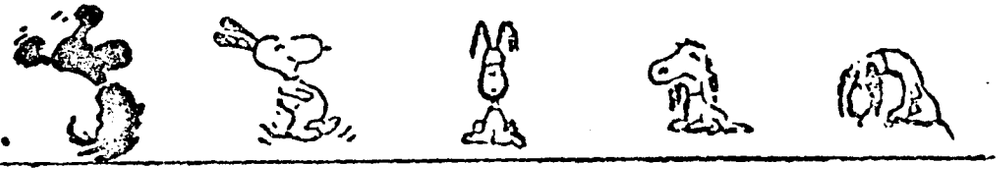
MOVEMENT SATISFACTION SCALE
(Answer Form)

NAME GRADE SCHOOL M__ F__

	Very Happy	Happy	Undecided	Sad	Very Sad
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

MOVEMENT SATISFACTION SCALE
(Scoring Sample)

NAME JANE DOE GRADE 1 SCHOOL 2 M__ F X

Score Values		
1	11	
3	12	
2	13	
1	14	
1	15	
5	16	
4	17	
2	18	
1	19	
1	20	

21 TOTAL

APPENDIX C

BODY IMAGE ITEMS

BODY IMAGE GRID TEST

Administration Instructions

In this test the children are asked to guess their height, extended height, shoulder width, extended shoulder width, and hip width. They are also actually measured for these same items. The guessed measurements are determined from large vertical and horizontal grids. The actual measurements are taken using tape measures mounted on the wall.

Materials Needed:

Grid Stations -

Cassette Recorder and Cassette Tape (Vertical or Horizontal)
Grid (Vertical or Horizontal) mounted on a wall
Answer Forms
Red/Blue Pencils

Measuring Stations -

Tape Measure (s) mounted on a wall (Vertical or Shoulder and Hip Horizontal)

Administration:

1. The grids and tape measures should be mounted on the walls. In front of the grids should be taped a line approximately five feet from the grid.

2. All children should listen to the instructions for using the grids and practice choosing and writing appropriate numbers until they are sure they understand the test.

3. Boys should use only the blue end of the pencil; girls, only the red one.

4. The children may write in their names, school, grade, and sex.

5. The taped instructions that will be given are attached.

Cautions:

1. Please be sure each answer form has the child's name, school (H.W. or G.R. is sufficient), grade level (1 or 2 - 1st or 2nd year of regular school), and sex indicated correctly.

Taped Instructions for the Body Image Grid Test:

Seat the children on the floor, facing away from the grid, as close as is feasible (about 5 feet). Using a sample of the grid, state the following:

> We are going to play a kind of guessing game that I think you will find fun and interesting. You will be asked to guess the size of certain parts of your body. Your body size is how big you are.
>
> Let me show you how the game will be played. On this board is a small copy of what you will be using to guess your size. You can see that there are rows of black lines. These rows of lines make what is called a grid. There is a green number opposite every other line. You can see that there is not enough space to put a number for every line. When you are guessing your size, you may choose any one of the lines as being the one line that is closest to your size. It is possible that you may wish to choose a line that has a number beside it. (Indicate number 40 as an example, and explain the fact that two numbers, or digits, make the number that is used.) In this case you just write number 40 on your paper beside the mark that I tell you to use.
>
> Now, if you want to choose a line that does not have a number, use the number of the line just <u>below</u> the one that you have chosen, and put an "M" after that number. "M" stands for the 'middle' of two numbers. Let me show you what we will do. Supposing you choose this line to show how high your waist is. (Point to the line <u>above</u> number 40). You will see that the number 40 is <u>the one below</u> your line, so you will write 40M on your score sheet. The waist height is not one of the ones you will be guessing, it was just used for practice.

(Point to four different lines and ask them to call out what they would write on their sheets. Make sure that it is enough practice by observing their faces for their understanding.)

You can see that the lines are evenly spaced; the size of the spaces is not in inches. The numbers are not in any special order, and you will use the number just to show which line you chose as showing your size.

Height

Now we will try the first part of the game. Remember that you must stay seated until the game is over. Turn around and look at the grid. Pretend that you are standing with your back against the grid so that your backbone is on the green line that runs up and down the grid. Pretend your feet are flat on the floor and your arms are straight down at your sides. Guess where you think the top of your head would be, and choose the line that is closest to the top of your head. Write the number of that line on your score sheet, beside the line that says number 1. -- Is everyone finished?

Now pretend you are standing the same as before only with your arms stretched up over your head as high as you can reach. Choose the line that you think your fingers would reach to. Write the number of that line on your sheet beside the number 2.

Width

The lines on this grid will be used for three parts of the game. The three parts are: guessing how wide your shoulders are from here to here (Show on self); how wide you can stretch your arms to the side (Demonstrate span); and how wide you are at the hips (Point to your own hips).

Turn around and look at the grid. The green line is in the middle of the grid. Pretend you are standing with the middle of your back against the green line with both your arms straight down by your sides. Guess where your shoulders will end on each side of you and choose the numbers on one side for one shoulder, and the numbers on the other side for the other shoulder. Write the numbers on your score sheet on the line numbered 3.

Now, again pretend that you are standing with your back against the grid, this time with both of your arms and hands stretched out from your shoulders, sideways. Using the numbers, choose a spot on each side of you that you think you will reach with each hand. Write the numbers for one side, and then the numbers for the other side on your score sheet, on the line numbered 4.

This time, still pretending that you are standing with your back to the grid, guess where your hips will end on each side of you. Choose the numbers for one

side, and the numbers for the other side, and write them on the score sheet on the line beside number 5.

Actual Measurements

Height -

1. Have the children sit a ways from the tape measure area. Have one child come up at a time, stand with back to the tape, feet flat on the floor. Measure the actual measurement of the top of the head and record on the answer form (A.H. = inches) and then have the child extend both arms overhead and take the actual measurement of the fingertips; record on the answer form (A.E.H. =). Have the child return to sitting until all in the small group have been measured.

Width -

1. Have the children sit a ways from the tape measure area. Have one child come up at a time, stand with back to the tape, feet flat on the floor. Measure the shoulder width and record on the answer form (A.S.W. = inches). Have the child stretch both arms out at shoulder level and measure the extended shoulder span. Record on the answer form (A.E.S.W. =). Measure the width of the hips and record on the answer form (A.H.W. =). Have the child sit down until all in the small group have been measured.

BODY IMAGE GRID TEST

(Answer Form)

NAME_____ SCHOOL_____ GRADE___ M___ F___

Estimates (1 through 5)

3._____

1._____

4._____

2._____

5._____

Actual Measurements

A.H. = (height)

A.E.H. = (extended height)

A.S.W. = (shoulder width)

A.E.S.W. = (extended shoulder width)

A.H.W. = (hip width)

BODY IMAGE GRID TEST

(Scoring Sample)

NAME JANE DOE SCHOOL H.W. GRADE 1 M F X

Conversion to Inches & Scores

3. 34 / 92 — 56 − 34 = 22

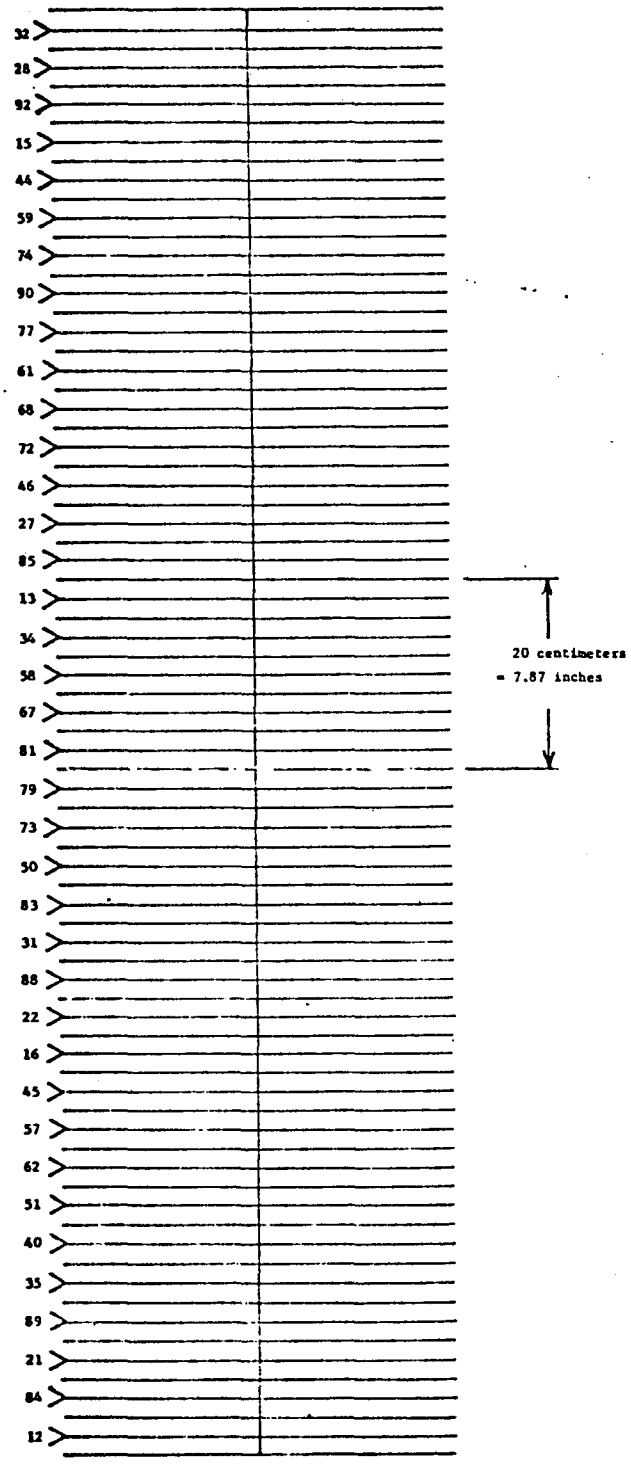
1. 77 — 46

4. 89 / 44 — 53 − 5 = 48

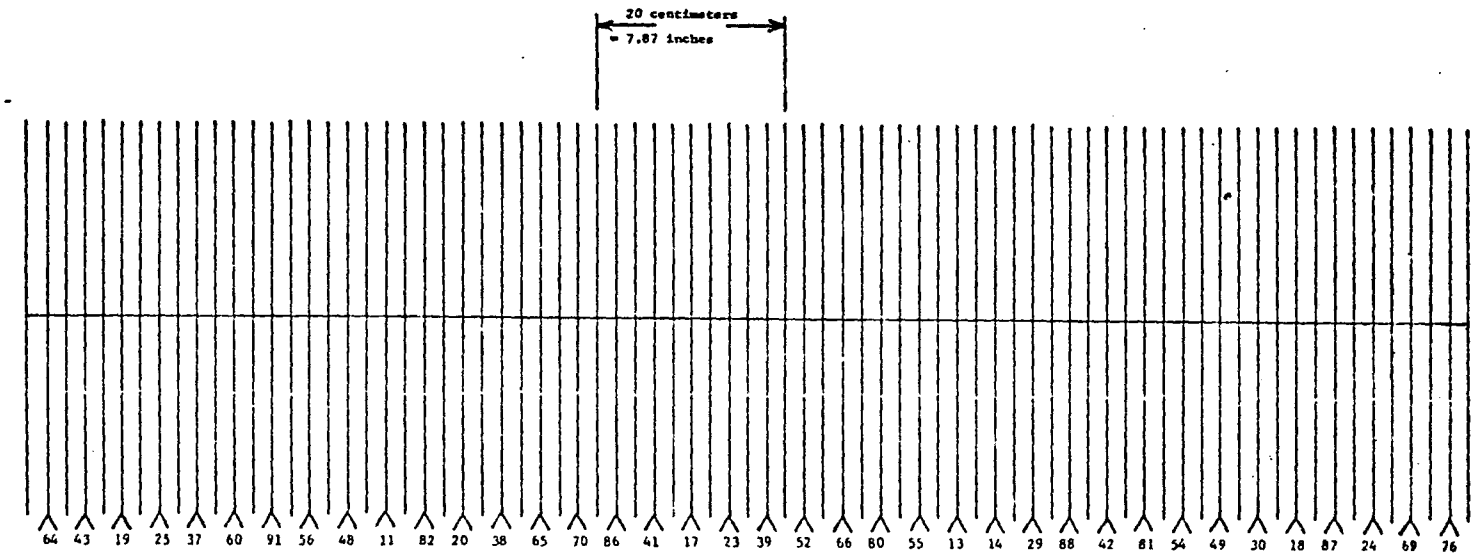
2. 52 — 107

5. 58 / 61 — 45 − 32 = 13

			Discrepancy Score
A.H.	= 50 less 46	=	4
A.E.H.	= 60 from 107	=	47
A.S.W.	= 11 from 22	=	11
A.E.S.W.	= 49 less 48	=	1
A.H.W.	= 10 from 13	=	3



Sample Vertical Grid



Sample Horizontal Grid

APPENDIX D

COMPUTER PROGRAMS

DATA CARD KEY

	Column
Subject Identification Number	1 - 3
School (Hunters Woods = 1; Graham Road = 2)	4
Grade (First = 1; Second = 2)	5
Sex (Male = 1; Female = 2)	6
Self-Concept Item Scores (VAR 001 to VAR 020)	7 - 26
Self-Concept Total Score	27 - 28
Movement Satisfaction Item Scores (VAR 021 to VAR 050)	29 - 58
Movement Satisfaction Total Score	59 - 61
DISHEI (Discrepancy Height Score)	62 - 64
ESTHEI (Discrepancy Extended Height Score)	65 - 67
SWIDTH (Discrepancy Shoulder Width Score)	68 - 70
ESTWID (Discrepancy Extended Shoulder Width Score)	71 - 73
HIPWID (Discrepancy Hip Width Score)	74 - 76

COMPUTER PROGRAMS

DATA LISTING

```
//DUPLICAT JOB (6171,f),'SNODGRASS'
//UTILITY PROC GOPARM=
//GO.SYSIN DD *
```

CODEBOOK

```
//WHAT JOB (6171,F,3,5),'SNODGRASS'
//EXEC SPSS
//GO.SYSIN DD *

  RUN NAME          DATA ANALYSIS TWO
+ FILE NAME         DESCRIPTIVE STATISTICS OF
  VARIABLE LIST     ID SCHOOL,GRADE,SEX,VAR007 TO VAR026,SCTOTAL,
                    VAR029 TO VAR058,MSTOTAL,DISHEI,ESTHEI,SWIDTH,
                    ESTWID,HIPWID
  INPUT FORMAT      FIXED (F3.0,23F1.0,F2.0,30F1.0,6F3.0)
  # of Cases        333
  VAR LABELS        ID,STUDENT ID NUMBER/SCTOTAL,TOTAL SELFCONCEPT
                    SCORE/MSTOTAL,TOTAL MOVEMENT SATISFACTION SCORE/
                    DISHEI,HEIGHT/ESTHEI,EXTENDED HEIGHT/SWIDTH,
                    SHOULDER WIDTH/ESTWID,EXTENDED WIDTH/HIPWID,HIP
                    WIDTH/
  VALUE LABELS      SCHOOL (1)HUNTERS WOODS(2)GRAHAM ROAD/GRADE
                    (1)FIRST GRADE(2)SECOND GRADE/SEX (1)MALE(2)
                    FEMALE/
+ SELECT IF CARDS    SCHOOL EQ 1 AND GRADE EQ 1 AND SEX EQ 1
                     SCHOOL EQ 1 AND GRADE EQ 1 AND SEX EQ 2
                     SCHOOL EQ 1 AND GRADE EQ 2 AND SEX EQ 1
                     SCHOOL EQ 1 AND GRADE EQ 2 AND SEX EQ 2
                     SCHOOL EQ 1 AND GRADE EQ 1
                     SCHOOL EQ 1 AND SEX EQ 1
                     SCHOOL EQ 1 AND SEX EQ 2
                     SCHOOL EQ 1
                     (REPEAT SAME GROUPINGS FOR SCHOOL 2)
  CODEBOOK           VAR007 TO VAR026,SCOTOTAL,VAR029 TO VAR058,
                     MSTOTAL TO HIPWID
  OPTIONS            4
```

+ = card changes each run for each subgroup

```
STATISTICS        ALL
READ INPUT DATA

DATA DECK

FINISH
/*
```

PEARSON CORRELATIONS

```
//PEARCORR (6171,F),'SNODGRASS'
//EXEC SPSS
//GO.SYSIN DD *

RUN NAME          PEARSON CORRELATIONS
+ FILE NAME       PEARSON CORRELATION FOR
VARIABLE LIST     (As in Codebook)
INPUT FORMAT      (As in Codebook)
# of cases        333
VAR LABELS        (As in Codebook)
VALUE LABELS      (As in Codebook)
SELECT IF         (As in Codebook)
PEARSON CORR      (SCTOTAL WITH MSTOTAL TO HIPWID/MSTOTAL WITH
                  DISHEI TO HIPWID
READ INPUT DATA

DATA DECK

FINISH
/*
```

ANOVA

```
//ANOVA (6171,F),'SNODGRASS'
//JOBLIB DD DSN==GWU.PROG,DISP=OLD
//EXEC FORT5,PROG=ANOVA
//GO.SYSIN DD *
ANOVA FOR GRADE AND SEX

0070023920202 or 0070009420202
0004005800530065006 3 or 0004002300200023002 8

SCTOTAL MSTOTAL DISHEI ESTHEI SWIDTH ESTWID HIPWID
(26X,1F2.0,30X,6F3.0)
2759626587174
28616467707376

DATA DECKS (arranged manually by group)

/*
```

+ = card changes each run for each subgroup