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A STUDY OF THE RELATIONSHIP BETWEEN SPECIFIED
PERSONALITY TRAITS AND BODY-CATHEXIS OF
MALE PARTICIPANTS AND NON-PARTICIPANTS
IN HIGH SCHOOL ATHLETICS

A Dissertation Presented

By

ELIMELECH SHOCHAT

Submitted to the Graduate School of the
University of Massachusetts in
partial fulfillment of the requirements
for the degree of

DOCTOR OF EDUCATION

Major Subject: Administration

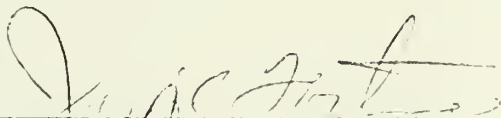
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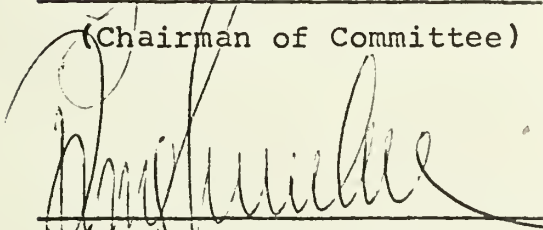
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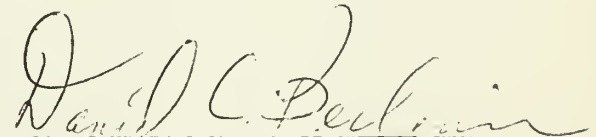
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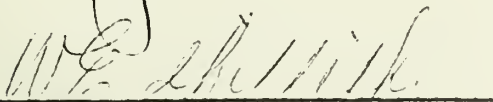
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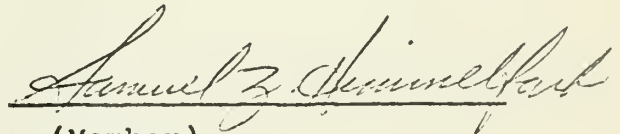
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CHAPTER I

A DESCRIPTION OF THE STUDY

Introduction

Since participation in intramural and interscholastic athletics has gained widespread popularity in secondary schools, educators have long discussed the contributions to both the physiological and psychological growth and development of students actively involved in such programs. For years investigators have concentrated on studying the psychological effects derived from physical activities. Scott listed seven categories which contribute most to the psychological development of the individual due to participation in physical activities: (1) changing attitudes; (2) improving social efficiency; (3) sensory perception and responses; (4) developing a sense of well being--mental health; (5) providing relaxation; (6) providing psychosomatic relief; and (7) acquiring skill.¹

Although these general claims have not been fully

¹M. Gladys Scott, "The Contribution of Physical Activity to Psychological Development", Research Quarterly, 31:308, May, 1960.

supported by investigators including Shepard and Jamerson,² Voltmer and Esslinger,³ Bucher and Dupee,⁴ Nixon and Jewett,⁵ Oberteuffer,⁶ and others, at present there is still only limited information about the relationships that may exist between athletic experience and the attainment of specific self-perceptions and measurable traits of personality.

This study is concerned with two areas of psychological development in students who participate in various levels of extracurricular sport activities within the school system. The two areas under investigation are:

- (1) identification of specified personality traits; and
- (2) self evaluation of Body-Cathexis or Body-Image.*

²George E. Shepard and Richard E. Jamerson, Inter-scholastic Athletics, (New York: McGraw-Hill Book Co., Inc., 1953).

³Edward F. Voltmer and Arthur A. Esslinger, The Organization and Administration of Physical Education, (New York: Appelton-Century-Crofts, Inc., 1949).

⁴Charles A. Bucher and Ralph K. Dupee, Jr., Athletics in Schools and Colleges, (New York: The Center for Applied Research in Education, Inc., 1965).

⁵John E. Nixon and Ann E. Jewett, Physical Education Curriculum (New York: The Ronald Press Co., 1964).

⁶Delbert Oberterffer, Physical Education (New York: Harper and Brothers, 1956).

*For the purpose of emphasis Body-Cathexis and Body-Image will be capitalized throughout this paper.

A recent study of Kroll and Crenshaw relating personality traits to successful performance in athletics indicated that certain personality characteristics:

- (1) are prerequisites for success and that different athletic activities necessitate different sets of such characteristics.
- (2) can be linked to motivation for entry, continuing on, or dropping out of participation in a sport; and
- (3) can be affected by participation and associated experiences dependent upon both features found in the participation and the specified sport.

The authors pointed out, however, that until now "little has been contributed to the formulation of any general principles of personality factors in athletics."⁸

Body-Cathexis, a term which is used synonymously with "Body-Image" is a difficult concept to define and measure. Body-Cathexis:

refers to the body as a psychological experience, and focuses on the individual's feelings and attitudes towards his own body. It is concerned with the individual's subjective experiences with his body and the manner in which he has organized these experiences.⁹

⁷Walter Kroll and William Crenshaw, Multivariate Personality Profile Analysis of Four Athletic Groups, (A paper presented to the Second International Congress of Sport Psychology, Washington, D. C., October, 1968), p. 1.

⁸Ibid., p. 2.

⁹Seymour Fischer and Sidney E. Cleveland, Body Image and Personality (New York: Von Nostrand, 1958), p. X.

This study is not intended to be all inclusive with regard to the psychological development of adolescence or the potential contribution of physical education and other extracurricular sport activities. Rather, the primary interest of this study is to ascertain the implications it might have, if any, for the programs carried on by physical educators, coaches and athletic directors.

Statement of the Problem

The purpose of this study is to investigate the relationships, if any, between specified personality traits and Body-Cathexis of male senior high school participants and non-participants in athletics.

Participating seniors were classified into three groups.

- A. Varsity athletes categorized by participation in (1) fall sports, (2) winter and spring sports.*
- B. Intramural participants categorized by participation in (1) fall sports, (2) winter and spring sports.**
- C. Non-participants categorized by (1) students who do not participate in any organized extra-

*The initials FV and WSV hereafter in this document refer to fall varsity athletes and winter and spring varsity athletes respectively.

**The initials FI and WSI hereafter in this document refer to fall intramural participants and Winter and Spring Intramural participants respectively.

curricular sports activities at school but participate in sports activities outside school, (2) students who do not participate in any organized extracurricular sports activities at school and do not participate in any sports activities outside school.***

Specifically the investigation was conducted:

1. To compare personality traits of FV, WSV athletes, FI, WSI participants, NPOSP and NPOSN non-participants.
2. To compare Body-Cathexis of FV, WSV athletes, FI, WSI participants, NPOSP and NPOSN non-participants.
3. To intercorrelate obtained personality trait indices and Body-Cathexis indices among each of the five designated groups and to identify personality correlates with Body-Cathexis.

Hypotheses

The objectives of this study are twofold:

1. To determine the relationship, if any, between each personality trait as measured by the Gordon Profile and the Grodon Inventory and Body-Cathexis as measured by the Secord and Jourard Body-Cathexis Test among (1) FV, WSV athletes, (2) FI, WSI participants, and (3) NPOSP, NPOSN non-participants.
2. To identify the degree of intercorrelation between each personality trait and the Body-Cathexis score of the three participating treatment groups.

***The initials NPOSP and NPOSN hereafter in this document refer to students who do not participate in any organized extracurricular sports activities at school but participate in sports activities outside school, and students who do not participate in any organized extracurricular sports activities at school and do not participate in any sports activities outside of school respectively.

To expedite this investigation the following null hypotheses were proposed for testing:

1. There are no differences ($p < .05$) in scores on the individual personality traits between individuals in the different treatment groups. Treatment group one includes the varsity athletes, treatment group two includes the intramural participants and treatment group three includes the non-participants.
2. There are no differences ($p < .05$) in scores on the individual personality traits between individuals in the different conditions. Condition one includes FV athletes, FI participants and NPOSP non-participants. Condition two includes WSV athletes, WSI participants and NPOSN non-participants.
3. Treatment groups do not interact with conditions in scores on the individual personality traits.
4. There are no differences ($p < .05$) in scores on the Body-Cathexis between individuals in the different treatment groups. Treatment group one includes the varsity athletes, treatment group two includes the intramural participants and treatment group three includes the non-participants.
5. There are no differences ($p < .05$) in scores on the Body-Cathexis between individuals in the different conditions. Condition one includes FV athletes, FI participants and NPOSP non-participants. Condition two includes WSV athletes, WSI participants and NPOSN non-participants.
6. Treatment groups do not interact with conditions in scores on the Body-Cathexis.
7. There is no significant correlation between Body-Cathexis and each individual personality trait among each of the following groups: (1) FV, WSV athletes, (2) FI, WSI participants, and (3) NPOSP, NPOSN non-participants ($p < .05$).

Limitations of the Study

The study was conducted under the following limitations:

1. A non-random sampling procedure was used in the study. On the day of testing all seniors present in each school were tested.
2. Testing was done during the month of October which is the peak of the fall interscholastic season.
3. No attempt was made to account for any sports activities other than those sanctioned by the school.
4. This study, like all other studies which utilize paper and pencil tests to measure Body-Image, is limited by the subjects attempt to create a "halo effect".
5. No attempt was made to control the social desirability variable.

Delimitations of the Study

Special delimiting factors involved in the study were:

1. Only the eight personality traits measured by the Gordon Personal Profile and the Gordon Personal Inventory were utilized as a measure of personality.*
2. Only the forty-six body parts, attributes and functions included in the Body-Cathexis Test were utilized as a measure of Body-Cathexis.**
3. The subjects were limited only to the number of male senior students enrolled in the participating schools during the 1969-70 academic year.

*The tests are described in detail in the Procedure Chapter.

**The test is described in detail in the Procedure Chapter.

4. No distinction was made between first string varsity athletes and those squad members who are substitutes.
5. The investigator was concerned merely with investigating the present state and relationships of personality traits and Body Image as they relate to participation and non-participation in school athletics. There was no attempt to establish any cause and effect relationship among the experimental variables.

Definition of Terms

Personality.--"Personality is the dynamic organization with the individual of those psychophysical systems that determine his unique adjustments to his environment."¹⁰

The term personality, as used in this investigation, is limited by the meaning of the two standardized scales, of the Gordon Personality Profile and the Gordon Personality Inventory. The eight personality traits identified by Gordon are Ascendancy, Responsibility, Emotional Stability, Sociability, Cautiousness, Original Thinking, Personal Relations, and Vigor.* According to Cattell¹¹

"A trait is a collection of reactions

¹⁰Gordon W. Allport, Personality: A Psychological Interpretation (New York: Henry Holt and Company, 1937), p. 48.

*For the purpose of emphasis the personality traits identified above will be capitalized throughout this paper.

¹¹Raymond B. Cattell, Description and Measurement of Personality (New York: World Book Company, 1946), p. 61.

or responses bound by some kind of unity which permits the responses to be gathered under one term and treated in the same fashion for most purposes. . . . It is an empirical concept. It is a convenient construct or entity which we call a 'mental structure' and by reason of which the particular behavior sequence in question reappears repeatedly in a consistent and recognizable form."

Body-Cathexis.--For the purpose of this study the term "Body-Cathexis" is used as a synonymous term with "Body-Image". Body-Image is a "theoretical construct that has been devised as a frame of reference in terms of which the physical aspect of the concept of self can be studied."¹² For the purpose of this study Body-Image is defined as that which "comprises all of a person's perceptions, beliefs, and expectancies with respect to his body's structure, function, and appearance."¹³ Or ". . . the body as a psychological experience, and focuses on the individual's feelings and attitudes toward his body."¹⁴

Non-participant.--Any individual who is completely

¹²William W. Sloan, "A Study of the Relationship Between Certain Objective Measures of Body Image and Performance on a Selected Test of Motor Abilities." (Unpublished Master Thesis, University of Maryland, 1963), p. 5.

¹³Sidney M. Jourard, Personal Adjustment (New York: MacMillan Company, 1963), p. 123.

¹⁴Fisher and Cleveland, op. cit., p. X.

disassociated from any school organized extracurricular sport activities.

Intramural participant.---Any individual who participates voluntarily within the school organized program in a supervised team, individual or group physical activity.

Varsity athlete.---Any individual who has participated for at least one year in interscholastic competition.

For the purpose of this study sports events will be categorized in the following order:

Varsity fall sports.---Football, soccer, cross-country.

Varsity winter and spring sports.---Basketball, track and field, gymnastics, skiing, swimming, hockey, golf, baseball, tennis.

Intramural fall sports.---Touch football, soccer, cross-country.

Intramural winter and spring sports.---Basketball, track and field, gymnastics, swimming, badminton, tennis.

Significance of the Study

The two areas under investigation in this study, personality traits and Body-Cathexis, are intimately bound and play a major role in the psychological dynamics among adolescents. Schilder expresses the relationships between personality and Body-Image when he points out that:

Bodies are after all not isolated entities. The body and the body-image are always the body and the body-image of a personality which expresses itself in the body. The body-image is never an isolated part of our existence but is a part of every experience. The human personality is a personality with a body which expresses itself in the body-image and only on the basis of the understanding of the body-image can we understand the personality fully.¹⁵

Various personality theorists have indicated the intimate ties between personality and Body-Image. Freud placed great emphasis on Body-Image, both explicitly and implicitly. Body-Image was, for him, another means of describing how the initially undifferentiated organism develops an organizational structure. Freud saw the Body-Image as fundamental to the development of an ego. In his book, The Ego and the Id, he states, "The ego is first and foremost a body ego; it is not merely a surface entity but it is itself the projection of a surface."¹⁶ The authorized Translator of this work (Joan Riviere) appended the following note in clarification of Freud's statement: "that is, the ego is ultimately derived from bodily sensations, chiefly from those springing from the

¹⁵Paul Schilder, "Image and Appearance of the Human Body", Psyche Monog, No. 4, Kegan, Paul, 1935.

¹⁶Sigmund Freud, The Ego and the Id, (London: Hogarth Press, Ltd., 1927), p. 31.

surface of the body. It may thus be regarded as a mental projection of the surface of the body. . . . "

Adler was not explicitly concerned with Body-Image but many of his descriptions of personality dynamics are rich with implicit Body-Image references. His theory is that when an individual perceives an aspect of his body as inferior he generalizes his inferiority to his total concept of himself.¹⁷ Relating Body-Image to physical activities Schilder¹⁸ indicates that the individual alters his picture of himself with each new posture and shift in stance. The individual perceives his body differently as patterns of muscle tones vary. Situations which set up unusual patterns of tones (e.g., gymnastics) may stimulate feelings of body strangeness. There is also a varying pattern of stimulation of the skin surface which effects the perception of one's body.

The Body-Image is an integral part of the self concept. In our society, and particularly among adolescents, the self-ideal includes values and ideals which pertain to the appearance and function of the body.

The public self which a person constructs

¹⁷ Alfred Adler, Problems of Neurosis (New York: Cosmopolitan Book, 1930).

¹⁸ Paul Schilder, The Image and Appearance of the Human Body (New York: John Wiley and Sons, Inc., 1950).

includes not only beliefs which the individual wants others to affirm with respect to his personality, they also include beliefs the person wants others to hold concerning the appearance and function of his body.

The two areas under investigation seem particularly important to adolescents. Although personality traits of adolescents are established by the time they reach the end of high school, changes might occur through educational experiences in high school. The period is marked by great physical change and rapid growth of all parts of the body. Concomitant emotional upheavals are considered to have their repercussions and expression in the adolescent's attitude toward his body.

Extracurricular sport activities play a major role in promoting a wide range of educational experiences to students. It is natural, therefore, that physical educators, coaches and athletic directors should gain better understanding of psycho-physical concepts, and their integration in the behavior of young people.

The findings of this study may help coaches and physical educators realize the relationships that exist between Body-Cathexis and certain personality traits among students who participate in various levels of extracur-

¹⁹Jourard, op. cit., p. 125.

ricular sports activities in school and outside of school. Furthermore identifying the extent of such relationship among the various groups might suggest to educators and researchers in particular possible approaches to more comprehensive scientific investigation of the causes of such relationship. It is the author's hope that information revealed by this study may serve as a future guide for both professional physical educators and educational administrators in exploring and studying the role and contributions of extracurricular sports activities within the educational system.

CHAPTER II

REVIEW OF LITERATURE

The focus of this chapter does not present an exhaustive review of the literature; rather it attempts to identify the literature which is related to the present investigation and, also to present selected material which gave direction to the study.²⁰

The material of this chapter is organized into two major sections each dealing independently with a particular aspect of the study. The first section presents the concept of Body-Image and, particularly, the Body-Image as a factor in personality. Several studies that have utilized the same instruments employed in this study are cited. The second section reviews some of the relevant research that has been conducted pertaining to the personality of athletes. Because of the limited studies of personality traits on the high school level, college studies were also included. All the studies are grouped in three sub-sections. The first two present

²⁰ For those interested in additional literature see: (1) Seymour Fisher and Sidney E. Cleveland, Body Image and Personality (New York: Dover Publication Inc., 1968) and (2) Paul Schilder, The Image and Appearance of the Human Body, (New York: John Wiley & Sons Inc., 1964).

studies conducted on the high school and college levels respectively dealing mainly with individuals who have participated in athletic activities and a corresponding group of non-participants, and studies pertaining more precisely to personality differences among athletes in given sports at various levels of performance.

Body-Image

The concept.--The concept of "Body-Image" or "Body-Scheme" was initially postulated within the framework of neurology in order to explain disorders of movement and sensation. Henry Head, a British neurologist, was responsible for the description and development of one of the first basic concepts of the Body-Image, as well as for the interpretation of its significance in the perception of body function.²¹ Head's neurological orientation led him to formulate a body-scheme composed of physiological dispositions organized in the sensorimotor cortex with no psychical equivalent.²²

Head's postural concept of the Body-Image was con-

²¹Lawrence Kolb, "Disturbances of the Body-Image", in Silvano Arieti (ed.) American Handbook of Psychiatry, (New York: Basic Books, Inc., 1959), p. 750.

²²Richard C. Oldfield and Oliver L. Zangwill, "Head's Concept of the Schema and its Application in Contemporary British Psychology", Brit. Journ. Psychol., 32:267-86, 1942, p. 267.

veyed in his statement

By means of perpetual alterations in position we are always building a model of ourselves, which constantly changes. Every new posture or movement is registered on this plastic schema and the activity of the cortex brings each fresh group of sensations evoked by altered posture into relation with it.²³

Taking a different but not contradictory view of Body-Image Schilder proposed a theory of the Body-Image which includes not only the individual's personal perceptions and sensations concerning the body, but in addition a sociological meaning for both the individual and the society. He indicated that "Image of the human body means the picture of one's body the individual forms in his mind. I mean, the way in which the body appears to him."²⁴

Schilder points out that he has used the term "image" rather than "schema" to emphasize the idea that the perception of the body is more than merely an integration of sensation. He states that ". . . although it has come through the senses, it is more than a sum of the perceptions

²³Henry Head, Studies in Neurology, (London: Hodder, Stroughton, and Oxford Press, 1920), vol. II:723.

²⁴Paul Schilder, "Localization of the Body-Image (Postural Model of the Body)," Research Publications of the Ass'n. of Nervous and Mental Diseases. 13:466, 1934.

and representations, it is a unit, it is a tri-dimensional organization of the human organism. It is based on physiological data, but these get their final synthesis by the personality."²⁵

Both Schilder and Head agree that: "The Body-Image is to be thought of not as something that is static, but in terms of a dynamic process that constantly repatterns itself under the continuous stream of influences exerted through the ever-varying afferent impressions and sensations."²⁶

In presenting a rather comprehensive overview of Body-Image literature, Critchley defined the concept by writing:

The expression Body-Image. . . refers to the mental idea which an individual possesses as to his own body and its physical and aesthetic attributes. . . . The Body-Image, be it realized, lives "on the fringe of awareness" and is by no means obtrusive in ordinary circumstances. It is, however, available and can be brought into consciousness as soon as the stream of attention voluntarily or involuntarily focuses upon it.²⁷

²⁵ Ibid.

²⁶ Josef Gerstmann, "Psychological and Phenomenological Aspects of Disorders of the Body-Image", Journ. Nerv. and Ment. Disease, 126:499-512, 1958, p. 500.

²⁷ Macdonald Critchley, "The Body Image in Neurology", Lancet, 1:335 and 337; 1950.

There is no agreement as to whether or not Body-Image is a phenomenon of the conscious or the unconscious. Or, if existing in both, there is no specification as to the conditions under which it is in one, or the other, or in both simultaneously. Head and Holmes²⁸ state that it is "more or less conscious." Gerstmann²⁹ argues that it exists "outside of central consciousness." Scott³⁰ calls it a "conscious or unconscious integration of sensations, etc." Critchley³¹ calls it a "mental idea," thereby indicating its relative accessibility to consciousness.

In a survey dealing with the development of the Body-Image concept Fisher and Cleveland stated that:

Body-image is a term which refers to the body as a psychological experience, and focuses on the individual's feelings and attitudes toward his body. It is concerned with the individual's subjective experiences with his body and the manner in which he has

²⁸Henry Head and Gordon Holmes, "Sensory Disturbances from Cerebral Lesions". Brain, 1911, 34:102-127.

²⁹Josef Gerstmann, "Problem of Imperception of Disease and of Impaired Body Territories with Organic Lesions, Relation to Body Scheme and its Disorders." Arch. Neurol. Psychiat. 1942, 48:890-913.

³⁰W. C. M. Scott, "The 'Body Scheme' in Psychotherapy." Brit. J. Med. Psychol., 1949, 22:139-150.

³¹Critchley, op. cit., p. 335-340.

organized these experiences The Body-Image is literally an image of his body which the individual has evolved through experience.³²

The authors indicate, however, that "Body-Image" is apparently still "a loose, generalized term with very few specific connotations."³³

Wittreich and Grace defined the concept in the following manner:

. . . . In many situations the major component of the prediction about the self is what has commonly been termed the 'Body-Image' or 'body-scheme'. We can therefore define the Body-Image as 'a set of probably behavior or expectancies of an individual, specifically referred to his body, and inferred from his past and present behaviors.' Hence, in every percept, or in every act, the individual is making some prediction as to what his body can or will do.³⁴

Kyle has summarized the trends in investigations of the Body-Image concept as he found them in the extensive treatments of the subject by Fisher and Cleveland.³⁵

³²Fisher and Cleveland, (1958) op. cit., p. 111.

³³Ibid., p. XI.

³⁴Warren J. Wittreich and Marea Grace, "Body-Image Development", Progress Report to the Office of Naval Research, Bethesda, Maryland, 1955, p. 6.

³⁵David Kyle, "Relation of Performance in Drawing the Human Figure to Form Perception and Reading Achievement." (Unpublished Ph.D. Thesis, Human Development Education Dept. University of Maryland, 1961), p. 18.

These trends are briefly restated below:

1. Some evidences suggest that the Body-Image schema functions as a reference frame which influences a person's perception and agility to accomplish given tasks.
2. Body-Image is usually presented as a psychological variable developing slowly over time through learning processes in which the individual experiences his body in many situations. It is by many authorities considered the center of the ego structure.
3. Several theorists believe the Body-Image is a model against which the individual compares his perceptions. Anatomically this model is linked with the parietal area of the brain.
4. Body-Image distortions are wide in range including feelings of loss of body boundaries, depersonalization, unrealistic qualities, and confusion regarding laterality.
5. When an individual suffers radical change or damage to his body, he resists acknowledgment of this actuality. However, when this change is incorporated into the Body-Image schema the change is often shown by great sensitivity to the changed area.
6. The Body-Image can be a force in fixing the type of body inability when body malfunction is an expression of some psychological stress.
7. The instruments which have been incorporated in studies of Body-Image are numerous.

Most of the recent work that is relevant to the problem of the present study operates under a definition of the Body-Image that is oriented along lines similar to those proposed by Schilder. "The emphasis is placed upon the cultural or social value of the body and the implications in the perception of the body for the indi-

vidual's interpretation of experience."³⁶

The body and Body-Image as a factor in personality.--

In 1927, the importance of the concept of Body-Image for psychiatry and psychology was highly recognized when Freud stated that "the ego is first and foremost a body ego."³⁷ His translator Riviere, added that "the ego . . . may thus be regarded as a mental projection of the surface of the body."³⁸ Freud's emphasis upon the various parts and orifices of the body as foci of libidinal striving serves to further illustrate his conception of the body as a significant factor in psychological development.

Along similar psychoanalytic lines, Linn states:

Although a complex of psychic functions subsumed under the term ego, the Body-Image concept as elaborated by Schilder is certainly a basic part of that complex, so that studies concerning the early development of the ego are sure to shed light on the formation of the Body-Image, and conversely, information concerning the origin of the Body-Image must contribute to our understanding of the ego.³⁹

Murphy and Schilder are reported by Katcher and Levin

³⁶Kolb, op. cit., p. 751.

³⁷Freud, op. cit., p. 31.

³⁸Ibid.

³⁹Louis Linn, "Some Developmental Aspects of the Body-Image," Internat. Journ. Psychoanal., 36:36-42, 1955, p. 36.

to place considerable significance on the part Body-Image plays in ego and self-functions.⁴⁰ In a majority of the personality theories which the latter two discuss, the personal differentiation of the body surface from the rest of the environment is assumed to be the first stage in the formation of the ego.

Bonniwell⁴¹ in reviewing the psychoanalytic literature as reported in Murphy's Personality⁴² indicated that:

. . . psychoanalysts attribute the differential personality development of boys and girls to anatomical differences they indicate by their fantasies about the origins of bodily characteristics. It is possible, they feel, that these reactions and fantasies do result in different Body-Images for different boys and girls. They hold body size and the child's image of it relative to that of others may be of particular importance in determining early and life social interactions. Lastly, they hold that a child's role and status might vary depending upon his age, his perception of his role, and upon the persons and objects in his environment.

⁴⁰Allan Katcher and Max Levin, "Children's Conception of Body Size," Child Development, 1955, 26, p. 103.

⁴¹Hank Bonniwell, "The Effects of Participation in a Physical Developmental Clinic on the Body-Image of Neuromuscularly Disorganized Children." Master of Arts Thesis, U. of Maryland, 1962.

⁴²Gardner Murphy, Personality, (New York: Harper, 1947).

Johnson, attempting to check Secord and Jourard's⁴³ findings that attitude toward the body is a significant factor in one's attitude toward self, presents information designed to discover body attitude stability and investigates its relationship to somatic complaints. The outcome confirmed Secord and Jourard's findings.⁴⁴ From Johnson's statements in the summary, the author is led to believe that the rejection of one's self because of Body-Image problems of any kind would be evidenced by a low Body-Image and have ramifications which would require careful assistance by trained workers to repair or adjust. The acceptance of one's self regardless of one's handicaps is necessary if adjustment and positive views are to be achieved.

Commenting about the function of the body in the development of the self. Symonds states:

The body is particularly valued and becomes the core of later self value because it is the source of pleasure and pain and because it is the tool or the vehicle for achieving satisfaction. Not

⁴³Paul Secord and Sidney M. Jourard, "The Appraisal of Body Cathexis: Body Cathexis and the Self," Journ. Consult. Psychol., 17:343-47, 1953.

⁴⁴Laverne C. Johnson, "Body Cathexis as a Factor in Somatic Complaints," Journ. of Consult. Psychol., 1956, 20, p. 149.

only does satisfaction take place within the body but also the body, after skills of grasping, locomotion, and control of the eyes have been acquired, becomes a tool for attaining satisfaction.⁴⁵

Combs and Snygg stress the importance of the body factor in the development of a **conductive** perception of self. It is their contention that:

Since the body is the most constant aspect of our experience, it is not surprising that it should play a very large part in the defining of the phenomenal self. For most people, the smooth running body in good condition is likely to make the owner feel adequate, competent, and in control of situations. Poor physical condition, on the other hand, may result in the definition of the phenomenal self as in some fashion humiliated.⁴⁶

Investigating the relationship between Body-Image and self concept in subjects in competitive and non-competitive program of physical education, Read,⁴⁷ who utilized the same instrument used in this study found no significant differences between the two groups. On the

⁴⁵ Percival M. Symonds, The Ego and the Self, (New York: Appleton-Century-Crofts, Inc., 1951), p. 67.

⁴⁶ Arthur W. Combs and Donald Snygg, Individual Behavior, (New York: Harper & Brothers, 1949), p. 77.

⁴⁷ Donald A. Read, "The Influence of Competitive and Non-Competitive Programs of Physical Education on Body Image and Self Concept" (Unpublished Doctoral Dissertation, Boston University, Massachusetts, 1968).

other hand testing the same groups, the subjects within each group who were classified as constant winners had significantly higher positive Body Image and self concept than subjects that were constant losers. Read concluded from the findings that "physical education can be beneficial not only in a physical sense, but in a psychological sense as well."⁴⁸

In another study which utilized the same Body-Image instrument, Sloan⁴⁹ who investigated the relationship between Body-Image and motor abilities reports that a "college man who has a high positive perception of his body would be more likely to also possess a higher level of motor ability than would a man who held a negative attitude toward his body."⁵⁰

Commenting on the physical aspect of the self in development of the healthy personality Johnson and his associates have proposed that:

. . . when the physical base of the personality becomes reasonably solid, and large and small muscles are brought under control, the person's intellectual and emotional components have greater opportunity

⁴⁸Ibid., p. 50.

⁴⁹William W. Sloan, op. cit.

⁵⁰Ibid., p. 79.

for maturation and expression within the social context.⁵¹

Supporting the same point of view and its importance among adolescents Jersild indicates that:

The adolescent's physical abilities--his speed, strength, and capacity for bodily activity--have an important effect upon his approach to life, his conception of himself, and the role⁵² he plays in his relations with others.

He mentions elsewhere that, "In one way or another physical activities are important in helping the young person to find himself and to find himself in relationships with others."⁵³

In a discussion of physical activity as a psychiatric tool, Layman has indicated that the concept of organismic unity implies that the motor development of the individual is inseparable from his personality development.⁵⁴ On this topic she says:

⁵¹ Warren Johnson, "Some Psychological Aspects of Physical Rehabilitation: Toward an Organismic Theory," Journ. Assoc. for Phys. Ment. Rehabil., 16:165-68, 1962, p. 165.

⁵² Arthur T. Jersild, The Psychology of the Adolescent. (New York: MacMillan Company, 1957), p. 60.

⁵³ Ibid., p. 61.

⁵⁴ Emma Layman, "Physical Activity as a Psychiatric Adjunct," in Warren R. Johnson (ed.), Science and Medicine of Exercise and Sport, (New York: Harper & Brothers, 1960), p. 710.

If this concept has validity, it would be expected that in the psychiatric patient there would be motor dysfunction, and that a therapeutic approach through motor activities would result in psychological change.⁵⁵

Layman emphasizes, however, that although a positive relationship has been demonstrated between personality dynamics and physical factors (sports, recreational activities, motor abilities), ". . . there are indications that under some circumstances, with some groups, and for certain individuals, physical education and athletic activities seem to be unrelated to mental health, or may be detrimental to it."⁵⁶

Layman identifies several conditions that must be met in order that programs of exercise and sports make positive contributions to mental health and social adjustment:

The activities should be such as to encourage the development of organic health. . . . The activity program should be available to all, and not to just a small, select group of 'superior athletes'. . . . Activities should be geared to individual differences in ability and interests. . . . Physical education teachers and coaches

⁵⁵ Ibid.

⁵⁶ Emma Layman, "Contribution of Exercise and Sport to Mental Health," in Warren R. Johnson, (ed.) Science and Medicine of Exercise and Sports, (New York: Harper & Brothers, 1960), p. 587.

should avoid professional isolation and should work with parents and other teachers as well as with representatives of other disciplines in making the student's total experience a constant one which is oriented toward developing a discriminating system of values and toward meeting the unique, individualized emotional needs of each member of the group.⁵⁷

Summary:--The first part of this section presents information related to the interpretation of the Body-Image concept. Two major approaches were presented. The first approach, as represented by Head, is concerned with the neurological interpretation of the process whereby a "body-scheme", or schemata, is formulated. "The first function of the schemata is to provide permanent, yet continuously modified, physiological dispositions which, acting in cooperation with the immediate clues, can endow perception with the determinativeness of which we are in fact aware."⁵⁸

The second approach is more psychoanalytically oriented. In addition to the purely unconscious physiological representation of the location of the body and its parts in space and time, this approach takes into consideration the "value" and "social" functions that the body

⁵⁷ Ibid., p. 589.

⁵⁸ Oldfield and Zangwill, op. cit., p. 272.

may have in personality dynamics.

In the second part of this section various psychological aspects of the body and Body-Image role in personality were presented. Several contentions regarding the role of the body in the development of the psychoanalytic ego construct were presented. The relationship between Body-Image and the self concept illustrates the importance of proper body use in order to deal effectively with the surrounding environment. A few studies were cited regarding the importance of sound physical development for healthy personality.

Both parts reveal the importance of the individual's perception of his body and the vital part it plays in every day life.

Personality Traits of Athletes

Studies conducted on the high school level.--In 1934, Shannon initiated a series of studies concerning intelligence among college and high school students with different athletic involvements. The first of these studies in high school was conducted in cooperation with Snoddy.⁵⁹ 116 athletes and 166 non-athletes in their last two years

⁵⁹Marvin L. Snoddy and John R. Shannon, "Standardized Achievements of Athletes and Non-Athletes." Social Review, 47:610-612, 1939.

of high school were tested using three standardized achievement tests (Otis Self-Administering Test of Mental Ability, Higher Examination--Form D, and Myers-Ruch High School Progress Test--Form A). The two groups were found to be essentially equal in intelligence.

In 1940, Carter and Shannon⁶⁰ studied high school athletes and non-athletes from ten small high schools, and compared social adjustment and personality traits. Compared by the Symonds Adjustment Questionnaire and a score card on personality traits, the athletes excelled in the traits of leadership and in the more "social" items, (social life of the school, other pupils, home, and family).

Biddulph,⁶¹ employing the California Test of Personality, compared the personal and social adjustment of high school boys of high athletic achievement with the adjustment of boys of low athletic achievement. He found that students ranking high in athletic achievement demonstrated a significantly greater degree of personal

⁶⁰Gerald C. Carter and John R. Shannon, "Adjustment and Personality Traits of Athletes and Non-Athletes", School Review, 48:127-138, Feb., 1940.

⁶¹Lowell G. Biddulph, "Athletic Achievement and the Personal and Social Adjustment of High School Boys", Research Quarterly, 25:1-7, March, 1954.

and social adjustment than did students ranking low in athletic achievement.

Merriman⁶² investigated the relationship of personality traits to motor ability. The California Psychological Inventory and the Phillips Jump Chin Run Test were administered to 808 high school boys. The subjects were classified as follows: upper and lower motor ability groups; athletes and non-athletes matched according to motor-ability scores; and participants in town sports, participants in individual sports, and participants in town-individual sports. The upper motor ability group scored significantly higher than the lower motor ability group on the measures of poise, ascendance, and self-assurance and on the measures of intellectual and interest modes. From the fact that few significant differences in personality traits were found when athletes and non-athletes were matched according to motor ability, the inference might be drawn that motor ability rather than participation in athletics is a potent factor in the development of personality traits.

Slusher,⁶³ in his study of high school athletes,

⁶²Burton J. Merriman, "Relationship of Personality Traits to Motor Ability", Research Quarterly, 31:163-173, May, 1960.

⁶³Howard S. Slusher, "Personality and Intelligence Characteristics of High School Athletes and Non-Athletes," Research Quarterly, 35:539-540, December, 1964.

compared the personality profiles of high school athletes and non-athletes as measured by the Minnesota Multiphasic Personality Inventory, and intelligence as measured by the Lorge-Thorndike Intelligence Test. Subjects for the study were 100 non-athletes and 400 athletes, including 100 baseball players, 100 basketball players, 100 football players, fifty swimmers, and fifty wrestlers. Slusher, in discussing the results of his study, found that on the intelligence and femininity scales all athletic groups scored significantly lower than the non-athletic group. Relative to hypochondriasis, which suggests abnormal concern for bodily functions, worry, and preoccupations with physical symptoms and somatic processes, all athletic groups, except swimmers, scored significantly higher than the non-athletic group.

Studies conducted on the college level.---In their early studies of athletes and non-athletes at the college level, Shannon and Eaton⁶⁴ were concerned with intelligence. They evaluated 619 students from Indiana State Teachers College. The athletes were all high school letter winners and the non-athletes were the non-letter winners. Using

⁶⁴Dorothy Eaton and John R. Shannon, "College Careers of Athletes and Non-Athletes", School Review, 42:356-361, 1934.

the standardized psychological entrance examination for freshmen the authors reported that students who had earned letters in high school were less intelligent than the non-athletes. The same study was conducted four years later by Shannon⁶⁵ using 355 subjects, but this time no significant difference was found in intelligence test scores.

In 1941 Sperling⁶⁶ explored the problem of personality adjustment and achievement in physical education activities in his unpublished Ph.D. dissertation. He tested 171 athletes on varsity teams, 138 athletes in intramurals, and 126 non-athletes at City College of New York. His tests were the Smith Human Behavior Inventory, and the Guilford Introversion-Extroversion scale; the Allport Ascendance-Submission Reaction Scale, and the Allport-Vernon Study of Values. The findings of Sperling's study showed a statistically significant difference in the personality patterns of the varsity and intramural groups. It was found that in the personality adjustment scores, ascendance and extroversion, the

⁶⁵John R. Shannon, "Scores in English of High School Athletes and Non-Athletes", School Review, 46:128-130, 1938.

⁶⁶Abraham P. Sperling, "The Relationship Between Personality Adjustment and Achievement in Physical Education Activities", Research Quarterly, 13:351, 363, 1942.

varsity and intramural groups proved to be reliably superior to the non-athletic group. In attitude, the athlete group proved to be more liberal minded, but the differences among the various groups were not statistically significant.

In interests or motivational values the varsity and intramural groups were shown to be more significantly motivated by a desire for power and to a lesser extent by a social love for people. The non-athletic group was indicated to be more aesthetic and theoretically minded.⁶⁷

There were no significant personality trait differences between the varsity and intramural groups examined in this study.

Sperling's study revealed small and consistent, but not statistically significant, personality trait differences between participants of varsity individual sports and varsity group sports. The differences indicated that the individual sport groups were inclined in the same direction as the non-athlete group.

In order to ascertain why some individuals prefer or respond to certain types of activities while others may be reached by activities of quite different types,

⁶⁷ Ibid.

Flanagan⁶⁸ administered a personality inventory to six groups of male college students who were taking activity courses on a voluntary basis. Since there was no selective influence other than the free choice of the subjects in determining what physical activities they participated in, Flanagan concluded that groups who spontaneously select one physical activity course in preference to another demonstrate that personality is a factor in making the selection.

The Minnesota Multiphasic Personality Inventory was used by Booth⁶⁹ in studying personality traits of athletes. He found that the varsity athletes and the upper-class non-athletes scored significantly higher than the freshmen athletes and non-athletes on the Dominance item. It is of interest to note that there were no significant differences between the mean score of any MMPI variable for the freshmen participants in individual and team sports. Even though the MMPI is generally considered a test for abnormality, the study determined that differences in personality do exist between athletes and

⁶⁸Lance Flanagan, "A Study of Some Personality Traits of Different Physical Activity Groups", Research Quarterly, 22:312-323, October, 1951.

⁶⁹E. G. Booth, Jr., "Personality Traits of Athletes as Measured by the MMPI", Research Quarterly, 29:127, May, 1958.

non-athletes.

Litchard⁷⁰ used the Edwards Personal Preference Schedule in comparing college varsity athletes who were letter winners, non-letter winners, and non-athletes. He found that there were significant differences between the letter winners, non-letter winners, and non-athletes in their performance on the EPPs. In general, his study indicated that the individuals likely to participate in intercollegiate athletics would tend to score high on the achievement variables. In view of the beliefs held about athletes, as Litchard points out, it was surprising to find that the non-letter winners scored higher than the letter winners on the dominance variable, which is associated with athletic success.

Lakie⁷¹ in doing a study of personality characteristics of athletes, had the opinion that one should generalize personality traits in any specific group at one institution. For his study, he administered an Attitude

⁷⁰Robert Litchard, "A Comparison of Scores on the EPPS of college Athletes and Non-Athletes," unpublished Master's thesis, Springfield College, Springfield, Massachusetts, 1961.

⁷¹William L. Lakie, "Personality Characteristics of Certain Groups of Intercollegiate Athletes," Research Quarterly, 33:566, December, 1962.

Inventory to 230 athletes from a state university, a private university, and two state colleges. The five scales selected were: (1) Complexity of Outlook, (2) Social Maturity, (3) Social Introversion, (4) Liberalism, and (5) Aggressive Activity. Analysis of variance revealed the following:

1. For all the sports groups, there were no differences on any of the five scales.
2. For all the school groups, a significant difference was found on the Social Maturity Scale.
3. At the private universities, the football players had a lower score on the social introversion scale than the trackmen.
4. At the state university, the tennis-golf group had a higher mean social maturity score than any other sports group.
5. The basketball players and wrestlers had a higher mean liberalism score than the tennis-golf group.
6. Football players at the private universities had a lower mean score on the social introversion scale than the football players at the state college.
7. The tennis-golf group at the state university had a higher mean social maturity score than the tennis-golf group in the state colleges.⁷²

Lakie stated that these differences may be the result of the program at each institution. Some institutions may place emphasis on the program, while others place

⁷²Ibid.

emphasis on the leadership.

Schendel⁷³ reported some very interesting results of a study undertaken at the University of Oregon. In an effort to identify the psychological characteristics of athletes and non-athletes he administered the California Psychological Inventory to participants and non-participants at three educational levels (grade nine, grade twelve, and juniors and seniors at the college level). Schendel, after administering the inventory, found that there were differences between the psychological traits of athletes and non-athletes at all educational levels tested.⁷⁴ At the ninth and twelfth grade levels, athletes were found to possess a higher degree of desirable traits than did non-participants. At the college level, however, the reverse was found to be true. College men who were non-participants in athletics were found to generally possess desirable personal-social psychological traits to a greater degree than did college athletes.⁷⁵ These results were certainly in direct op-

⁷³Jack Schendel, "Psychological Differences Between Athletes and Non-Participants in Athletics at Three Educational Levels", Research Quarterly, 36:52, March, 1965.

⁷⁴Ibid., p. 66.

⁷⁵Ibid.

position to much of the work previously cited in this review of literature.

Probably one of the latest studies of personality conducted at the college level was by Chipman⁷⁶ at Springfield College. Using two of the same instruments as this study, the Gordon Personal Profile and the Gordon Personal Inventory Chipman concluded that:

1. Differences in personality, as measured by the Gordon Personal Profile and the Gordon Personal Inventory, do exist between varsity participants and non-participants in intercollegiate athletics.
2. Differences in personality traits exist between varsity participants in team sports and varsity participants in individual sports.
3. In general, non-participants in intercollegiate athletics who major in areas other than physical education are more 'Original in Thinking' than varsity participants in team sports and non-participants who major in physical education. It also appears that varsity participants in individual sports are more 'Original in Thinking' than varsity participants in team sports.
4. With the exception of varsity wrestlers, varsity participants in team sports are generally more Sociable and ascendant than varsity participants in individual sports. Varsity participants in team sports were also found to be more sociable and Ascendant than non-participants in intercollegiate athletics.

⁷⁶Leroy P. Chipman, "A Comparison of Participants and Non-Participants in Intercollegiate Athletics With Respect to Selected Personality Traits", unpublished Doctoral Dissertation, Springfield College, Springfield, Mass., 1968.

Other studies of personality traits.---Behrman⁷⁷

in an attempt to determine if there were significant personality differences between swimmers and non-swimmers and to determine what relationship existed between personality traits and swimming progress of non-swimmers experiencing a common course of swimming instruction, found that there were significant personality trait differences between swimmers and non-swimmers and learners and non-learners. Behrman's results suggested that swimmers were more impulsive, sociable, hostile, and belligerent than non-swimmers and that non-swimmers who passed a course in swimming instruction were more emotionally stable and objective than those who failed.

Although dealing with different groups of athletes, Kroll and Bosco⁷⁸ have conducted somewhat similar studies. Kroll, in investigating the personality profiles of wrestlers, used three major criterion groups: superior, excellent, and average to below average. Using the Sixteen Personality Factor Test profiles, he found no significant differences between wrestlers classified according to different levels of achievement.

⁷⁷Robert M. Behrman, "Personality Differences Between Non-Swimmers and Swimmers", Research Quarterly, 38:164-167, May, 1967.

⁷⁸Walter Kroll, "Sixteen Personality Factor Profiles of Collegiate Wrestlers", Research Quarterly, 38:49-52, March, 1967.

Bosco,⁷⁹ on the other hand, utilizing the same test to measure the personality characteristics of champion gymnasts as opposed to normal college men, found the gymnasts to average significantly greater in brightness, calmness and maturity, conventionality and seriousness, confidence and unshakable demeanor, autism, experimentation, control and exactness. In discussing these results Bosco postulated that:

. . . individuals having the above personality characteristics tend to pursue gymnastics seriously and that gymnastics was the type of activity in which these personality traits could be readily expressed.⁸⁰

In a paper presented to the second International Congress of Sport Psychology in October, 1968 Kroll and Crenshaw⁸¹ reported a study in which they tested 387 athletes representing wide geographical areas and excellent quality levels of achievement using the Cattell Sixteen Personality Factor Questionnaire. The authors found significant profile differences among the four groups studied. Football players and wrestlers were

⁷⁹James Bosco, "The Physical and Personality Characteristics of Champion Gymnasts," unpublished Doctoral dissertation, University of Illinois, Urbana, Ill., 1962, pp. 144-145.

⁸⁰Ibid., p. 145.

⁸¹Kroll and Crenshaw, op. cit.

found to have similar personality profiles, with both groups demonstrating significant profile differences when compared with gymnasts and Karate participants.

Johnson et al.,⁸² using projective techniques to measure personality traits, found that champion athletes were readily distinguishable from the normal population. Champion athletes were found to possess extreme aggression, emotions lacking strict control, high and generalized anxiety, high level of intellectual aspiration and an exceptional feeling of self assurance.

LaPlace⁸³ conducted a study on professional baseball players and found that the dominant trait in the personality of major league players, as revealed by their profiles, was a strong drive which expresses itself as ambitiousness, aggressiveness, and vigorousness. His study also indicated that the ability to exercise self-discipline was prevalent among professional ball-players.

⁸²Warren R. Johnson, Daniel C. Hulten, and Granville B. Johnson, Jr., "Personality Traits of Some Champion Athletes as Measured by Two Projective Tests: Rorschach and H-T-P", Research Quarterly, 25:485, December, 1954.

⁸³John P. LaPlace, "Personality and Its Relation to Success in Professional Baseball", Research Quarterly, 25:313, October, 1954.

Ogilvie⁸⁴ compared Olympic male swimming medalists with freshmen swimmers at the Air Force Academy and found the Olympic swimmers to be more self-assertive, free thinking and self sufficient as measured by the Sixteen Personality Factor test. When he compared thirty-eight professional race drivers to sixty-seven amateur drivers, the former were found to be significantly more emotionally stable and exhibited higher leadership potential and creativity at the .01 level.

Summary.--It is evident from the literature cited in this section that there is no clear general agreement on the relationship between participation in sports and personality. One of the reasons for diverse views is most likely due to the variety of instruments used in various studies. Another possible reason for disagreement relates to the number and types of subjects used. The majority of the studies dealt with the relationship of personality traits to participation in physical education and athletics. Generally the studies reviewed have shown that there is scant evidence to support the view that participation in physical education and ath-

⁸⁴ Bruce C. Ogilvie, "The Personality of Male Athletes," Academy Papers, Tuscon, Arizona: The American Association of Health, Physical Education and Recreation, March, 1968.

letics produces desirable personality changes. It also suggested that there were distinguishable differences in personality traits between athletes and non-athletes and between participants in different types of sports.

This study differs from the reviewed studies in that it not only will provide additional information about personality traits, but it also will examine the differences of Body-Image among male senior high school students. In addition, a new dimension is presented by examining the relationship between personality traits and Body-Image.

CHAPTER III

RESEARCH PROCEDURE

Identification and Classification
of Subjects

The purpose of this chapter is to present the details of the research procedure. The subjects for this study were drawn from five schools in Western Massachusetts. In selecting the schools special effort was made to secure as many common factors as possible among the student population. The following factors are comparable in all five schools:

1. All are members of the Cooperative School Service Center* in the University of Massachusetts.
2. All schools are in the same geographical area and proximity to the University.
3. All schools are classified as AA schools by the Massachusetts State School Principals Association.
4. All schools participate in the same athletic conference.

Special consideration was given to the athletic

*An affiliation of 54 school districts in Western New England.

programs offered by each school. All are members of the same athletic conference and compete against one another.

For the purpose of this study only male senior high school students were included in the sample. Seniors were selected because the length of time of participation in varsity and intramural extracurricular sports activities is a fact which appears to be important in determining any relationship that might exist between the selected groups' personality traits and Body-Cathexis. Obviously participation by seniors provides opportunity for longer involvement in sports. Secondly, students at this age are usually in a more advanced stage of their physical, emotional, mental and social maturation than any other class in the high school.

The five participating schools were:

1. West Springfield High School
2. Holyoke High School
3. Chicopee Comprehensive High School
4. Chicopee High School
5. Westfield High School

An attempt was made to include as many of the senior male population as possible. The potential sample size was approximately 950 students; the actual number of subjects was determined by those in attendance during the day of measurement. This number totaled 750

subjects.

For purposes of testing the hypotheses specified in this study, that is, to explore any possibility that differences in personality traits and Body-Cathexis might exist among those students sampled who participate in varsity athletics, intramural extra-curricular sports activities and non-participants. The subjects were organized into six groups:

1. Varsity athletes participating in fall sports: football, soccer, and cross-country.
2. Varsity athletes participating in winter and spring sports: basketball, skiing, gymnastics, hockey, track, swimming, golf, tennis, badminton.
3. Intramural participants in fall sports: soccer, touch football, cross-country.
4. Intramural participants in winter and spring sports: basketball, gymnastics, swimming, track, golf, tennis, badminton.
5. Non-participants: students who do not participate in any organized extracurricular sports activities as school but who participate in sports activities outside of school.
6. Non-participants: students who do not participate in any organized extracurricular sports activities at school and who do not participate

in any sports activities outside of school.

Students who participated in more than one varsity sport were classified according to their participation in fall sports. The same holds true for intramural participants.

Selection of Instruments

One personal data form, two personality tests and one Body-Cathexis test were utilized in collecting data for this study.

Before selecting the instruments the investigator carefully reviewed all non-projective tests of character and personality listed in the Sixth Mental Measurement Yearbook.⁸⁵ Also surveyed were the personality tests utilized in studies which were reviewed for the purpose of this investigation. In addition, the literature concerning Body-Cathexis was carefully examined.

Personal Data Form.--The purpose of the Personal Data form was to obtain essential background personal information about each subject. Facts pertaining to varsity sports participation, intramural sport participation and non-participation were sought. The personal data

⁸⁵Oscar Krisen Buros, editor. The Sixth Mental Measurements Yearbook, (New Jersey: The Gryphon Press, 1965).

form secured detailed information as to the kind of sport and the degree and length of participation in each given sport. (See Appendix B).

Gordon Personal Profile.⁸⁶ --The Gordon Personal Profile was chosen because it provides a simply obtained measure of four traits of personality which in the judgement of the researcher are significant in the daily functioning of the normal person and which are readily interpretable. These traits of personality are: Ascendancy, Responsibility, Emotional Stability and Sociability.

The profile consists of eighteen sets of four descriptive phrases, each set being known as a "tetrad". Each of the four personality traits is represented by the descriptive phrases in each tetrad. Of the four phrases, two are of equally high preference value to the normal individual and the other two are of similar low preference value.

A forced choice technique is utilized in the test. "Through this . . . technique, individuals must make what, in effect, is a three level ranking within each set of four items. With the respondent not being able to respond favorably to all items, the Profile is thus

⁸⁶ Leonard V. Gordon, Manual 1963 Revision Gordon Personal Profile, (New York: Harcourt, Brace and World, Inc., 1963).

believed to be less susceptible to distortion by individuals who are motivated to make a good impression."⁸⁷

The forced-choice technique compels the subject to choose one of several statements.

. . . use of this technique rests upon certain assumptions with respect to self-perception and psychometric scaling that may be summarized as follows: in general if two items have the same average preference value or are equally complimentary from the point of view of a given group, a member of that group to whom one of the items is more applicable usually will tend to perceive that item as being the more complimentary. Thus, if an individual who is motivated to make only socially acceptable responses is forced to select one of the items as being most like himself, he will select the item that he perceives to be the more complimentary, which will tend to be the item that is more like himself. Conversely, when presented with two items that are equally uncomplimentary for the group and forced to select one least like himself, he will tend to perceive the item that is more like himself as the less uncomplimentary, and will thus tend to select the item that is least like himself as his "least" choice.

The Gordon Personal Profile measures four established personality traits. These traits were identified as a result of two separate factor analyses. "First, after a review of the factorial studies of personality, six

⁸⁷Ibid., p. 3.

⁸⁸Ibid., p. 11-12.

factors were hypothesized and items were written to describe behavior related to these six personality factors. After the individual items were subjected to factor analysis the four final factors were selected: Ascendancy, Responsibility, Emotional Stability and Sociability."⁸⁹

"The validity correlations are particularly high with peer rating of college students ranging from .47 in Responsibility to .73 in Emotional Stability, both of which are statistically significant at the .01 level. However, except for the peer rating, external validities rarely exceed .30 or .35."⁹⁰

Commenting in Buros on the instrument's validity, Dicken states "The validity of the Gordon Personal Profile seems as good as usually found in the better inventories of this type."⁹¹

"Reliability estimates based on several population samples and computed by several standard methods are satisfactorily high with an average reliability coefficient of around .80."⁹²

⁸⁹Ibid., p. 12.

⁹⁰Ibid., p. 14.

⁹¹Buros, op. cit., p. 231.

⁹²Ibid., p. 21.

High and low scores on each of the Gordon Profile Scales are interpreted as follows:

1. Ascendancy (A): Those individuals who are verbally ascendant, who adopt an active role in the group, who are self-assured and assertive in relationships with others, and who tend to make independent decisions, score high on this scale. Those who play a passive role in the group, who listen rather than talk, who lack self-confidence, who let others take the lead, and who tend to be overly dependent on others for advice, normally make low scores.
2. Responsibility (R): Individuals who are able to stick to any job assigned them, who are persevering and determined, and who can be relied on, score high on this scale. Individuals who are unable to stick to tasks that do not interest them, and who tend to be flighty or irresponsible, usually make low scores.
3. Emotional Stability (E): High scores on this Scale are generally made by individuals who are well-balanced, emotionally stable, and relatively free from anxieties and nervous tensions. Low scores are associated with excessive anxiety, hypersensitivity, nervousness, and low frustration tolerance. Generally, a very low score reflects poor emotional balance.
4. Sociability (S): High scores are made by individuals who like to be with and work with people, and who are gregarious and sociable. Low scores reflect a lack of gregariousness, a general restriction in social contacts, and in the extreme,⁹³ an actual avoidance of social relationships.

Summarizing the Gordon Personal Profile in the Sixth Mental Measurement Yearbook, Heibrun states:

. . . if there is interest in a short, convenient measure of a limited number of salient personality traits, the Gordon

⁹³Ibid., p. 3.

Personal Profile is about as good as you can do. It is carefully conceived, reliable, adequately normal, and has received at least suggestive validation.⁹⁴

Gordon Personal Inventory.⁹⁵ --The Gordon Personal Inventory follows a rationale and format similar to those of the Gordon Personal Profile. Both tests supplement each other. Based on factor studies and typical items, the four traits measured by the Gordon Personal Inventory are: Cautiousness, Original Thinking, Personal Relations and Vigor.

The Inventory consists of 20 sets of four descriptive phrases called tetrads. Each of the four descriptive phrases, in each tetrad, represents one of the four personality traits. As in the Profile, two of the phrases are considered to be of high preference value and the other two of similar low preference value. The administration and the use of the forced-choice technique is identical to that previously described in the description of the Gordon Personal Profile.

In developing the Inventory, four factors which were not already included in the Profile were tentatively selected by Gordon. These factors were then represented

⁹⁴Buros, op. cit., p. 232.

⁹⁵Leonard V. Gordon, Manual 1963 Revision Gordon Personal Inventory (New York: Harcourt, Brace and World, Inc., 1963), p. 3.

by two hundred and ten items and administered to a group of college students. When subjected to a factor analysis the four items were identified as Cautiousness, Original Thinking, Personal Relations, and Vigor.⁹⁶

"Validity data are not quite as extensive as for the Profile, and the external validity of the Inventory does not seem as well established by the data available. Most of the validity correlations do not rise above the .30's."⁹⁷ Commenting on the Inventory's validity Dicken in the Sixth Mental Measurement Yearbook states, "There is considerable evidence of validity although it is somewhat less satisfactory than for the Profile."⁹⁸

Reliabilities of the Scales range from .77 to .84.

High and low scores on each of the Gordon Personal Inventory scales are interpreted as follows:

1. Cautiousness (C): Individuals who are highly cautious, who consider matters very carefully before making decisions, and do not like to take chances or run risks, score high on this Scale. Those who are impulsive, act on the spur of the moment, make hurried or snap decisions, enjoy taking chances, and seek excitement, score low on this Scale.

⁹⁶Ibid., p. 10.

⁹⁷Ibid., p. 11-13.

⁹⁸Buros, op. cit., p. 228.

2. Original Thinking (O): High scoring individuals like to work on difficult problems, are intellectually curious, enjoy thought-provoking questions and discussions, and like to think about new ideas. Low scoring individuals dislike working on difficult or complicated problems, do not care about thought-provoking questions and discussions.
3. Personal Relations (P): High scores are made by those individuals who have great faith and trust in people, and are tolerant, patient, and understanding. Low scores reflect a lack of trust or confidence in people, and a tendency to be critical of others and to become annoyed or irritated by what others do.
4. Vigor (V): High scores on this Scale characterizes the individual who is vigorous and energetic, who likes to work and move rapidly, and who is able to accomplish more than the average person. Low scores are associated with low vitality or energy level, a preference for setting a slow pace, and a tendency to tire easily and to be below average⁹⁹ in terms of sheer output or productivity.

Summarizing the Inventory, Dicken concluded:

The Manual is of high quality. The Inventory seems generally as good a measure of traits of this type as other self-report devices which are available, although the external validities reported are frequently quite modest.¹⁰⁰

Both tests, the Gordon Personal Profile and the Gordon Personal Inventory, are easily administered and measure the traits that were considered critical in this investigation.

⁹⁹ Ibid., p. 3.

¹⁰⁰ Buros, op. cit., p. 228.

Body-Cathexis Test.¹⁰¹ --The Secord and Jourard instrument was selected for use in this study. (See Appendix A). The purpose of the test is to measure the individual's "degree of feeling of satisfaction or dissatisfaction with the various parts, attributes or processes of his body."¹⁰² The test is comprised of a listing of forty-six body parts, attributes and functions of the body. Each item is followed by the numbers one through five which are interpreted as representing:

1. Have a strong feeling and wish change could somehow be made
2. Don't like, but can put up with
3. Have no particular feelings one way or the other
4. Am satisfied
5. Consider myself fortunate¹⁰³

Regarding items that were included on the Body-Cathexis scale, the authors indicate:

Items which were difficult to understand, difficult for the subject to assign a meaningful rating, or which resulted in little

¹⁰¹Secord and Jourard, op. cit., p. 343-347.

¹⁰²Ibid., p. 343.

¹⁰³Ibid.

variability from subject to subject were generally eliminated, provided that they did not leave an important part of the body unrepresented. One exception . . . was allowed: organs pertaining to sexual or excretory functions were deliberately eliminated . . . because it was feared that their presence in the scale might give rise to an evasive attitude¹⁰⁴ which would transfer to other items.

Split-half test reliability was found to be .81¹⁰⁵ on a sample of 70 college males and 56 college females.

Administration of Tests

After preliminary arrangements were made with school authorities, the investigator administered to all subjects between period of October 13-25, 1969, the Gordon Personal Profile, the Gordon Personal Inventory, the Body-Cathexis Test and the Personal Data Form. This period was selected because it was the peak of the fall season for both the intramural program and competitive varsity athletics.

The instruments were administered at each school by the investigator in the following order:

1. The Personal Data Form
2. The Gordon Profile and Gordon Inventory. The

¹⁰⁴Ibid., p. 344.

¹⁰⁵Ibid., p. 347.

Profile was administered first as is recommended in the manual.¹⁰⁶

3. The Body-Cathexis Test.

All the instruments were paper and pencil tests. The administration of all tests took approximately 30-40 minutes. Upon completion, the tests and the Personal Data Form were collected by the investigator.

The testing in Chicopee Comprehensive High School and Westfield High School took place in a special period designated for this purpose. In the other three schools testing took place during the regularly scheduled physical education classes.

Before administering the tests the investigator explained the types of tests to be taken and directions concerning the instruments. Directions were read from a form prepared by the investigator to provide all subjects with the same explanation.

In administering the Gordon Personal Profile and the Gordon Personal Inventory to high school groups an explanation was given stating that there were no right or wrong answers; each person needed only to tell about himself. The examinee was asked to mark one item in

¹⁰⁶Gordon, op. cit., p. 4.

each tetrad as being most like himself and one item as being least like himself.

In administering the Body-Cathexis Test the subjects were instructed to indicate the strength and direction of feeling which they had concerning that part, attribute or function that the word described. For example:

Hands 1 2 3 4 5

If a subject had strong positive feelings about the part, function or attribute, he was instructed to encircle the number one. The instructions were graduated from this extreme through moderate positive feelings, ambivalence, moderate negative feelings, to the opposite extreme of strong negative feelings.

Final scores were qualified by adding the corresponding numbers encircled by the subjects. A low score indicated the subject was unsatisfied with the parts, attributes, and function of his body as they were.

In order to encourage the subjects to respect the seriousness and authenticity of the study, all subjects were assured of their anonymity.

Treatment of Data

The Gordon instruments were scored by IBM scoring machine, while the Body-Cathexis Test was scored by the

investigator. Following the scoring of all instruments, the test results were grouped and statistically treated in terms of the following three categories: (1) Comparison between each personality trait and the six participating subgroups utilizing two way analysis of variance for unequal cell sizes and the Newman-Keuls Multiple Comparisons Technique. (2) Comparison between Body-Cathexis and the participating groups utilizing two way analysis of variance for unequal cell sizes. (3) Correlation between personality traits and Body-Cathexis among each of the five participating subgroups utilizing the Pearson Product Moment. In order to test for significant difference of the correlation coefficient the Fisher's r to z Transformation Method and the Olkin Test were utilized. Details pertaining to statistical analysis are presented in the following chapter.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

The purpose of this chapter is to present the statistical techniques used in the analysis of the data and the results obtained from application of these techniques.

Before treating the data statistically, each subject was assigned to an appropriate group according to the nature of his athletic participation. Grouping of each individual was based on information obtained from the Personal Data Form (Appendix B).

Out of the total senior male enrollment of each of the five tested schools approximately 80% were tested. Forty tests were disqualified because of incompleteness and incorrect marking by students. The final tally of subjects and groups was:

1.	FV	-	137
2.	WSV	-	146
3.	FI	-	14
4.	WSI	-	51
5.	NPOSP	-	87
6.	NPOSN	-	269

n = 704

Four distinct statistical operations were applied in the treatment of the data. Operations one and two were performed to test the null hypotheses one, two, three, four, five and six in Chapter I. The first operation applied was a two way analysis of

variance for unequal cell size for each of the eight personality traits and the Body-Cathexis. The purpose of utilizing this procedure was to determine whether or not there were overall significant differences among the varsity athletes, intramural participants and the non-participants and to test the degree of interaction among the six subgroups. Wert, Neidt and Ahmann¹⁰⁷ stated that "The analysis of variance has been designed to provide an efficient test of the significance of the differences between two or more groups simultaneously."

The second operation applied was the multiple comparisons technique known as the Newman-Keuls Method.¹⁰⁸ This technique was utilized in order to probe into the nature of the differences between treatment means (specified groups) following a significant overall F test. By this procedure, significant differences between groups and combinations of groups may be revealed as well as those pairs of groups which do not have significant differences.

The third and fourth operations were performed to

¹⁰⁷ James E. Wert, Charles O. Neidt, and J. Stanley Ahmann, Statistical Methods in Educational and Psychological Research, (New York: Appleton-Century-Crofts, 1954), p. 172.

¹⁰⁸ Roger E. Kirk, Experimental Design Procedures for the Behavioral Science, (Belmont, California: Brooks/Cole Publishing Company, 1968), p. 91.

test and ^{the} seventh null hypothesis specified in Chapter I. The third operation applied was the Pearson-Product Moment Method of correlation, followed by tests of significance for (coefficient of correlation). This operation helped to determine the degree of relationship between Body-Cathexis and the eight personality traits between and within each of the designated subgroups. The fourth operation applied the Fisher's r to z transformation method¹⁰⁹ and the Olkin Test for significant differences of correlation coefficient.¹¹⁰ Both these techniques were utilized in order to further test the significant differences between the correlation coefficient of the subgroups for the same personality trait, and in order to test the significant differences between the correlation coefficient within the subgroups for different personality traits. The data are presented in three separate sections.

Section One - Differences of Personality Traits

Tested in this section were the following null hypotheses:

¹⁰⁹George A. Ferguson, Statistical Analysis in Psychology and Education (New York: McGraw-Hill Inc., 1959), p. 153.

¹¹⁰Ingram Olkin, "Correlations Revisited", in Julian Stanley (ed.), Improving Experimental Design and Statistical Analysis (Chicago: Rand McNally Company, 1967), p. 102.

Hypothesis one: There are no differences ($p < .05$) in scores on the individual personality traits between individuals in the different treatment groups. Treatment group one includes the varsity athletes, treatment group two includes the intramural participants and treatment group three includes the non-participants.

Hypothesis two: There are no differences ($p < .05$) in scores on the individual personality traits between individuals in the different conditions. Condition one includes FV athletes, FI participants and NPOSP non-participants. Condition two includes WSV athletes, WSI participants and NPOSN non-participants.

Hypothesis three: Treatment groups do not interact with conditions in scores on the individual personality traits.

Data summaries obtained in the various tests are presented in Tables 1-19. Tables 1, 3, 5, 7, 9, 11, 13 and 15 reveal the mean scores of the six subgroups (FV, WSV, FI, WSI, NPOSP and NPOSN) for each of the eight personality traits. In addition, a treatment mean for each of the three treatment groups (varsity athletes, intramural participants and non-participants) is presented. In calculating the overall treatment mean for the three treatment groups consideration was given to the unequal frequency between condition one and two within each of the three treatment groups.

Tables 2, 4, 6, 8, 10, 12, 14 and 16 present a summary of the analysis of variance tests of mean scores. Scores are presented separately for each of the eight personality traits. Tables 17, 18 and 19 reveal the results of the application of the Newman-Keuls Multiple Comparisons Technique, for those traits for which an overall

Table 1
Cell Mean Scores on Personality Trait
Ascendancy

	TREATMENT		
	Varsity Athletes	Intramural Participants	Non-Participants
<u>Condition</u>	<u>FV N=137</u>	<u>FI N=14</u>	<u>NPOSP N=87</u>
1	21.06	20.00	19.91
	<u>WSV N=146</u>	<u>WSI N=51</u>	<u>NPOSN N=269</u>
2	21.34	20.98	18.95
<u>Treatment</u>			
<u>Mean</u>	21.22	20.77	19.20

Table 2
Two Way Analysis of Variance of Personality Trait
Ascendancy

Source	SS	df	MS	F	p
Treatment ^a	426.94	2	213.47	7.33	<.01
Condition ^b	.81	1	.81	.03	>.50
Treatment X Condition	70.37	2	35.18	1.29	>.25
Error	20329.03	698	29.12		

a 1 - Varsity athletes; 2 - Intramural participants;
3 - Non-participants.

b 1 - Fall varsity; Fall intramural; Non-participants
who participate in outside of school sports activities.
2 - Winter and spring varsity, Winter and spring intra-
mural, Non-athletes who do not participate in outside
of school sports activities.

Table 3
Cell Mean Scores on Personality Trait
Responsibility

	TREATMENT		
	Varsity Athletes	Intramural Participants	Non-Participants
<u>Condition</u>	<u>FV N=137</u>	<u>FI N=14</u>	<u>NPOSP N=87</u>
1	21.30	24.42	22.00
	<u>WSV N=146</u>	<u>WSI N=51</u>	<u>NPOSN N=269</u>
2	21.78	21.84	21.25
<u>Treatment Mean</u>	21.54	22.37	21.43

Table 4
Two Way Analysis of Variance of Personality Trait
Responsibility

Source	SS	df	MS	F	p
Treatment ^a	111.86	2	55.93	2.13	> .10
Condition ^b	61.10	1	61.10	2.32	> .05
Treatment X Condition	90.61	2	45.30	1.72	> .10
Error	18342.77	698	26.28		

a 1 - Varsity athletes; 2 - Intramural participants;
3 - Non-participants.

b 1 - Fall varsity; Fall intramural; Non-participants who participate in outside of school sports activities.
2 - Winter and spring varsity, Winter and spring intramural, Non-athletes who do not participate in outside of school sports activities.

Table 5
Cell Mean Scores on Personality Trait
Emotional Stability

	TREATMENT		
	Varsity Athletes	Intramural Participants	Non-Participants
<u>Condition</u>	<u>FV N=137</u>	<u>FI N=14</u>	<u>NPOSP N=87</u>
1	21.31	22.86	23.21
	<u>WSV N=146</u>	<u>WSI N=51</u>	<u>NPOSN N=269</u>
2	21.91	22.60	22.11
<u>Treatment Mean</u>	21.63	22.67	22.40

Table 6
Two Way Analysis of Variance of Personality Trait
Emotional Stability

Source	SS	df	MS	F	p
Treatment ^a	9.90	2	4.95	.15	> .50
Condition ^b	.96	1	.96	.03	> .50
Treatment X Condition	152.27	2	76.13	2.32	< .10
Error	22433.30	698	32.14		

a 1 - Varsity athletes; 2 - Intramural participants;
3 - Non-participants.

b 1 - Fall varsity; Fall intramural; Non-participants who participate in outside of school sports activities.
2 - Winter and spring varsity, Winter and spring intramural, Non-athletes who do not participate in outside of school sports activities.

Table 7
Cell Mean Scores on Personality Trait
Sociability

	TREATMENT		
	Varsity Athletes	Intramural Participants	Non-Participants
<u>Condition</u>	<u>FV N=137</u>	<u>FI N=14</u>	<u>NPOSP N=87</u>
1	21.73	19.52	20.32
	<u>WSV N=146</u>	<u>WSI N=51</u>	<u>NPOSN N=269</u>
2	21.67	21.46	19.18
<u>Treatment Mean</u>	21.71	20.29	19.47

Table 8
Two Way Analysis of Variance of Personality Trait
Sociability

Source	SS	df	MS	F	p
Treatment ^a	376.61	2	188.33	5.09	< .01
Condition ^b	.05	1	.05	.002	> .50
Treatment X Condition	170.62	2	85.31	2.31	> .05
Error	25805.20	698	36.97		

a 1 - Varsity athletes; 2 - Intramural participants;
3 - Non-participants.

b 1 - Fall varsity; Fall intramural; Non-participants
who participate in outside of school sports activities.
2 - Winter and spring varsity, Winter and spring intra-
mural, Non-athletes who do not participate in outside
of school sports activities.

Table 9
Cell Mean Scores on Personality Trait
Cautiousness

	TREATMENT		
	Varsity Athletes	Intramural Participants	Non-Participants
<u>Condition</u>	<u>FV N=137</u>	<u>FI N=14</u>	<u>NPOSP N=87</u>
1	19.91	22.67	20.88
	<u>WSV N=146</u>	<u>WSI N=51</u>	<u>NPOSN N=269</u>
2	20.05	20.79	20.52
<u>Treatment Mean</u>	20.00	21.23	20.62

Table 10
Two Way Analysis of Variance of Personality Trait
Cautiousness

Source	SS	df	MS	F	p
Treatment ^a	154.86	2	77.43	2.32	> .05
Condition ^b	38.62	1	38.69	1.16	> .25
Treatment X Condition	42.34	2	21.17	.63	> .50
Error	23207.76	698	33.34		

a 1 - Varsity athletes; 2 - Intramural participants;
3 - Non-participants.

b 1 - Fall varsity; Fall intramural; Non-participants who participate in outside of school sports activities.
2 - Winter and spring varsity, Winter and spring intramural, Non-athletes who do not participate in outside of school sports activities.

Table 11
Cell Mean Scores on Personality Trait
Original Thinking

	TREATMENT		
	Varsity Athletes	Intramural Participants	Non-Participants
<u>Condition</u>	<u>FV N=137</u>	<u>FI N=14</u>	<u>NPOSP N=87</u>
1	22.33	24.93	22.88
	<u>WSV N=146</u>	<u>WSI N=51</u>	<u>NPOSN N=269</u>
2	22.97	23.61	22.31
<u>Treatment Mean</u>	22.68	23.92	22.46

Table 12
Two Way Analysis of Variance of Personality Trait
Original Thinking

Source	SS	df	MS	F	p
Treatment ^a	106.63	2	53.32	1.63	>.10
Condition ^b	11.90	1	11.90	.36	>.50
Treatment X Condition	65.30	2	32.65	1.00	>.25
Error	22757.70	698	32.60		

a 1 - Varsity athletes; 2 - Intramural participants;
3 - Non-participants.

b 1 - Fall varsity; Fall intramural; Non-participants who participate in outside of school sports activities.
2 - Winter and spring varsity, Winter and spring intramural, Non-athletes who do not participate in outside of school sports activities.

Table 13
Cell Mean Scores on Personality Trait
Personal Relations

	TREATMENT		
	Varsity Athletes	Intramural Participants	Non-Participants
<u>Condition</u>	<u>FV N=137</u>	<u>FI N=14</u>	<u>NPOSP N=87</u>
1	21.51	22.27	21.68
	<u>HSV N=146</u>	<u>WSI N=51</u>	<u>NPOSN N=269</u>
2	21.67	21.87	20.72
<u>Treatment Mean</u>	21.61	21.98	20.97

Table 14
Two Way Analysis of Variance of Personality Trait
Personal Relations

Source	SS	df	MS	F	p
Treatment ^a	40.06	2	20.03	.66	> .50
Condition ^b	11.99	1	11.99	.39	> .50
Treatment X Condition	42.44	2	21.22	.70	> .50
Error	21132.32	698	30.27		

a 1 - Varsity athletes; 2 - Intramural participants;
3 - Non-participants.

b 1 - Fall varsity; Fall intramural; Non-participants who participate in outside of school sports activities.
2 - Winter and spring varsity, Winter and spring intramural, Non-athletes who do not participate in outside of school sports activities.

Table 15
Cell Mean Scores on Personality Trait
Vigor

	TREATMENT		
	Varsity Athletes	Intramural Participants	Non-Participants
<u>Condition</u>	<u>FV N=137</u>	<u>FI N=14</u>	<u>NPOSP N=87</u>
1	23.16	26.34	23.12
	<u>WSV N=146</u>	<u>WSI N=51</u>	<u>NPOSN N=269</u>
2	22.98	23.14	21.50
<u>Treatment Mean</u>	23.08	23.92	21.91

Table 16
Two Way Analysis of Variance of Personality Trait
Vigor

Source	SS	df	MS	F	p
Treatment ^a	249.33	2	124.66	4.09	< .05
Condition ^b	215.98	1	215.98	7.09	< .01
Treatment X Condition	129.75	2	64.88	2.13	> .25
Error	21265.49	698	30.47		

- a 1 - Varsity athletes; 2 - Intramural participants;
3 - Non-participants.
- b 1 - Fall varsity; Fall intramural; Non-participants who participate in outside of school sports activities.
2 - Winter and spring varsity, Winter and spring intramural, Non-athletes who do not participate in outside of school sports activities.

significant F ratio was obtained namely; Ascendancy, Sociability and Vigor respectively.

The analysis of variance test revealed that three personality traits differed significantly among the treatment groups (varsity athletes, intramural participants and non-participants). The three personality traits were as follows: Ascendancy, significantly different at the .01 level of confidence (Table 2); Sociability, significantly different at the .01 level of confidence (Table 8); and Vigor, significantly different at the .05 level of confidence (Table 16); null hypothesis one is therefore rejected. Null Hypothesis two is also rejected. Analysis of variance test yielded significant differences at the .01 level of confidence between FV and WSV athletes, FI and WSI participants and between NPOSP and NPOSN non-participants for the personality trait Vigor (Table 16). Null Hypothesis three is accepted. Analysis of the data revealed no interaction between the treatment groups and conditions in scores on the individual personality traits.

To determine which pair of three treatment groups significantly differed from each other further examination revealed that for the personality trait Ascendancy (Table 17)

the differences between the varsity athletes and the non-participants were at the .01 level of confidence. The differences between the varsity athletes and the intramural participants were at the .05 level of confidence. Analysis of data also revealed that the personality trait Sociability differed significantly at the .01 level of confidence (Table 18) between the varsity athletes and the non-participants. For the personality trait Vigor, differences at the .01 level of confidence were observed only between the varsity athletes and the non-participants (Table 19).

Section Two - Differences of Body-Cathexis

Tested in this section were the following null hypotheses:

Hypothesis four: There are no differences ($p < .05$) in scores on the Body-Cathexis between individuals in the different treatment groups. Treatment group one includes the varsity athletes, treatment group two includes the intramural participants and treatment group three includes the non-participants.

Hypothesis five: There are no differences ($p < .05$) in scores on the Body-Cathexis between individuals in the different conditions. Condition one includes FV athletes, FI participants and NPOSP non-participants. Condition two includes WSV athletes, WSI participants and NPOSN non-participants.

Hypothesis six: Treatment groups do not interact with conditions in scores on the Body-Cathexis.

The data used to test the null hypotheses four, five and six were secured through the use of the "Body-Cathexis Test" (Appendix A). The results of the various

Table 17

Newman - Keuls Multiple Comparisons Technique
 Personality Trait - Ascendancy

	Varsity Athletes	Intramural Participants	Non-Participants
Order	1	2	3
Treatments in order of total means	c	b	a
Treatment total means	19.20	20.77	21.22

Table of Differences Between Treatment Means

	c	b	a
	-	1.57 ^b	2.02 ^a
		-	.45
			-
Truncated range r		2	3
Critical value for Q .99 (r, infinity)		3.64	4.12
Critical values for the difference between two means Q .99 (r, infinity) $\sqrt{\frac{MS \text{ error}}{N}}$		1.66	1.70
Critical value for Q .95 (r, infinity)		2.77	3.31
Critical Values for the difference between two means Q .95 (r, infinity) $\sqrt{\frac{MS \text{ error}}{N}}$		1.26	1.51

^aObserved difference between treatment means c and a, significant at the .01 level of confidence.

^bObserved difference between treatment means c and b, significant at the .05 level of confidence.

Table 18

Newman - Keuls Multiple Comparisons Technique
 Personality Trait - Sociability

	Varsity Athletes	Intramural Participants	Non-Participants
Order	1	2	3
Treatments in order of total means	c	b	a
Treatment total means	19.47	20.29	21.71

Table of Differences Between Treatment Means

	c	b	a
c	-	.82	2.24 ^a
b		-	.42
a			..
Truncated range r			2
Critical value for Q .99 (r, infinity)			3.64
Critical values for the difference between two means Q .99 (r, infinity) $\sqrt{\frac{MS}{N} \text{ error}}$			1.88
Critical value for Q .95 (r, infinity)			2.77
Critical Values for the difference between two means Q .95 (r, infinity) $\sqrt{\frac{MS}{N} \text{ error}}$			1.43

^aObserved difference between treatment means a and c significant at the .01 level of confidence.

Table 19

Newman - Keuls Multiple Comparisons Technique
 Personality Trait - Vigor

	Varsity Athletes	Intramural Participants	Non-Participants
Order	1	2	3
Treatments in order of total means	c	a	b
Treatment total means	21.91	23.08	23.92

Table of Differences Between Treatment Means

	c	a	b
c	-	1.17	2.01 ^a
a		-	.84
b			-
Truncated range r			2
Critical value for Q .99 (r, infinity)			3.64
Critical values for the difference between two means Q .99 (r, infinity)			1.73
			$\sqrt{\frac{MS}{N} \text{ error}}$
Critical value for Q .95 (r, infinity)			2.77
Critical Values for the difference between two means Q .95 (r, infinity)			1.31
			$\sqrt{\frac{MS}{N} \text{ error}}$

^aObserved difference between treatment means b and c, significant at the .01 level of confidence.

group performances are presented in Tables 20 and 21. Table 20 reveals the mean scores of the six subgroups and the tabulation of the treatment groups. In tabulating the treatment mean the same procedures were used as in the tabulation of the treatment mean for each of the personality traits.

Differences between the three treatment groups were found to be non-significant. Null hypothesis four is therefore accepted. Table 21 presents the summary of the analysis of variance test of mean scores. The analysis of variance revealed no significant differences between the six-groups tested. Null hypothesis five is therefore also accepted. Null hypothesis six is also accepted. Analysis of the data revealed no interaction between the treatment groups and conditions in scores on the Body-Cathexis.

Section Three - Correlation Between Body-Cathexis and Personality Traits

Tested in this section was the following null hypothesis:

Hypothesis seven: There is no significant correlation between Body-Cathexis and each individual personality trait among each of the following groups: (1) FV, WSV athletes, (2) FI, WSI participants, and (3) NPOSP, NPOSN non-participants ($p < .05$).

The data used to test the seventh null hypothesis consisted of the eight personality traits scores and the Body-Cathexis score for each subject. The results of each group were tabulated separately, and a correlation coefficient was obtained between the Body-Cathexis and

Table 20
Cell Mean Scores on Body-Cathexis

	TREATMENT		
	Varsity Athletes	Intramural Participants	Non-Participants
<u>Condition</u>	<u>FV N=137</u>	<u>FI N=14</u>	<u>NPOSP N=87</u>
1	167.56	169.32	170.77
	<u>WSV N=146</u>	<u>WSI N=51</u>	<u>NPOSN N=269</u>
2	167.34	171.04	166.16
<u>Treatment Mean</u>	167.44	170.66	167.26

Table 21
Two Way Analysis of Variance of
Body-Cathexis

Source	SS	df	MS	F	p
Treatment ^a	576.61	2	288.30	.40	>.25
Condition ^b	141.95	1	141.95	.19	>.25
Treatment X Condition	598.10	2	299.05	.41	>.25
Error	503472.39	698	723.38		

- a 1 - Varsity athletes; 2 - Intramural participants; 3 - Non-participants.
- b 1 - Fall varsity; Fall intramural; Non-participants who participate in outside of school sports activities. 2 - Winter and spring varsity, Winter and spring intramural, Non-athletes who do not participate in outside of school sports activities.

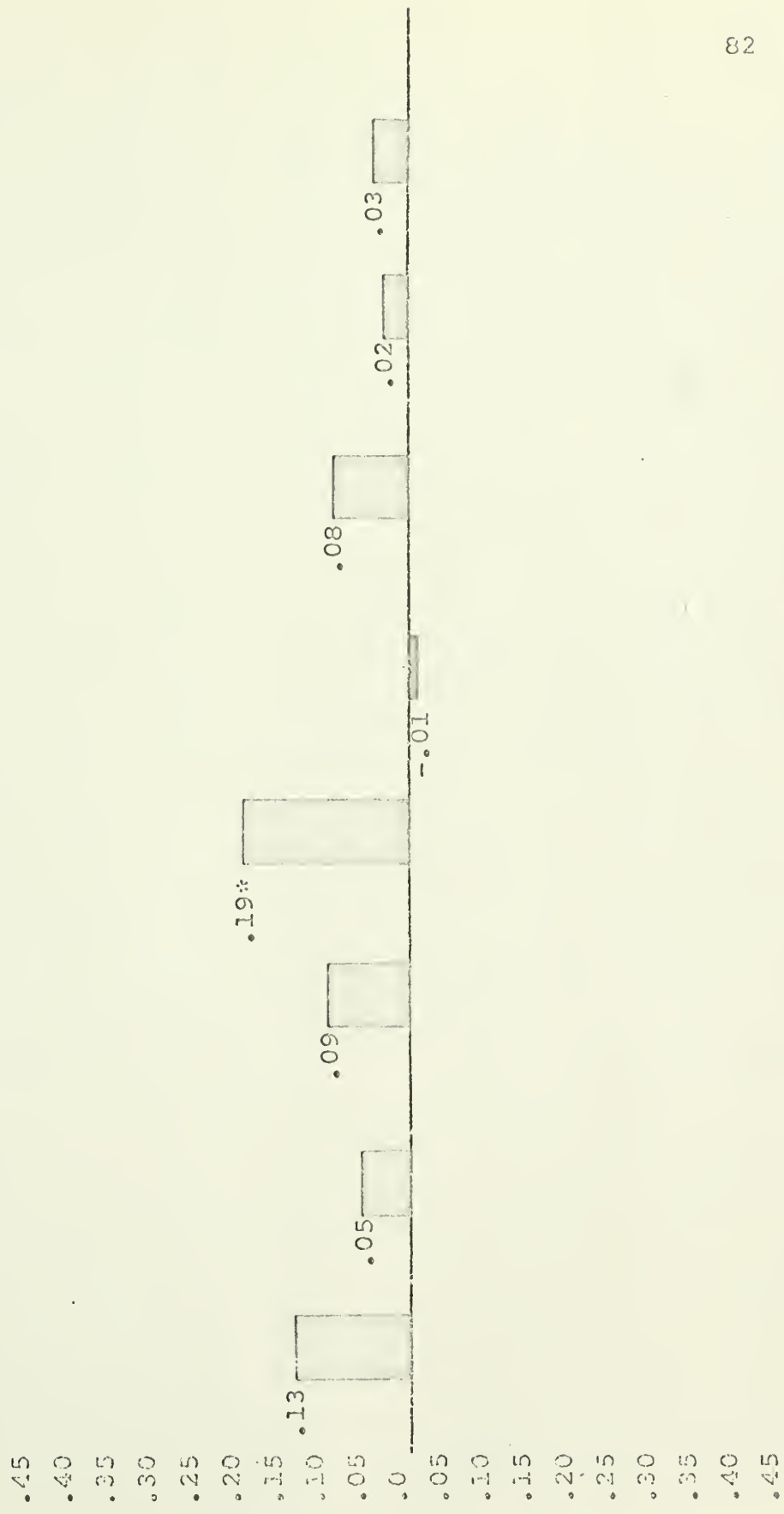
the eight personality traits for each treatment group. Because of the small number of subjects in the intramural fall participants group, both intramural groups have been combined as one group (thus reducing the number of subgroups from six to five). Such an insufficient number of subjects as in the fall intramural participants group ($n = 14$) would not have allowed any meaningful correlation.

Table 22 presents the correlation between Body-Cathexis and personality traits for the fall varsity athletes. Out of the eight personality traits all traits with the exception of Cautiousness, were positively correlated with Body-Cathexis, but only Sociability was found to be significant at the .05 level of confidence.

Table 23 presents the same correlation for varsity athletes in winter and spring sports. In this case all other traits were positively correlated with Body-Cathexis except Responsibility. The personality traits of Ascendancy and Vigor were both found to be correlated at the .05 level of confidence.

Table 24 presents the correlation obtained from the fall, winter and spring intramural participants group. All eight personality traits are positively correlated. Ascendancy and Sociability, however, differed significantly from zero at the .01 level of confidence, while Vigor was significant at the .05 level of confidence.

Table 22
 Fall Varsity Athletes
 CORRELATION BETWEEN BODY-CAMEXIS AND PERSONALITY TRAITS

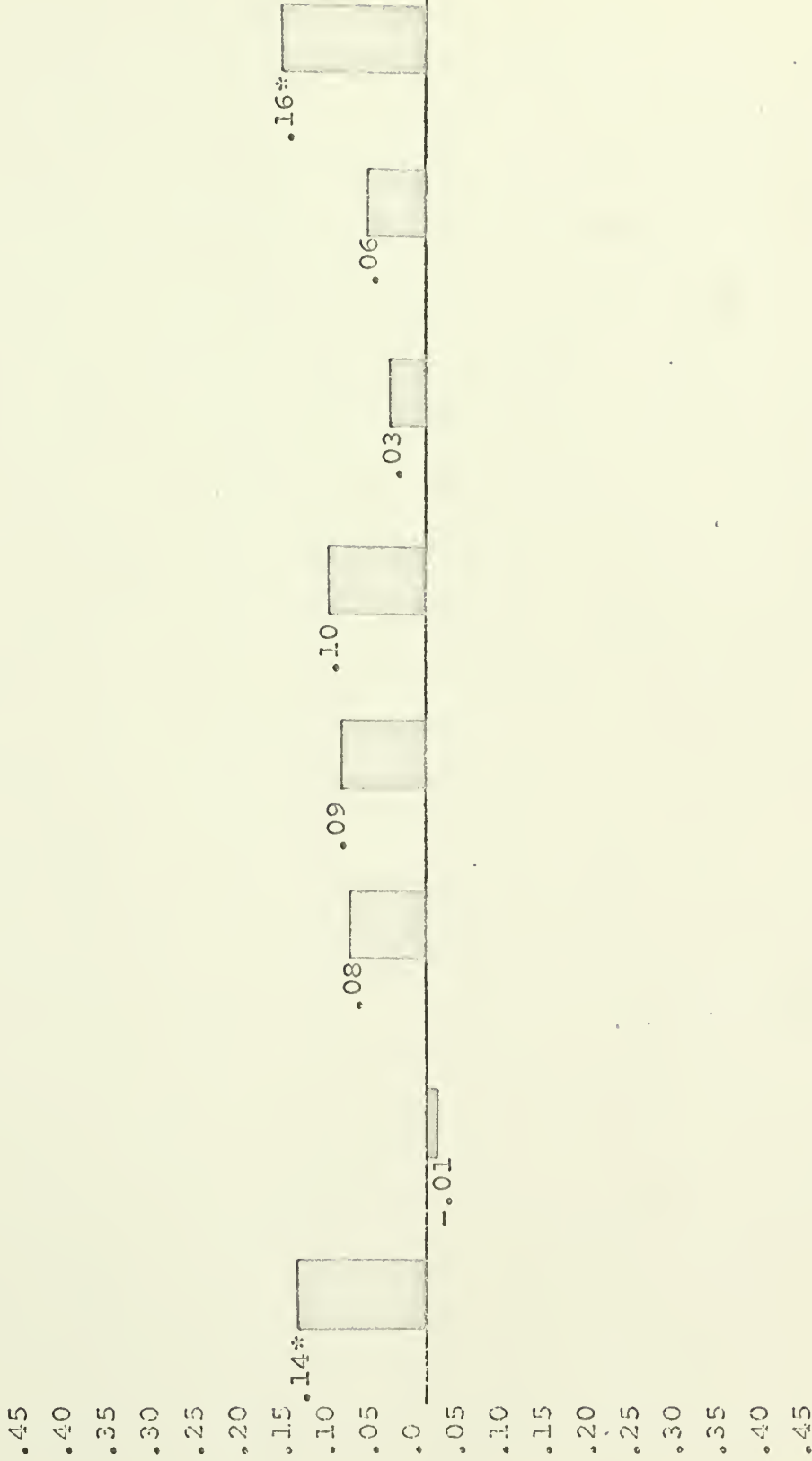


Ascendancy - Responsi- · Emotional · Socia- Cautious- Original Personal Vigor
 bility · Stability · bility · ness · Thinking · Relations
 *Significant difference from 0 at the .05 level of confidence
 **Significant difference from 0 at the .01 level of confidence

Table 23

Winter and Spring Varsity Athletes

CORRELATION BETWEEN BODY-CATHEXIS AND PERSONALITY TRAITS



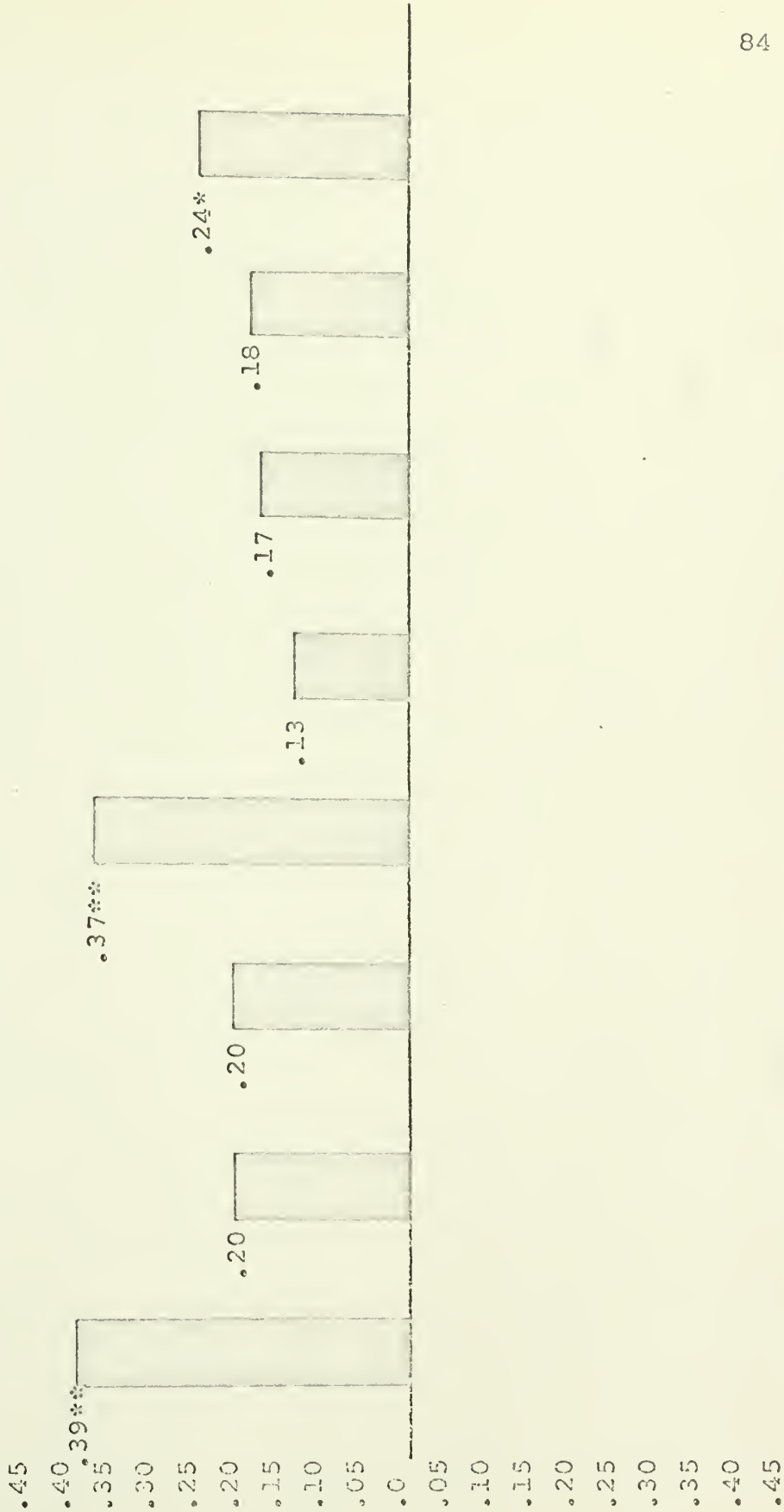
Ascendancy Responsibility Emotional Stability Sociability Cautiousness Original Thinking Personal Relations Vigor

*Significant difference from 0 at the .05 level of confidence

**Significant difference from 0 at the .01 level of confidence

Table 24

Intramural Participants
CORRELATION BETWEEN BODY-CATHERISMS AND PERSONALITY TRAITS



Ascendancy Responsibility Emotional Stability Sociability Cautiousness Original Thinking Personal Relations Vigor

*Significant difference from 0 at the .05 level of confidence
 **Significant difference from 0 at the .01 level of confidence

The correlation between personality traits and Body-Cathexis among the two groups of non-participants are presented in Tables 25 and 26.

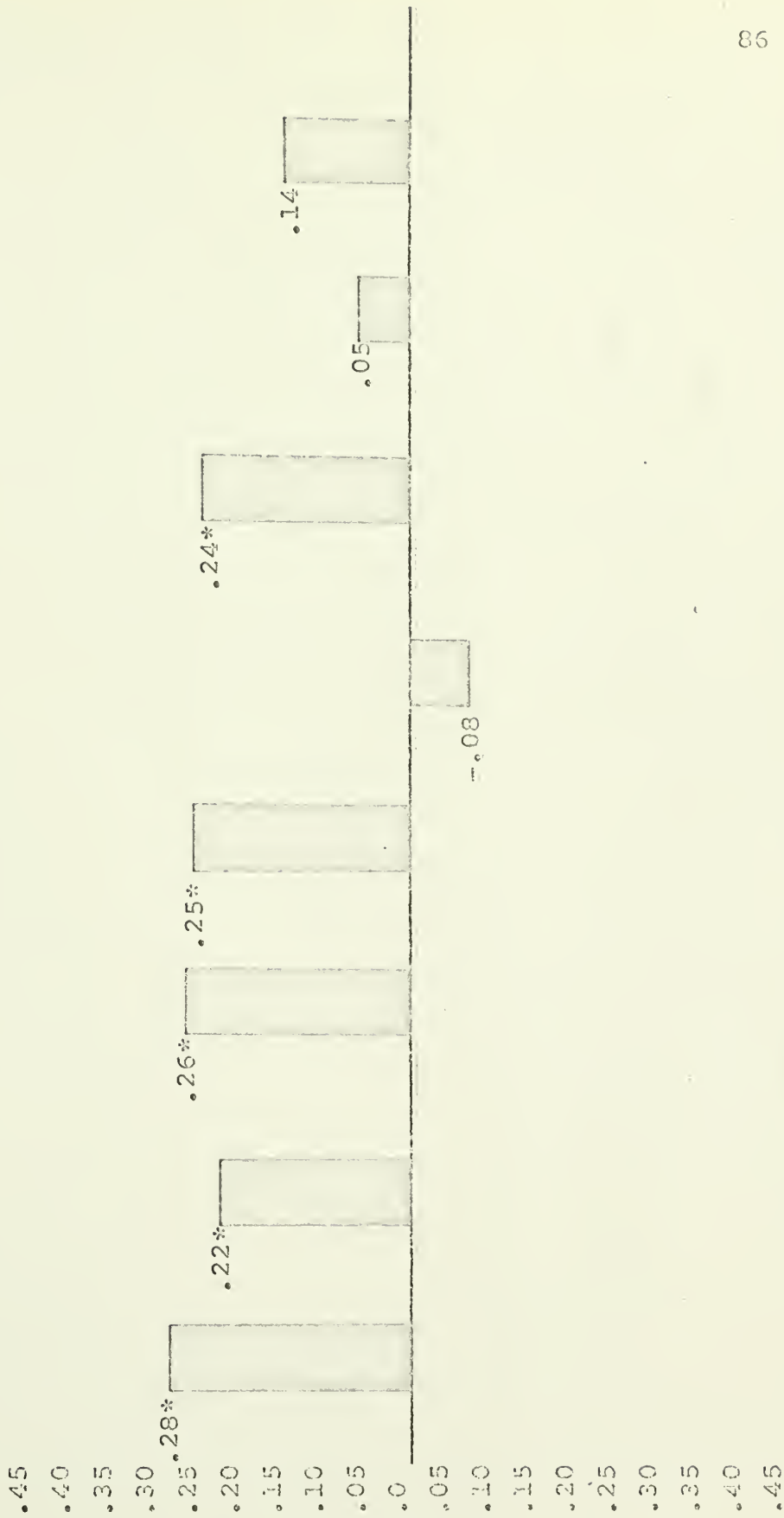
Table 25 includes non-participants who do not participate in any form of organized sports activities at school, but do engage in some form of sports activities outside of school. This group was found to have the largest number of personality traits significantly correlated with Body-Cathexis. Out of the eight personality traits, five traits were significantly different from zero at the .05 level of confidence. These traits were Ascendancy, Responsibility, Emotional Stability, Sociability and Original Thinking. Cautiousness was the only trait which was found to be negatively correlated.

For the non-athletes who participated neither in school nor in outside of school sports activities, correlation was positively significant only for Ascendancy and Sociability at the .05 level of confidence (Table 26). The personality trait Vigor was negatively correlated at the .01 level of confidence. Cautiousness was also found to be negatively correlated although not significantly.

The data obtained in this study reveal that significant correlations do exist between Body-Cathexis and specified individual personality traits among the five subgroups. Hypothesis seven therefore is rejected.

Table 25

Non-Participants Who Participate in Outside of School Sports Activities
CORRELATION BETWEEN BODY-CATEXIS AND PERSONALITY TRAITS

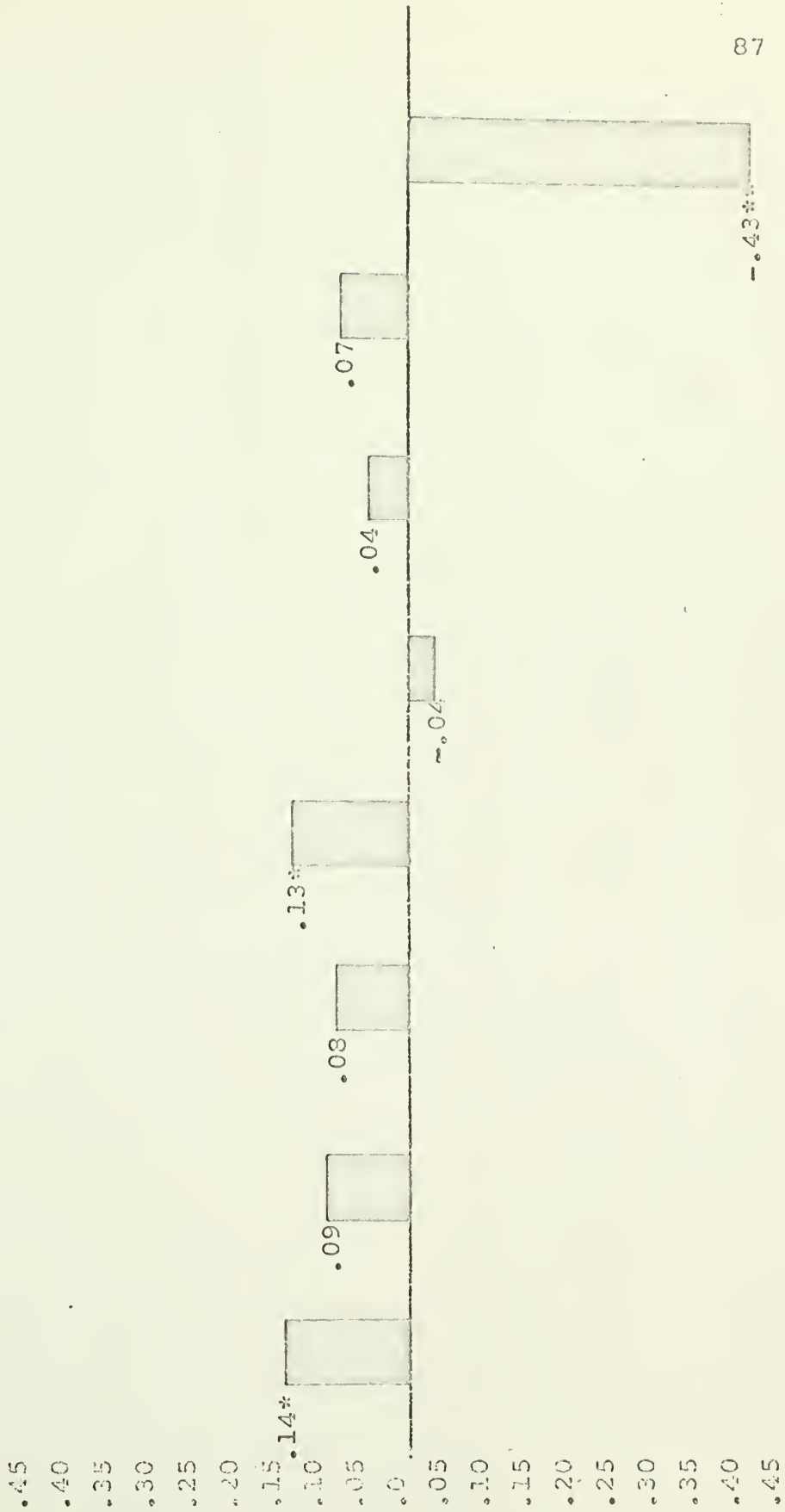


Ascendancy
Responsibility
Emotional Stability
Sociability
Cautiousness
Original Thinking
Personal Relations
Vigor

*Significant difference from 0 at the .05 level of confidence
**Significant difference from 0 at the .01 level of confidence

Table 26

Non-Participants Who Do Not Participate in Outside of School Sports Activities
CORRELATION BETWEEN BODY-CATEXIS AND PERSONALITY TRAITS



Ascendancy Responsibility Emotional Stability Socialability Cautiousness Original Thinking Personal Relations Vigor

*Significant difference from 0 at the .05 level of confidence
**Significant difference from 0 at the .01 level of confidence

Further analysis of the differences already presented revealed that significant differences between correlation coefficients of the subgroups for the same personality trait existed only for the personality trait Vigor. These differences were between the winter and spring varsity athletes and also between the intramural participants and non-participants who did not participate in any outside of school sports activities. Both significant differences were at the .01 level of confidence (Table 27).

Differences between the correlation coefficients within subgroups for different personality traits is presented in Table 28. The results revealed that significant differences existed only among the non-participants who did not take part in outside of school sports activities. These differences are between the personality trait Vigor and the personality traits Ascendancy and Sociability. Both differences are at the .01 level of confidence.

Table 27

Fisher's r to z Transformation
 Results of Tests of the Differences between Correlation Coefficients
 of Subgroups for the Same Personality Trait

Personality Trait	Subgroups	z score	p
Ascendancy	Non-participants who do not participate in outside of school sports activities	1.173	$>.05$
	Intramural participants	1.926	$>.05$
Ascendancy	Intramural participants who do not participate in outside of school sports activities	.074	$>.05$
	Intramural participants	1.826	$>.05$
Sociability	Winter and spring varsity athletes	5.982	$<.01$
	Intramural participants	4.999	$<.01$

Table 28

Olkin Test for Significant Differences of Correlation Coefficient
 Results of Tests of the Differences between
 Correlation Coefficient within Subgroups
 for Different Personality Trait

Subgroup	Personality traits within subgroups	z score	p
Winter and spring varsity athletes	Ascendancy Vigor	.200	>.05
Intramural participants	Ascendancy Vigor	.899	>.05
Non-participants who participate in outside of school sports activities	Ascendancy Responsibility	.398	>.05
Non-participants who do not participate in outside of school sports activities	Sociability Vigor	8.057	<.01
Non-participants who do not participate in outside of school sports activities	Ascendancy Vigor	7.943	<.01

CHAPTER V

FINDINGS

The major purpose of this chapter is to discuss the results and possible meanings and inferences suggested by the analysis of data. The chapter is organized in the same three sections as Chapter IV. The findings of each section are summarized in tables which are followed by discussion.

Section One - Differences of Personality Traits

The three null hypotheses in Section one were designed to determine if significant differences in personality traits existed among the three treatment groups and the two conditions and the interaction between them. A summary of the data pertaining to these three null hypotheses is presented in Table 29.

Before the discussion of the findings, each personality trait is identified with its definition as indicated by Gordon in the instructional manuals of the Gordon Personal Profile Test and the Gordon Personal Inventory Test.

Ascendancy: Those individuals who are verbally ascendant, who adopt an active role in the group, who are self-assured and assertive in relationships with others, and who tend to make independent decisions, score high on this scale. Those who play

Table 29

Summary of Findings - Section 1 - Differences of Personality Traits

Hypotheses	Ascendancy	Responsibility	Emotional Stability	Socialbility	Personality - Traits	Cautiousness	Original Thinking	Personal Relations	Vigor
1	Differences between varsity athletes, intramural participants and non-participants	Significant differences at the .01 level of confidence between varsity athletes and non-participants	Significant differences at the .05 level of confidence between varsity athletes and intramural participants	No significant differences	No significant differences	No significant differences	No significant differences	No significant differences	Significant differences at the .01 level of confidence between varsity athletes and non-participants
2	Differences between condition one FV, FI and NPOSP and two WSF, WSI and NPOSN	No significant differences	No significant differences	No significant differences	No significant differences	No significant differences	No significant differences	No significant differences	Significant differences at the .01 level of confidence
3	Interaction between treatment groups and conditions	No significant interaction	No significant interaction	No significant interaction	No significant interaction	No significant interaction	No significant interaction	No significant interaction	No significant interaction

a passive role in the group, who listen rather than talk, who lack self-confidence, who let others take the lead, and who tend to be overly dependent on others for advice, normally make low scores.¹¹¹

Results of the tests revealed that the personality trait Ascendancy showed significant differences at the .01 level of confidence between the varsity athletes and the non-participants, and significant differences at the .05 level of confidence between the varsity athletes and the intramural participants. The varsity athletes who are engaged in more structured and competitive forms of sports activities may, according to Gordon's interpretation, be regarded as assuming a more active role in the group. These individuals are more likely to be self assured and assertive in relationships with others and tend to make independent decisions more frequently. These qualities, according to Gordon, would be less strong among the intramural participants.

The non-participants who scored the lowest among the three groups can be characterized, according to Gordon, as a group that plays a more passive role in their interaction with others. They are more apt to listen rather than talk, to lack self confidence, to be less independent,

¹¹¹Gordon, Manual 1963 Revision Gordon Personal Profile, p. 3.

and to let others take the lead.

These results appear to be consistent with the contributions that participation in organized sports activities are usually purported to make to the positive development of self-assurance and self-confidence.

Ascendancy, however, is often related to leadership. After citing several studies that examined the relationship between Ascendancy and leadership, Guilford concluded that, "The evidence is by no means unanimous to the effect that Ascendancy is favorable for leading."¹¹² He continued by saying that, "It would seem, then, that a score of Ascendancy predicts best the type of leadership behavior that involves face to face interaction in group activities."¹¹³

Responsibility: Individuals who are able to stick to any job assigned them, who are persevering and determined, and who can be relied on, score high on this scale. Individuals who are unable to stick to tasks that do not interest them, and who tend to be flighty or irresponsible, usually make low scores.¹¹⁴

¹¹²Joy P. Guilford, Personality (New York: McGraw Hill Book Company, Inc., 1959), p. 419.

¹¹³Ibid., p. 420.

¹¹⁴Gordon, Manual 1963 Revision Gordon Personal Profile, p. 3.

Data obtained for this trait revealed no significant differences among the six subgroups and among the three treatment groups. This suggests that participation in sports activities does not necessarily have any influence on an individual's Responsibility. Perhaps it would be appropriate for individuals concerned with the effects of sports participation on personality to study this problem from the point of view of the phenomena associated with the sport experience per se rather than from the behavioral approach.

Emotional Stability: High scores on this Scale are generally made by individuals who are well-balanced, emotionally stable, and relatively free from anxieties and nervous tension. Low scores are associated with excessive anxiety, hypersensitivity, nervousness, and low frustration tolerance. Generally, a very low score reflects poor emotional balance.¹¹⁵

Results of the tests revealed no significant differences among the six subgroups and among the three treatment groups. It is interesting, however, to note that the F ratio in the interaction between the six subgroups, was significant at the .01 level of confidence. This interaction, although not reaching significance in this study, might nevertheless suggest that Emotional Stability

¹¹⁵Ibid., p. 3.

shows consistent effect across conditions for varsity athletes and intramural participants. However, inverse effects across conditions appear in the non-athletes group.

Sociability: High scores are made by individuals, who like to be with and work with people, and who are gregarious and sociable. Low scores reflect a lack of gregariousness, a general restriction in social contacts, and in the extreme, an actual avoidance of social relationships.¹¹⁶

Results of the tests revealed that significant differences at the .01 level of confidence existed between the varsity athletes and non-participants. These results may be accounted for, in part, by the fact that most of the varsity players tested were athletes who participated in team sports. Team sports like football, soccer, etc., rely on the cooperation, coordination, and communication among participants. The results, therefore, indicate that, according to Gordon the varsity athletes are likely to work more with people and to be more gregarious and sociable. The non-participants tend to be more restricted in social contacts, are lacking gregariousness, and might even avoid social relationships.

Cautiousness: Individuals who are highly cautious, who consider matters very carefully before making decisions, and do not like to take chances or run risks, score high on this Scale. Those who are impulsive,

¹¹⁶Ibid., p. 3.

act on the spur of the moment, make hurried or snap decisions, enjoy taking chances, and seek excitement, score low on this scale.¹¹⁷

Results of the tests revealed no significant differences among the six subgroups and among the three treatment groups. However, the F ratio of the three treatment groups was significant at the .10 level of confidence, the non-participants scoring the highest and the varsity athletes scoring the lowest. According to Gordon, cautiousness involves an aspect of decision making. Since it has never been shown that sports participation contributes significantly to the decision making process, one should not necessarily expect a higher score for athletes than non-participants.

Original Thinking: High scoring individuals like to work on difficult problems, are intellectually curious, enjoy thought-provoking questions and discussions, and like to think about new ideas. Low scoring individuals dislike working on difficult or complicated problems, do not care about thought-provoking questions and discussions.¹¹⁸

Results of the tests revealed no significant differences among the six subgroups and among the three treatment groups. This may be explained by the fact that this trait addresses itself mainly to the intellectual abilities

¹¹⁷Gordon, Manual 1963 Revision Gordon Personal Inventory, p. 3.

¹¹⁸Ibid., p. 3.

of the students, whereas the criteria used in the classification of the subjects was not of an intellectual nature but rather of a physical nature. Nevertheless, this finding gives some evidence to contradict the myth that athletes are some times less intellectually inclined than non-athletes.

Personal Relations: High scores are made by those individuals who have great faith and trust in people, and are tolerant, patient, and understanding. Low scores reflect a lack of trust or confidence in people, and a tendency to be critical of others and to become annoyed or irritated by what others do.¹¹⁹

Results of the tests revealed no significant differences among the six subgroups and among the three treatment groups. It seems quite logical to assume that this particular trait is found in people who participate in sports activities as well as people who do not participate in sports activities. It certainly seems to be a fundamental trait which is realized to a greater or lesser degree in any kind of physical or social activity that requires interaction between people.

Vigor: High scores on this scale characterizes the individual who is vigorous and energetic, who likes to work and move rapidly, and who is able to accomplish more than the average person. Low scores

¹¹⁹ Ibid., p. 3.

are associated with low vitality or energy level, a preference for setting a slow pace, and a tendency to tire easily and to be below average in terms of sheer output or productivity.¹²⁰

Results of the tests revealed that significant differences at the .05 level of confidence existed between varsity athletes and non-participants. In addition significant differences at the .01 level of confidence existed in each of the three treatment groups. These results constitute evidence that within the Gordon frame of reference, individuals who participate in sports activities are considered to be vigorous and energetic; they like to work and move rapidly, and are able to accomplish more than the average person. Vigor, as a trait in athletes, is undoubtedly related to the amount of physical energy demanded in the particular varsity competitive skill. Vigor may be inferred to be positively related to performance. That is, the individuals demonstrate a real willingness to go out to the field and be actively involved. This trait may also add to competence in performance. Yet the reverse may also occur; that is, individuals who do not demonstrate a high degree of vigor within their personality structure might be less inclined

¹²⁰Ibid., p. 3.

to be attracted to some kind of performance demanding physical skills.

In summarizing the findings of the first section it was revealed that the varsity athletes treatment groups were significantly different from the non-participants treatment group on the three personality traits of Ascendancy, Sociability and Vigor. These findings are consistent with other research. In 1958 McKinney,¹²¹ using the same instruments as in this study, tested college freshman women. The population was divided into three subgroups: high, middle, and low physical fitness. All threetraits--Ascendancy, Sociability and Vigor-- were found to be the only three traits significantly different between the high and the low physical fitness groups. Guilford and Zimmerman in examining relationships of various factors of personality found that, "The strongest relationships are with the factor A and S."¹²² (A--Ascendancy S--Sociability).

¹²¹Eva D. McKinney, "The relationships between certain factors of personality and selected components of physical fitness of College Freshman women." (unpublished Doctoral Dissertation, Boston University, Massachusetts, 1958).

¹²²Guilford, op. cit., p. 96.

Section Two - Differences of Body-Cathexis

The four null hypotheses in Section Two were designed to determine whether or not significant differences in Body-Cathexis existed among the six selected subgroups of the male senior high school students tested.

A summary of the findings for hypotheses four, five, and six are presented in Table 30.

As indicated in Table 30 results of the Body-Cathexis Test revealed no significant differences among the six subgroups and among the three treatment groups. These findings are in accord with the findings reported by Read¹²³ in which no significant differences of Body-Image were found among competitive athletes.

Section Three - Correlation Between Body-Cathexis and Personality Traits

The null hypothesis in Section Three was designed to determine the relationship between Body-Cathexis and the eight personality traits among the five selected subgroups. As noted earlier all intramural participants are considered as one subgroup for this part of the study.

Summary of the findings for the seventh null hypothesis is presented in Table 31. The discussion that

¹²³Read, op. cit.

Table 30
 Summary of Findings - Section 2 - Differences of Body-Cathexis

Hypotheses	Results
4	No significant differences between varsity athletes, athletes, intramural participants and non-participants
5	No significant differences between condition one FV, FI and NPOSP and condition two WSV, WSI and NPOSN
6	No significant interaction between treatment groups and conditions

Table 31
 Summary of Findings - Section 3 - Correlation between
 Body-Cathexis and Personality Traits

=====

HYPOTHESIS 7

Personality Traits	Fall Varsity Athletes N=137	Winter and Spring Varsity Athletes N=146	Intramural Participants N=65	Non-Participants who participate in outside of school sports activities N=87	Non-Participants who do not participate in outside of school sports activities N=269
Ascendancy	.13	.14*	.39**	.28*	.14*
Responsibility	.05	-.01	.20	.22*	.09
Emotional Stability	.09	.08	.20	.26*	.03
Sociability	.19*	.09	.37**	.25*	.13*
Cautiousness	-.01	.10	.13	-.09	-.04
Original Thinking	.08	.03	.17	.24*	.04
Personal Relations	.02	.06	.18	.05	.07
Vigor	.03	.16*	.24*	.14	-.43**

*Significantly different from 0 at the .05 level of confidence.

**Significantly different from 0 at the .01 level of confidence.

follows Table 31 is presented in two categories.

1. Correlation between each personality trait and Body-Cathexis across all of the five subgroups.---

The correlation between Body-Cathexis and the eight personality traits across the five subgroups revealed that the personality traits Cautiousness and Personal Relations were not significantly correlated with any of the five groups. The personality traits Responsibility, Emotional Stability, and Original Thinking were found to be correlated at the .05 level of confidence only with the non-participant groups who took part in outside of school sport's activities. Ascendancy was found to be correlated with the winter and spring fall athletes and the non-participants who participate and do not participate in outside of school sports activities, at the .05 level of confidence. Sociability was significantly correlated at the .05 level of confidence with the fall varsity athletes and the non-participants who participate and do not participate in outside of school sports activities. Both Ascendancy and Sociability were correlated at the .01 level of confidence with the intramural participants group.

Vigor was correlated with the winter and spring varsity athletes and the intramural participants at the .05 level of confidence, while a negative correlation

at the .01 level of confidence was obtained for the non-participants, those who do not engage in outside of school sports activities. Ascendancy, Sociability and Vigor revealed the highest correlation among the eight traits with Body-Cathexis. These were the same three traits that were found to be significantly different among the three treatment groups described in Section One of this study. Closer examination indicates that among the three traits highly correlated with Body-Cathexis Ascendancy, and Sociability are almost identical in obtained numerical value.

2. Correlation between Body-Cathexis and the eight personality traits within each group.---The largest number of significant correlations seem to exist in the groups categorized as the intramural participants and non-participants who do engage in outside of school sports activities. These two groups are almost identical with the exception of the low negative correlation of Cautiousness in the non-participants group.

The two varsity athletes groups also seem to be almost alike in relationship between all traits and Body-Cathexis with the exception of Ascendancy, Sociability and Vigor.

The non-participants who do not engage in outside of school sports activities were found to have a significant correlation between their Body-Image and their Ascendancy and Sociability traits at the .05 level of

confidence. Vigor was recorded as negatively correlated at the .01 level of confidence.

In summary the finding of this Section revealed that of the five groups, Body-Image correlated most with personality traits of intramural participants and non-participants who are engaged in outside of school sports activities. Also, there appear to be fundamental differences in the way in which athletes look and feel toward their bodies and the way which non-participants and intramural participants look and feel toward their bodies. There are also differences in the uses each group assigns to his body. A good illustration of differences that the body plays within the process of personality development is provided by Friedenberg¹²⁴ in his book "The Vanishing Adolescent". Friedenberg indicates that during adolescence the process of growth is the process of development of the ego, which means that in this stage of development the body is integrated into ones developmental process. If the body is not integrated, it can be used as a means of compensating for a lack of self esteem. For Fridenberg this situation is exemplified by the student Thomas the

¹²⁴Edgar Z. Friedenberg, The Vanishing Adolescent (Boston: Beacon Press, 1969).

athlete. "His body earns him all the satisfactions he gets: status, victory, recognition The worst thing he can imagine happening to him is that a relatively minor and separable part of his body might get broken. It seems to be really all he possesses. He exploits it, he takes good care of it, but it does not seem to have occurred to him that he could live in it himself."¹²⁵

Some similarities with Friedenberg's ideas can also be found in the results of this Section. The fact that a very low correlation between Body-Cathexis and personality traits existed among the varsity athletes might give a strong indication that for many athletes, who took part in this study, the body serves as a vehicle to achieve certain goals but in actuality the same athlete is alienated from his body. On the other hand, the non-participants who do not engage in any sports activities in school and outside of school may have some feelings of rejection toward their bodies, causes for this rejection suggests numerous areas for further investigation. The two groups, the non-participants who participate voluntarily in sport activities outside of school and the intramural participants seem to both feel more comfortable and have a positive attitude toward their bodies.

¹²⁵Ibid., p. 109.

CHAPTER VI

SUMMARY, CONCLUSIONS AND DISCUSSION

The purpose of this chapter is to present a brief summary of selected chapter sections followed by the conclusions and discussion. Included in the discussion are the implications and recommendations of the study.

Summary

The purpose of this study was to investigate relationships, if any, between specified personality traits and Body-Cathexis of male high school senior participants and non-participants in athletics.

Seniors who served as subjects for the investigation were classified into three groups.

- A. Varsity athletes categorized by (1) fall sports, (2) winter and spring sports.*
- B. Intramural participants categorized by (1) fall sports, (2) winter and spring sports.**
- C. Non-participants categorized by (1) students who do not participate in any organized extra-curricular sports activities at school but

*The initials FV and WSV in this document refer to Fall Varsity athletes and winter and spring varsity athletes respectively.

**The initials FI and WSI in this document refer to Fall Intramural participants and Winter and Spring Intramural participants respectively.

participate in sports activities outside school, (2) students who do not participate in any organized extracurricular sports activities at school and do not participate in any sports activities outside school.***

Specifically the investigation was conducted:

1. To compare personality traits of (1) FV, WSV athletes, (2) FI, WSI participants, and (3) NPOSP and NPOSN non-participants.
2. To compare Body-Cathexis of (1) FV, WSV athletes, (2) FI, WSI participants, and (3) NPOSP and NPOSN non-participants.
3. To intercorrelate obtained personality trait indices and Body-Cathexis indices among each of the five designated groups and to identify personality correlates with Body-Cathexis.

To expedite this investigation the following null hypotheses were tested:

1. There are no differences ($p < .05$) in scores on the individual personality traits between individuals in the different treatment groups. Treatment group one includes the varsity athletes, treatment group two includes the intramural participants and treatment group three includes the non-participants.
2. There are no differences ($p < .05$) in scores on the individual personality traits between individuals in the different conditions. Condition one includes FV athletes, FI participants and NPOSP non-participants. Condition two includes WSV athletes, WSI participants and NPOSN non-participants.

***The initials NPOSP and NPOSN in this document refer to students who do not participate in any organized extracurricular sports activities at school but participate in sports activities outside school, and students who do not participate in any organized extracurricular sports activities at school and do not participate in any sports activities outside of school respectively.

3. Treatment groups do not interact with conditions in scores on the individual personality traits.
4. There are no differences ($p < .05$) in scores on the Body-Cathexis between individuals in the different treatment groups. Treatment group one includes the varsity athletes, treatment group two includes the intramural participants and treatment group three includes the non-participants.
5. There are no differences ($p < .05$) in scores on the Body-Cathexis between individuals in the different conditions. Condition one includes FV athletes, FI participants and NPOSP non-participants. Condition two includes WSV athletes, WSI participants and NPOSN non-participants.
6. Treatment groups do not interact with conditions in scores on the Body-Cathexis.
7. There is no significant correlation between Body-Cathexis and each individual personality trait among each of the following groups: (1) FV, WSV athletes, (2) FI, WSI participants, and (3) NPOSP, NPOSN non-participants ($p < .05$).

The subjects who were involved in this study were male high school seniors obtained from five schools in Western Massachusetts. All of the schools are members of the same athletic conference and compete against one another. The five participating school were: West Springfield High School, Holyoke High School, Chicopee Comprehensive High School, Chicopee High School and Westfield High School.

One Personal Data Form, two personality tests, Gordon Personality Profile and Gordon Personality Inventory and one "Body-Cathexis" Test, Secord-Jourard were utilized

in collecting data for this study. All tests were administered at the end of October 1969.

The primary statistical treatments used in analysing the data required use of the two-way analysis of variance, the Newman-Keuls method for Multiple comparisons, correlation coefficients, the Fisher's r to z transformation method, and the Olkin test for significant differences of correlation coefficient.

Test results relating to the nine hypotheses were:

1. Significant differences in the personality trait Vigor existed ($p < .01$) between FV and WSV athletes.
2. Significant differences in the personality trait Vigor existed ($p < .01$) between FI and WSI participants.
3. Significant differences in the personality trait Vigor existed ($p < .01$) between NPOSP and NPOSN non-participants.
4. Significant differences in the personality trait Ascendancy existed ($p < .01$) between the FV, WSV athletes and the NPOSP, NPOSN non-participants.
5. Significant differences in the personality trait Ascendancy existed ($p < .05$) between the FV, WSV athletes and the FI, WSI participants.
6. Significant differences in the personality trait Sociability existed ($p < .01$) between the FV, WSV athletes and the NPOSP, NPOSN non-participants.
7. Significant differences in the personality trait Vigor existed ($p < .01$) between the FV, WSV athletes and the NPOSP, NPOSN non-participants.
8. Significant positive correlation between Body-Cathexis and the personality trait Sociability

- existed ($p < .05$) among the FV athletes.
9. Significant positive correlation between Body-Cathexis and the personality traits Ascendancy, and Vigor existed ($p < .05$) among the WSV athletes.
 10. Significant positive correlation between Body-Cathexis and the personality trait Vigor existed ($p < .05$) and between Body-Cathexis and the personality traits Ascendancy and Sociability ($p < .01$) among the intramural participants.
 11. Significant positive correlation between Body-Cathexis and the personality traits Ascendancy, Responsibility, Emotional Stability, Sociability and Original Thinking existed ($p < .05$) among the NPOSP non-participants.
 12. Significant positive correlation between Body-Cathexis and the personality traits Ascendancy and Sociability existed ($p < .05$) among the NPOSN non-participants.
 13. Significant negative correlation between Body-Cathexis and the personality trait Vigor existed ($p < .01$) among the NPOSN non-participants.

Conclusions

From the evidence obtained in this study the following conclusions may be drawn.

1. Significant ($p < .01$) differences in two personality traits, Ascendancy and Sociability, as measured by the Gordon Personal Profile existed between varsity athletes, intramural participants and non-participants.
2. Significant ($p < .05$) differences in the personality trait Vigor, as measured by the Gordon Personal Inventory existed between varsity athletes, intramural participants and non-participants.
3. Significant ($p < .01$) differences in the personality trait Vigor existed among FV and WSV athletes, among FI and WSI participants and among

NPOSP and NPOSN non-participants.

4. There were no significant differences in Body-Cathexis among varsity athletes, intramural participants and non-participants.
5. There were significant correlations both positive and negative between Body-Cathexis and certain personality traits. This relationship varied significantly among the following groups. FV and WSV athletes, intramural participants, and NPOSP and NPOSN non-participants.

DISCUSSION

In his professional role, it has come to the author's attention that individuals have different responses and feelings toward their bodies. Observations over the years were, in fact, responsible for the undertaking of this investigation. The question of reciprocity, if any, that might exist between personality traits and Body-Cathexis was a paramount influence in the formulation of this study.

In order to assure that the scope of the problem could be both meaningful and manageable only one particular phase of the student's educational experience was studied.

The purpose of this study was not to establish any cause and effect relationship pertaining to the information obtained from the data. However one way in which this investigation may contribute to knowledge sought by professional educators is by focusing sharply, on a series of questions that emanate directly from the data

obtained. In other words, there seems to reside within these findings about personality traits and Body-Cathexis hypotheses which warrant research investigation.

As his means of highlighting what are regarded to be crucial factors relating to his work, the author poses and discusses the following implications for further study.

1. What is the exact relationship between personality traits and sports activities? As a part of this major question one must ask can variables be adequately controlled to permit cause-effect inferences to be drawn? To what degree can the generalized behavior that occurs within sport be defined and studied? Within the scope of this study, these questions are treated only to a limited degree. As already reported in the review of literature, there is not, as yet any scientific data that can categorically define and explain the nature and extent of this relationship. The findings of this study revealed that of the eight personality traits as measured by the Gordon Personal Profile and the Gordon Personal Inventory five traits Responsibility, Emotional Stability, Cautiousness, Original Thinking and Personal Relations were not found to be significantly different. But, on three personality, traits--Ascendancy, Sociability and Vigor, there was a significant difference. The sameness among the five traits for which no significant difference

was identified may be explained in part by the fact that at the high school level the homogeneity among male students is stronger than the still developing and yet to emerge personality differences. Undoubtedly other points of view could be offered. Among those items for which differences were obtained the trait Vigor seems to be the most differentiating one among the three traits. These findings, give rise to the question of whether or not these personality differences, as measured by Gordon's Personal Profile and Inventory, are a result of participation in extracurricular sports activities, or whether the obtained personality differences predate participation in various levels of sports activities within the school system and outside of school. It is possible to assume that development of the traits occurs simultaneous to participation, that is, that they are both "operating" simultaneously within adolescent boys. One may believe that the dominance of specific personality traits may influence one to select specific athletics events. Then once engaged in the activities, the nature of the specific activities might contribute further to the development and strengthening of their specific traits. Several ways of exploring this issue are herewith suggested.

First, conduct similar studies utilizing different measures of personality and different groupings of subjects,

within the context of various types of educational institutions. Secondly propose a series of experimental model studies to investigate the effects upon certain personality characteristics by varying degrees of the application of sports activities. And thirdly, an approach that will really uncover some changes that occur in personality traits due to participation in sports activities would be a longitudinal study i.e., continuously repeated measures of personality using the same instruments, over a period of time.

2. What are some of the factors that influence one's self concept of his Body-Image? Does this influence occur either prior to or simultaneous with the emergence of personality traits?

The results of this study revealed no significant differences in Body-Cathexis between the groups. At this time however there is no way to attribute lack of differences solely to physical activities. Perhaps the most logical way to gain more knowledge about the Body-Cathexis phenomena is to study the kind of experiences which do relate directly to Body-Cathexis. Obviously this will involve a series of investigation which by design focus on homogeneous experiential factors.

The term Body-Cathexis, as utilized in this study can not be isolated from the many other factors that

influence one's attitude toward his body. Some of the most crucial elements of such influences are no doubt in the general environment in which one lives and the types of values that both the society and the individual puts on his body, as a whole, and as a vehicle for expressive use in physical activities, in particular. As already indicated in previous chapters, the point of view about Body-Cathexis taken as a frame of reference by the author does not consider Body-Cathexis and personality as separate entities, but rather as a unified concept, as interpreted by Schilder. Schilder states that:

Bodies are after all not isolated entities. The body and the body image are always the body and the body image of a personality which expresses itself in the body. The body-image is never an isolated part of our existence but is a part of every experience. The human personality is a personality with a body which expresses itself in the body-image and only on the basis of the understanding of the body image can we understand the personality fully.¹²⁶

Perhaps the key word here is the word "experience". Only by specifying the truly unique contributions of each of the many diversified experiences with which people are associated would one be qualified to reach some conclusions.

¹²⁶Paul Schilder, "Image and Appearance of the Human Body", Psyche Monog, No. 4, Kegan, Paul, 1935.

3. What are some of the factors influencing the differences attained among the various groups, in the relationship between Body-Cathexis and personality traits?

The findings of the study revealed that the level of these relationships between Body-Cathexis and personality traits varied between separate personality traits and certain groups, and among groups in general. Perhaps the relationship for which there is little rationale is the significant negative relationship recorded between the trait Vigor and the Body-Cathexis among the NPOSN non-participants ($p < .01$). This may be attributed to causal factors yet to be uncovered. Among the groups, the highest correlation between Body-Cathexis and personality traits was recorded among the intramural participants and the NPOSP non-participants. This finding gives rise to the following major question. What, if any, were the unique physical experiences of these two groups which may explain this high correlation? It is not only important to know that such a difference exists but also an answer needs to be found which reveals why this is so. Further research should be initiated to investigate the whole range and nature of voluntary physical activities. It is further evident, from the findings of this study, that the relationships between Body-Cathexis and personality among students who participated in outside

of school sports activities and students who participated in intramural activities within the school may be considered to be alike. While both groups, the intramural participants and the NPOSP non-participant, share the fundamental elements of voluntary participation, which are associated with personal enjoyment, fun and self satisfaction, we still must ask if there are any differences between the two types of individuals who participate in these groups. A question that follows relates to the components of the experiences that may explain likeness found in this study. Although intramural athletics has not gained the kind of wide acceptance that is frequently associated with varsity athletics, intramurals are, nevertheless, highly regarded as an integral part of school physical education program and a varied educational experience. In a national conference, held at Michigan State University in 1964, attended by fifty-one educators and consultants it was agreed that:

"A major role of intramural is the development of wholesome attitudes regarding the value which physical activity has in modern living. The hurry-fast pace of living requires a body 'which knows itself' and which can successfully meet the problems encountered in everyday living. The problems may be of a social or emotional nature, and the human body, a totally fit human body, is capable of successfully adjusting

with these problems as they arise."¹²⁷

The findings of this study reinforce some of the basic ideas embodied in the above statement. Perhaps it is time not only to ask ourselves how many students participate in intramural sports activities, but even more importantly it is time to analyze the value that such participation brings to the individual student.

Still other suggested research might be designed to identify some of the factors that might have caused the differences attained between the two varsity groups, the NPOSN non-participants and the intramural participants and the NPOSP non-participants. Other related questions involving intramural participation can be posed regarding the motives and reasons behind voluntary participations.

Another suggestion for further research is that the present study be expanded in scope continuously so as to include a larger and more diversified sample with sports participation being more narrowly specified. To this end the sample should include both boys and girls at the elementary and junior high levels. A greater sample would, of course contribute to the establishment

¹²⁷ David O. Mathews (ed.), Intramurals for the senior high school (Chicago, Illinois: The Athletic Institute, 1964), p. 3.

of wider more, meaningful conclusions regarding the extra-curricular sports program. This approach will also allow for a more controlled systematic differentiation between the various individual sports and team sports and the nature of its participations. Furthermore better insight can be gained about the values of formal and informal participation associated with varsity athletics and intramural participation. And last, a longitudinal study should be undertaken in order to systematically explore the changes in the relationships between Body-Cathexis and personality traits over a long period of time.

In summary, the findings of this study have not provided any solution or clear cut answers to the many questions about this important topic. Rather, the contribution which the study makes to the field of education as a whole and physical education in particular is the establishment of acceptable research evidence that differences in the relationship between Body-Cathexis and personality traits among male senior high school students do exist. Therefore, the investigation of the causal factors which explain these differences need to be undertaken. Perhaps the hypothetical type of questions that researchers should investigate are: (1) What is the role of the Body-Cathexis in an individual's total behavior and what are its effects on his personality? (2) What

are the contributions that physical activities in general and extracurricular activities in particular may make toward increasing relationships between Body-Cathexis and personality traits? and (3) How can the physical educator positively contribute toward this end?

APPENDIX A

BODY-CATHEXIS TEST¹

NAME _____

Instructions: On the following page is listed a number of things characteristic of your body or related to your body. Consider each item and encircle the number after each item which best represents your feelings according to the following scale:

- 5 - Consider myself fortunate - Encircle a (5) for those aspects of yourself about which you feel proud or happy, or which give you a pleasant feeling when you think about them. For example, if you are proud of your body build, encircle a 5 after that item.
- 4 - Am satisfied - Encircle a (4) for those aspects of yourself about which you are satisfied with, but not as strong as in category 5.
- 3 - Have no particular feelings one way or the other - Encircle a (3) for those aspects of yourself about which you have no feelings at all.
- 2 - Don't like, but can put up with - Encircle a (2) for those aspects of yourself about which you do not like, but do not feel as strong as that in category 1 below.
- 1 - Have strong feelings and wish change could somehow be made - Encircle a (1) for those aspects of yourself about which you worry or which you dislike or which cause you to be unhappy when you think about them. For example, if when you think about it you are quite disappointed with your body build, encircle a 1 after that item.

¹Secord and Jourard, "The Appraisal of Body-Cathexis: Body-Cathexis and the Self," Journal of Counseling Psychology, 17:5, 1953, p. 343.

BODY--CATHESIS TEST

- 5 - Consider myself fortunate
- 4 - Am satisfied
- 3 - Have no feelings either way
- 2 - Don't like but can put up with
- 1 - Have strong feelings and wish change could somehow be made

hair 1 2 3 4 5	ankles 1 2 3 4 5
facial complexion 1 2 3 4 5	neck 1 2 3 4 5
appetite 1 2 3 4 5	shape of head 1 2 3 4 5
hands 1 2 3 4 5	body build 1 2 3 4 5
distribution of hair over body 1 2 3 4 5	profile 1 2 3 4 5
nose 1 2 3 4 5	height 1 2 3 4 5
fingers 1 2 3 4 5	age 1 2 3 4 5
elimination 1 2 3 4 5	width of shoulders 1 2 3 4 5
wrists 1 2 3 4 5	arms 1 2 3 4 5
breathing 1 2 3 4 5	chest 1 2 3 4 5
waist 1 2 3 4 5	eyes 1 2 3 4 5
energy level 1 2 3 4 5	digestion 1 2 3 4 5
back 1 2 3 4 5	hips 1 2 3 4 5
ears 1 2 3 4 5	skin texture 1 2 3 4 5
chin 1 2 3 4 5	lips 1 2 3 4 5
exercise 1 2 3 4 5	legs 1 2 3 4 5
forehead 1 2 3 4 5	teeth 1 2 3 4 5
feet 1 2 3 4 5	voice 1 2 3 4 5
sleep 1 2 3 4 5	health 1 2 3 4 5
knees 1 2 3 4 5	sex activity 1 2 3 4 5
posture 1 2 3 4 5	face 1 2 3 4 5
sex 1 2 3 4 5	weight 1 2 3 4 5
trunk 1 2 3 4 5	back of head 1 2 3 4 5

APPENDIX B

Personal Data

Name _____ High School _____

The Personal Data is divided into three categories. Read carefully the description of the three categories and identify the one which you belong to. Answer all the questions under the chosen category only.

CATEGORY A. Varsity athletes.

1. If you were a member of a varsity or Junior Varsity athletic team during the last academic year, check the following list and place an X in the blanks below:

basketball _____	soccer _____	swimming _____
baseball _____	track and field _____	tennis _____
cross country _____	golf _____	wrestling _____
hockey _____	gymnastics _____	la crosse _____
football _____	skiing _____	others _____ (specify)

2. Are you a member of a varsity team in any of this year's fall sports?
No _____ Yes _____ - Which sport? _____
3. If you were a member of a varsity team in more than one sport, state them in order of preference.
One _____ Two _____ Three _____
4. Do you participate in other physical activities outside of school?
Yes _____ No _____

CATEGORY B. Students who participate in intramurals but are not members of any varsity team.

1. Did you participate in any intramural sports in the last academic year?
No _____ Yes _____ - Which sports? _____
2. Do you participate in any of this fall's intramural sports?
No _____ Yes _____ - Which sports? _____

3. If you participated in more than one intramural sports, state them in order of preference.
One _____ Two _____ Three _____
4. Do you participate in other physical activities outside of school?
No _____ Yes _____

CATEGORY C. Students who were not and are not members of any varsity team and who do not participate in any intramural sports.

1. Place an X in the blank below:
Non-participation _____
2. List any other activities in which you participate in school or out of school.
- A. Activities which require physical involvement
1. _____ 2. _____ 3. _____ 4. _____
- B. Any other activities
1. _____ 2. _____ 3. _____ 4. _____
3. Do you participate in other physical activities outside of school?
No _____ Yes _____

APPENDIX C - (I)

Raw Scores of Personality Traits and Body-Cathexis
of Fall Varsity Athletes

=====								
Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis
06	21	24	09	21	16	15	22	172
29	20	08	29	11	18	11	30	169
14	28	25	11	31	31	18	34	155
25	22	28	27	24	23	23	34	210
20	23	24	26	24	21	16	24	187
25	29	25	23	24	21	20	27	124
06	20	23	18	15	21	17	19	170
31	25	24	08	27	22	23	30	163
16	21	24	28	22	32	27	31	165
15	07	09	20	08	22	14	20	160
22	13	20	22	08	19	15	07	172
18	22	33	15	11	18	22	23	175
19	17	25	18	17	21	11	19	138
22	23	25	23	21	19	19	23	178
28	19	22	25	08	25	23	23	144
19	22	23	25	20	21	22	27	183
19	24	22	27	20	20	2	23	171
15	24	24	25	20	22	2	25	182
21	19	19	18	21	16	17	32	163
22	22	16	17	23	27	33	17	205
28	12	17	23	20	23	21	22	197
22	20	20	28	26	31	23	21	185
21	28	31	24	25	27	32	18	170
17	29	24	19	23	25	28	23	174
25	14	12	23	17	20	22	19	135

APPENDIX C - (I)

(Continued)

Personality - Traits								
	Responsibility Ascendancy	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body- Cathexis
27	18	28	29	20	28	32	18	161
22	31	24	26	17	37	25	29	047
24	15	14	23	25	25	26	22	180
21	24	21	31	29	25	30	26	174
20	21	24	30	11	24	14	27	185
24	25	24	14	20	32	19	31	185
25	20	20	24	17	14	14	23	185
18	17	19	22	20	18	18	24	221
21	30	30	26	12	21	18	21	157
17	16	20	17	20	26	16	29	248
12	33	31	19	25	21	26	23	169
21	19	20	19	18	16	25	17	216
34	19	22	22	26	20	26	17	198
19	20	20	32	20	27	35	26	131
27	15	13	23	11	19	19	20	178
28	26	15	28	2	26	17	34	146
24	25	23	32	18	33	24	33	180
22	30	25	22	19	19	24	22	147
29	21	14	22	24	20	14	29	142
16	28	28	24	17	26	33	26	195
23	21	24	17	16	19	15	28	223
19	31	25	23	30	31	28	29	170
23	24	23	16	18	15	15	16	171
21	28	27	28	22	31	25	32	152
21	17	20	22	16	25	22	17	130
17	30	31	15	16	21	20	31	188
19	22	21	15	24	20	21	19	172
20	19	27	17	26	22	24	24	153
20	17	21	24	19	24	21	25	166
12	16	15	18	26	23	21	25	143

APPENDIX C - (I)

(Continued)

Personality - Traits								
Responsibility Ascendancy	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body- Cathexis	
16	17	08	17	18	17	15	14	198
12	25	29	16	25	16	27	25	166
24	15	21	10	20	17	16	21	165
28	24	18	32	21	16	25	22	179
19	24	28	27	16	23	13	26	202
26	18	20	18	14	22	16	24	127
23	18	27	24	27	22	28	23	187
22	22	28	18	09	14	14	18	130
28	22	30	23	24	31	25	36	182
23	25	28	21	20	18	21	13	161
08	11	13	19	22	27	35	24	150
23	20	17	08	32	16	25	13	177
19	17	10	30	12	27	29	31	128
20	23	26	22	24	23	29	23	192
14	24	27	19	24	30	28	21	164
26	21	16	19	11	13	12	22	173
27	24	28	28	21	18	24	21	200
27	21	21	32	15	18	16	21	153
13	19	13	29	15	27	16	31	198
20	11	17	13	14	13	17	15	190
24	12	16	14	13	24	12	15	149
24	19	11	26	07	19	15	28	150
23	25	29	26	20	19	24	25	182
24	14	19	24	16	20	31	22	185
23	23	25	26	19	21	19	19	171
23	14	21	22	21	19	23	25	163
23	30	25	26	20	30	28	28	171
23	18	26	15	21	32	15	22	180
16	17	13	26	14	21	20	21	174
13	26	30	12	23	32	25	38	199

APPENDIX C - (I)

(Continued)

Personality - Traits								
Responsibility Ascendancy	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body- Cathexis	
19	19	21	13	14	21	21	16	178
23	17	17	21	22	20	22	18	189
15	26	24	23	24	19	22	22	145
23	19	17	13	13	16	10	27	144
23	23	26	16	18	19	23	16	163
09	18	17	24	22	26	21	19	145
16	19	22	16	14	22	16	22	207
17	25	23	18	23	22	23	34	154
22	25	25	15	25	26	15	26	174
16	30	24	20	30	23	21	34	110
24	13	14	14	23	21	22	20	180
19	27	28	25	29	27	22	34	161
15	23	26	20	19	20	24	21	141
10	13	14	12	23	19	25	25	180
20	13	16	15	31	12	22	15	222
25	19	19	21	18	16	18	20	187
25	26	30	26	25	20	18	21	186
23	17	16	26	13	27	20	24	090
18	18	19	24	22	20	17	15	159
25	25	22	15	25	18	19	26	172
21	22	24	27	23	23	19	17	183
21	23	24	18	16	18	19	20	180
23	24	25	24	20	19	22	16	152
13	13	18	19	17	16	20	15	166
21	14	19	22	25	18	19	20	190
27	21	21	23	22	16	18	14	165
23	27	28	26	22	28	25	27	149
24	19	24	24	21	19	18	24	182
18	27	25	22	30	26	27	21	182
26	29	31	24	13	24	33	24	188

APPENDIX C - (I)

(Continued)

Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis
20	25	24	29	21	27	21	22	160
25	22	15	24	20	28	22	19	118
21	20	18	29	10	24	20	22	179
19	25	27	22	25	23	19	28	157
12	25	24	24	15	23	21	15	091
21	12	17	09	14	20	12	11	156
22	30	24	23	26	33	25	28	144
30	31	32	23	19	32	23	36	214
28	29	23	26	19	32	22	35	161
30	20	23	26	23	28	28	31	152
22	26	23	26	21	21	26	32	148
23	19	18	23	16	18	18	17	140
15	26	29	18	28	32	26	30	150
21	26	26	14	32	21	32	18	179
23	20	14	23	20	23	18	17	145
23	23	25	23	15	21	25	18	156
21	23	25	27	28	18	25	27	174
25	21	20	20	14	13	24	20	156
26	09	17	31	10	22	14	15	179
20	24	26	23	17	17	30	20	182
24	11	13	26	19	26	28	19	202
25	23	28	29	23	22	23	19	175

APPENDIX C -- (II)

Raw Scores of Personality Traits and Body-Cathexis
of Winter and Spring Varsity Athletes

=====								
Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis
24	18	18	22	19	19	20	24	191
21	30	18	23	10	14	07	25	158
21	28	29	24	17	28	13	26	179
23	29	28	24	25	32	22	35	177
07	22	24	14	10	12	15	19	145
19	31	30	20	20	22	18	28	142
20	22	25	28	18	22	22	27	195
24	17	25	23	25	17	19	23	169
24	29	29	24	28	27	33	24	105
23	27	32	16	32	30	28	18	230
10	15	20	11	17	05	07	19	136
26	17	14	31	17	19	17	18	135
17	18	23	18	26	14	18	26	154
25	23	22	24	21	23	21	24	170
07	20	29	09	22	16	26	22	180
25	25	19	29	23	22	21	18	185
28	22	25	29	19	23	23	21	212
16	23	25	23	22	19	25	23	171
31	25	21	22	26	25	23	28	160
27	22	26	21	18	21	15	28	167
22	26	30	20	19	22	27	19	147
22	13	14	09	18	24	21	27	183
27	20	24	25	15	13	13	13	181
06	21	16	17	09	11	14	09	156
26	21	24	25	20	25	19	22	191

APPENDIX C - (II)

(Continued)

Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis
28	20	25	33	11	22	25	24	186
31	16	24	27	22	31	23	30	210
23	27	26	22	28	25	26	27	183
21	34	30	19	28	22	27	35	217
26	20	22	28	11	23	19	19	186
20	26	32	26	16	32	19	29	143
15	13	15	15	05	17	10	21	137
22	25	28	19	18	24	19	22	123
26	17	26	27	10	22	19	29	192
18	23	22	21	26	17	22	23	172
26	17	22	24	20	26	19	15	164
16	21	30	17	20	25	27	20	179
32	19	23	26	16	22	24	29	180
27	27	28	24	28	31	31	32	202
19	18	20	28	19	32	28	19	143
29	24	20	30	24	27	26	23	179
27	26	25	20	31	28	24	23	175
15	19	15	21	18	21	16	22	149
29	31	23	29	20	38	26	28	170
12	15	06	17	20	25	19	24	059
27	25	18	28	22	32	22	26	105
21	28	24	27	29	25	25	28	144
28	25	27	22	30	22	21	26	184
19	22	21	24	23	27	24	30	192
23	25	27	25	17	27	26	27	080
28	24	25	25	21	23	21	28	185
26	24	17	26	14	17	14	24	215
25	26	26	27	17	25	27	26	177
19	16	29	14	23	20	25	18	177
25	28	30	20	26	34	24	28	177

APPENDIX C - (II)

(Continued)

Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis
16	20	19	13	29	27	20	20	175
13	27	28	10	24	27	35	16	164
21	27	29	25	23	30	28	25	180
20	17	16	21	23	24	26	19	182
20	23	26	11	18	33	26	15	177
17	29	31	24	19	18	22	25	176
27	19	23	20	23	21	25	15	201
16	23	18	13	26	19	18	20	120
25	21	25	26	15	15	24	22	130
23	19	21	19	25	27	26	25	181
14	16	31	09	23	15	31	25	160
17	20	14	17	17	24	19	18	148
25	13	14	28	11	22	22	21	162
19	14	10	17	09	19	14	22	170
16	19	27	12	16	16	10	20	147
14	19	14	23	12	18	13	15	170
27	23	20	31	14	27	22	24	155
29	25	27	25	18	28	27	23	184
31	22	27	24	30	34	32	25	176
22	16	24	16	14	19	18	14	160
22	25	16	31	28	28	24	22	170
26	32	24	24	27	27	24	34	172
21	10	21	16	13	37	17	19	139
24	18	19	26	17	32	21	27	142
25	08	17	21	17	34	21	18	201
23	20	22	24	21	27	22	33	181
21	21	33	23	15	22	20	29	165
21	19	20	25	18	30	19	17	189
23	19	26	25	21	23	20	21	159
13	20	20	13	12	13	16	17	195

APPENDIX C -- (II)

(Continued)

Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body- Cathexis
17	15	13	19	14	15	21	24	171
26	21	18	29	24	19	25	20	139
20	30	29	27	18	27	28	24	184
12	09	15	11	10	15	14	15	163
17	19	20	21	11	15	16	16	188
25	27	28	25	16	24	14	21	173
22	20	22	24	19	20	22	17	169
27	19	25	20	16	24	24	22	147
30	22	24	30	15	32	24	33	160
20	21	23	22	22	18	16	24	168
26	18	20	21	19	24	20	26	221
15	18	11	26	30	21	24	15	160
23	24	24	27	26	29	24	34	183
23	15	18	18	21	19	14	19	200
16	20	20	24	22	20	23	27	200
15	21	24	16	21	16	23	14	171
22	18	25	21	22	19	17	20	156
25	24	23	26	19	30	26	27	179
18	15	18	21	18	20	17	27	120
18	21	27	17	18	20	16	21	160
21	23	25	25	23	16	26	21	207
21	24	16	26	23	23	22	20	162
24	21	21	20	28	27	21	30	178
17	25	29	11	18	19	23	22	156
27	23	21	31	21	24	15	24	157
26	22	24	20	17	21	25	23	193
21	22	23	28	18	15	20	23	186
17	23	20	23	25	22	24	27	178
16	23	36	13	23	20	21	21	195
25	24	31	20	21	28	33	22	192

APPENDIX C - (II)

(Continued)

Personality - Traits								
Responsibility Ascendancy	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body- Cathexis	
19	33	27	17	18	20	25	21	040
24	14	21	27	19	15	23	17	178
14	17	17	23	23	19	22	20	176
19	24	31	21	19	17	19	25	169
11	29	26	12	33	23	30	24	171
19	26	24	23	24	21	24	20	160
22	26	27	13	13	22	20	15	184
13	29	32	14	24	21	23	32	215
20	29	23	23	28	22	21	19	189
29	23	24	28	11	32	25	28	170
23	18	30	14	17	26	05	22	179
17	11	08	22	28	22	20	26	158
24	23	24	19	17	16	18	15	017
19	28	23	22	18	26	26	22	168
24	23	28	25	27	23	32	28	143
26	21	30	29	21	28	25	29	159
24	26	18	33	20	16	16	26	193
30	21	18	29	21	30	16	25	182
08	24	25	09	23	33	25	30	164
14	19	09	16	31	14	23	14	172
18	12	12	11	26	17	17	15	169
12	21	21	18	26	15	24	24	187
23	31	32	21	20	23	18	24	165
22	27	31	15	25	22	30	28	178
17	20	15	22	18	29	25	32	169
20	21	24	21	20	18	24	15	154
29	13	24	24	24	25	29	21	146
24	22	19	26	29	22	21	26	181
19	24	22	23	16	34	18	28	143
30	16	22	31	10	27	29	23	130
15	25	28	18	26	18	19	15	114

APPENDIX C - (III)

Raw Scores of Personality Traits and Body-Cathexis
of Fall Intramural Participants

Personality - Traits								Body-Cathexis
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	
13	24	21	07	14	23	22	28	144
15	31	27	13	34	24	23	28	145
16	23	13	18	22	33	29	30	149
19	23	25	18	21	19	22	31	149
21	28	24	23	26	25	15	31	181
10	17	15	16	30	16	17	19	165
18	30	26	19	21	30	22	30	143
18	18	22	14	20	22	18	18	172
21	20	15	14	26	24	18	20	185
25	23	24	22	25	24	28	20	182
34	22	26	27	27	31	22	31	204
23	26	29	28	15	35	28	28	150
23	25	26	30	21	21	23	25	186
24	27	27	25	21	22	19	34	179

APPENDIX C - (IV)

Raw Scores of Personality Traits and Body-Cathexis
of Winter and Spring Intramural Participants

=====								
Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body- Cathexis
10	20	15	19	31	17	19	17	186
18	27	25	24	24	32	21	23	138
08	19	21	08	18	12	12	12	130
19	18	21	18	17	21	18	16	163
16	26	26	20	20	21	13	24	172
09	23	16	09	31	16	20	19	140
25	25	27	29	14	34	22	28	175
25	20	16	23	20	20	20	24	207
26	24	27	25	17	23	17	19	183
22	16	17	31	15	26	25	22	149
19	33	27	20	28	25	30	27	183
14	14	14	18	23	19	17	19	148
22	16	22	21	21	18	22	19	183
18	21	31	12	12	19	23	26	165
23	20	28	20	19	29	37	23	184
28	23	23	24	28	35	28	28	171
19	20	18	19	27	25	31	31	200
20	16	16	14	19	23	22	23	082
27	18	19	22	19	19	21	18	136
24	25	26	29	24	21	31	25	180
22	25	27	26	15	35	22	29	176
23	26	29	28	15	35	22	28	174
23	19	16	24	22	26	27	25	178
03	14	09	11	18	12	09	15	174
22	21	22	21	18	25	18	19	177

APPENDIX C - (IV)

(Continued)

Personality - Traits									
Ascendancy	Responsibility	Stability	Emotional	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis
15	17	22	10	20	17	21	10	095	
28	25	25	26	25	21	19	23	180	
16	12	19	15	21	24	18	27	183	
13	23	28	14	17	18	20	25	143	
22	23	22	21	23	36	24	26	193	
28	25	27	22	32	34	25	27	198	
32	22	26	27	23	30	27	28	219	
21	35	31	21	35	22	27	20	186	
17	28	20	23	18	22	14	22	175	
09	26	22	18	22	25	24	23	156	
23	25	21	21	17	22	14	23	156	
28	17	11	32	12	15	15	24	145	
21	22	31	16	33	25	25	31	156	
20	31	28	25	27	24	24	31	205	
27	20	31	26	12	30	32	26	187	
26	27	24	23	24	23	27	30	173	
23	21	19	24	18	20	09	25	195	
17	21	16	18	22	19	22	17	194	
18	23	27	24	25	22	27	23	146	
28	19	22	26	12	11	16	15	196	
25	12	07	24	20	34	29	25	150	
21	27	31	21	15	23	14	20	175	
26	25	26	21	18	20	11	25	166	
20	25	29	24	19	22	14	21	171	
19	15	19	23	15	18	25	16	188	
23	28	32	19	25	30	30	29	198	
30	24	27	23	20	34	24	20	150	
25	23	24	22	25	24	18	18	182	

APPENDIX C -- (V)

Raw Scores of Personality Traits and Body-Cathexis
of Non-participants Who Participate in
Outside of School Sports Activities

Personality - Traits								Body-Cathexis
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	
13	19	18	14	17	13	20	20	165
15	28	29	22	17	23	28	22	186
20	31	25	32	28	27	27	32	167
15	10	10	19	10	18	21	19	141
07	15	10	06	14	20	08	22	219
27	22	21	28	18	23	19	28	205
13	08	16	13	18	06	16	08	150
10	23	29	14	27	22	30	31	050
25	24	26	23	23	24	30	27	222
22	27	33	18	26	27	21	30	222
19	25	31	19	14	20	19	27	184
08	14	19	05	21	18	21	18	152
12	17	23	16	22	19	25	09	183
26	23	25	22	18	24	21	29	164
23	33	30	24	29	27	26	26	161
19	28	19	26	32	23	26	33	152
17	18	20	21	22	19	15	17	154
14	15	20	19	12	18	17	13	176
16	19	27	14	18	21	24	19	156
21	28	23	24	22	24	27	27	197
17	15	14	26	10	26	18	22	151
23	17	14	20	25	25	20	23	145
16	18	25	19	16	26	18	27	181
18	21	28	19	29	27	31	29	160
25	27	25	25	18	25	24	25	152

APPENDIX C - (V)

(Continued)

Personality - Traits								
Responsibility Ascendancy	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body- Cathexis	
21	24	25	26	22	28	23	25	157
24	30	26	20	25	35	26	32	220
14	22	19	13	31	27	23	17	145
19	25	25	17	29	28	25	24	168
23	22	20	20	11	22	12	25	156
25	21	22	34	23	29	26	25	163
20	24	30	25	20	13	20	21	144
17	22	25	18	18	17	24	19	177
16	19	11	16	24	23	23	24	132
25	22	23	30	23	30	23	30	209
22	23	27	32	23	24	29	25	171
25	26	20	29	24	24	15	33	171
19	22	18	17	28	24	32	20	173
19	17	17	19	16	17	11	18	158
25	20	28	23	21	32	23	21	162
14	23	25	24	18	21	27	30	217
22	29	28	16	21	31	31	23	188
27	17	16	30	14	23	19	26	169
16	16	21	19	15	16	21	16	163
21	21	14	22	31	20	21	19	167
20	21	29	18	15	13	16	14	190
18	20	23	17	19	28	20	33	172
25	20	24	28	24	22	31	19	189
21	17	24	20	10	22	23	12	169
21	27	29	25	21	29	28	26	194
18	22	23	15	28	21	22	17	186
21	22	27	28	08	22	22	25	205
22	23	30	29	13	27	25	30	197
19	18	24	16	20	16	17	25	120
22	33	32	17	17	12	12	24	194

APPENDIX C - (V)

(Continued)

Personality - Traits								
Responsibility Ascendancy	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body- Cathexis	
18	17	23	14	18	21	21	24	136
13	31	16	13	25	27	11	27	155
27	28	31	20	21	26	24	28	173
07	15	15	05	21	06	11	06	147
12	23	24	14	17	19	14	24	137
23	15	14	20	16	17	16	15	181
26	24	28	29	22	21	21	22	171
30	29	24	28	23	32	30	31	177
17	22	28	11	19	25	27	25	179
20	18	11	23	20	20	16	18	132
29	19	22	26	26	25	15	23	175
20	27	23	18	25	28	22	27	158
29	24	25	27	20	27	23	29	164
21	27	30	21	21	19	18	22	140
20	25	27	15	26	24	29	30	156
22	27	27	24	23	25	21	25	184
17	26	27	13	27	33	28	26	178
10	08	14	04	13	19	20	14	135
24	26	31	25	24	29	24	31	180
23	19	23	22	12	18	20	20	181
19	22	21	29	21	21	21	15	156
28	16	23	16	21	16	24	19	181
19	17	28	29	21	37	22	20	224
27	25	25	22	27	31	29	30	153
18	32	35	32	25	28	28	27	192
25	25	26	30	23	28	23	28	163
27	26	25	27	27	31	23	26	190
17	22	18	28	15	20	17	18	184
24	24	25	19	26	21	14	27	228
13	15	17	27	15	20	20	19	186

APPENDIX C - (V)

(Continued)

Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis
24	21	23	13	14	16	14	16	178
16	26	25		26	20	24	20	160

APPENDIX C - (VI)

Raw Scores of Personality Traits and Body-Cathexis
of Non-participants Who Do Not Participate in
Outside of School Sports Activities

=====								
Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis
27	10	24	25	13	34	22	21	162
27	16	17	20	20	24	17	21	184
22	14	14	22	17	17	17	19	145
16	22	34	10	31	30	29	18	173
23	22	25	16	20	21	16	22	171
24	07	12	25	16	31	16	18	123
09	23	27	09	19	10	07	14	156
22	20	23	27	28	16	27	13	178
16	23	31	16	16	13	23	24	165
12	15	21	15	18	18	17	13	158
24	29	30	25	22	24	20	25	183
16	22	26	24	22	21	22	27	204
06	21	17	11	15	13	19	22	181
14	26	23	10	34	33	26	25	159
14	25	29	24	21	18	32	19	184
14	19	25	09	27	25	28	14	158
19	00	06	17	05	21	15	14	136
29	27	23	24	25	28	23	34	201
20	30	29	19	25	30	19	22	136
21	21	30	20	24	20	14	28	175
22	20	23	23	28	25	22	33	174
14	21	24	07	20	17	15	18	148
28	22	32	26	28	33	26	27	218
16	17	15	22	14	25	12	21	133
20	13	15	24	15	15	20	06	205

APPENDIX C - (VI)

(Continued)

Personality - Traits								
Responsibility Ascendancy	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body- Cathexis	
20	19	33	16	18	19	23	17	178
05	18	13	04	23	25	24	20	146
27	21	16	30	11	25	16	16	157
18	09	19	21	12	15	20	14	110
20	31	32	24	26	24	31	23	184
17	16	19	19	14	15	17	22	119
14	19	26	13	16	07	15	15	149
18	17	22	15	21	15	21	13	160
23	19	24	18	22	34	16	20	165
16	25	26	15	29	21	25	33	147
12	26	22	10	25	26	22	19	228
15	26	24	15	28	27	27	16	136
18	22	25	11	07	19	16	20	050
17	24	27	20	21	24	21	26	137
21	32	29	21	29	24	23	18	140
20	22	28	20	14	22	19	15	090
19	12	16	13	17	20	21	18	180
24	20	20	24	25	25	26	30	168
10	23	25	17	21	19	18	12	181
24	24	26	30	21	30	30	21	187
25	26	24	29	24	31	28	25	170
23	22	23	22	18	28	20	18	182
25	22	25	28	24	25	29	30	211
29	25	26	24	17	26	25	28	150
20	18	20	26	21	20	20	19	162
19	25	30	22	23	29	23	25	184
24	23	22	22	18	20	23	23	124
22	21	29	24	11	22	19	20	160
28	19	15	32	15	25	25	27	168
23	23	23	26	23	23	24	28	149

APPENDIX C - (VI)

(Continued)

Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis
06	17	13	09	13	13	10	16	123
25	25	30	26	20	32	26	26	169
18	17	28	15	20	16	30	08	169
24	19	16	20	13	23	17	16	201
17	22	19	22	18	20	22	18	159
16	13	19	18	10	25	25	22	170
21	28	24	17	32	37	27	22	152
07	15	12	06	19	13	09	20	129
15	17	15	13	28	22	24	14	160
29	27	22	30	29	19	24	22	182
03	17	19	09	28	25	16	25	157
12	22	24	03	17	19	18	16	132
24	28	29	19	22	34	16	28	157
21	26	32	18	22	31	23	30	176
25	26	22	29	30	25	23	34	199
25	25	23	21	06	27	21	26	185
13	15	17	16	11	15	22	14	164
27	13	13	19	08	27	14	17	151
30	23	19	30	23	31	29	24	166
17	26	17	21	17	20	10	23	185
20	22	27	27	11	15	25	20	182
24	24	20	20	27	25	23	23	155
17	25	27	18	19	17	20	17	171
17	23	25	15	22	14	16	24	184
19	28	25	22	33	24	25	30	177
25	27	29	23	20	28	25	23	169
22	21	10	29	15	23	14	32	180
26	24	26	26	22	28	25	25	203
16	19	10	19	20	21	18	21	215
22	13	11	28	12	25	20	21	162

APPENDIX C - (VI)

(Continued)

Personality - Traits								
Responsibility Ascendancy	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body- Cathexis	
09	11	12	11	24	17	14	15	131
25	20	30	27	18	15	30	17	173
21	22	20	27	13	21	20	22	168
11	27	15	25	21	18	23	16	181
20	21	33	19	20	29	28	27	129
20	24	22	21	21	27	17	24	174
25	23	29	25	27	30	27	24	138
25	13	19	21	17	25	21	21	162
20	28	25	18	27	24	21	22	090
15	15	14	14	13	15	11	15	125
28	19	18	23	16	26	16	29	177
08	19	17	28	21	14	04	20	161
21	18	17	24	16	25	20	25	155
19	34	24	25	16	22	15	25	150
27	19	21	31	07	28	24	19	205
12	13	19	14	12	16	14	17	168
20	21	25	08	22	24	18	21	147
21	18	18	17	14	19	13	17	112
17	20	27	10	19	20	22	15	184
18	24	21	19	16	18	17	23	146
22	31	25	19	22	33	26	25	169
15	20	23	18	13	19	15	16	154
12	16	21	11	16	12	06	16	153
16	26	27	17	08	19	20	25	122
18	24	22	15	20	21	11	28	152
27	25	21	31	10	31	33	23	155
24	28	29	23	30	27	29	22	90
24	24	30	26	32	26	32	26	170
26	26	26	24	19	24	23	24	226
14	11	05	26	17	36	26	25	132

APPENDIX C - (VI)

(Continued)

Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis
28	19	25	22	30	29	29	24	176
16	23	13	16	24	28	17	17	153
17	17	17	24	17	12	12	21	168
19	27	32	14	34	21	21	18	111
22	25	31	17	29	29	29	23	182
17	23	24	20	24	29	24	19	135
15	20	17	26	20	11	05	16	167
22	18	20	22	29	22	23	18	149
20	28	16	25	21	22	16	32	166
26	22	21	27	16	22	22	20	223
19	25	24	22	15	19	19	23	142
17	17	16	20	18	21	24	19	204
22	24	22	20	17	21	21	18	179
24	21	27	15	26	23	22	27	216
21	18	19	21	12	23	10	23	169
17	25	22	22	23	16	25	18	187
29	15	09	09	21	15	17	15	157
11	22	27	10	30	18	31	23	195
20	15	27	20	18	11	23	12	180
19	20	21	19	20	17	25	14	160
27	22	18	31	19	18	22	17	228
17	19	20	20	20	16	15	17	177
16	23	19	16	15	21	22	20	180
16	21	22	15	21	21	25	15	167
23	23	16	25	18	22	22	18	154
22	23	09	28	24	29	27	26	160
19	22	21	18	23	17	24	24	188
20	32	23	17	28	25	27	16	150
15	21	17	15	17	24	15	37	138
19	17	18	20	22	19	18	19	148

APPENDIX C - (VI)

(Continued)

Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis
23	21	24	19	18	23	19	22	174
14	20	26	10	15	22	28	22	179
20	25	26	27	24	17	20	21	180
20	20	24	18	19	25	25	27	221
19	27	26	24	18	28	17	26	156
23	26	32	18	16	29	20	23	193
16	21	25	16	25	17	14	24	179
17	22	19	18	28	18	13	26	172
18	24	30	15	27	24	22	23	187
11	20	28	11	16	09	17	08	172
14	13	18	06	14	24	16	14	138
08	16	15	11	24	18	23	17	095
15	25	28	18	25	16	22	19	145
20	15	18	17	14	18	18	05	157
14	22	25	07	21	22	09	28	158
15	10	15	12	22	23	24	19	165
11	16	16	04	20	29	17	22	149
34	19	21	32	20	21	16	13	184
23	21	22	16	23	27	26	24	176
18	22	23	07	30	29	25	18	195
10	23	17	14	18	29	21	20	154
21	21	18	15	16	16	23	15	182
21	27	28	23	25	26	30	29	225
17	19	17	27	27	24	28	30	155
13	23	22	22	10	17	16	17	158
15	24	14	13	28	24	18	20	222
24	23	28	13	26	31	25	26	192
15	20	21	18	26	26	23	19	171
24	30	32	22	22	31	29	32	171
15	15	18	15	20	20	16	14	171

APPENDIX C - (VI)

(Continued)

Personality - Traits								
Responsibility Ascendancy	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body- Cathexis	
15	21	22	12	28	24	19	22	169
12	21	18	19	18	19	23	14	134
27	20	25	25	14	18	23	20	186
19	21	16	24	30	21	20	30	164
24	26	32	25	19	24	22	23	173
12	23	23	08	19	15	19	26	183
20	22	27	23	28	20	23	23	174
24	24	19	32	27	21	29	32	153
21	21	23	25	18	23	16	13	137
22	22	31	19	26	18	27	25	177
19	17	09	16	21	33	21	31	147
22	29	22	22	25	34	21	30	218
24	24	28	18	23	36	22	25	161
10	24	24	04	23	11	14	14	141
29	17	17	16	04	16	15	18	125
09	21	22	07	26	15	23	16	163
15	12	21	16	18	19	14	17	146
14	14	09	19	18	15	12	14	149
17	22	26	19	24	24	19	18	150
10	20	27	03	28	13	16	13	174
17	21	16	14	37	20	18	21	184
16	26	23	15	28	26	30	20	154
19	28	29	21	05	16	19	24	184
13	22	18	19	14	17	13	24	178
24	25	22	27	27	33	29	21	158
20	23	29	06	25	21	10	19	155
23	26	23	27	18	19	12	22	165
10	19	20	07	22	22	15	09	134
05	20	19	06	30	15	23	18	171
26	20	22	21	27	17	20	25	192

APPENDIX C - (VI)

(Continued)

Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis
18	15	20	17	15	17	15	20	170
22	20	14	26	18	25	18	29	169
12	27	28	17	31	26	25	24	183
19	31	35	21	26	22	21	27	159
16	26	26	18	23	20	24	15	153
21	25	25	26	20	21	14	27	203
27	22	18	25	24	24	21	29	192
22	21	18	26	19	19	23	17	163
13	04	13	09	18	11	09	16	160
18	26	21	27	14	22	30	24	181
15	28	29	22	25	24	21	26	185
25	20	23	20	13	18	13	26	162
18	26	24	18	26	27	22	21	188
18	14	18	20	16	31	22	25	139
17	27	29	19	25	20	22	21	201
09	20	23	02	14	14	15	14	156
21	17	18	22	22	17	20	24	179
17	18	17	20	25	20	16	16	209
17	28	23	20	24	27	29	26	172
20	21	20	17	32	27	25	26	144
28	23	19	28	14	20	15	28	144
29	27	20	28	26	35	21	30	190
19	29	26	16	33	28	34	23	153
22	21	26	23	20	20	19	26	159
13	11	14	12	13	18	18	13	108
23	22	23	20	23	18	21	20	176
09	23	23	17	18	15	22	21	160
25	20	20	21	15	24	21	28	221
10	18	17	18	18	18	18	18	164
26	26	21	33	19	26	22	31	220

APPENDIX C - (VI)

(Continued)

Personality - Traits								
Ascendancy	Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis
15	30	28	18	24	27	30	33	152
26	31	32	19	28	30	26	31	166
24	19	14	25	23	33	21	26	160
14	17	18	15	22	17	22	14	189
20	23	25	28	22	18	26	22	150
29	17	23	22	21	26	25	22	163
26	21	23	20	20	23	17	22	209
18	20	15	25	26	29	23	22	175
11	10	13	10	26	29	15	20	167
23	10	10	27	16	18	15	15	179
15	22	26	19	20	23	18	17	153
13	23	24	13	18	16	13	23	174
19	14	14	24	07	21	14	22	206
24	27	28	25	27	31	25	27	213
19	17	18	10	21	30	23	28	176
12	18	26	32	21	33	22	22	152
15	21	19	15	10	28	20	22	180
18	28	27	12	29	26	31	24	170
22	26	26	12	08	20	20	14	210
16	27	25	22	21	21	21	28	169
15	12	24	25	18	20	30	27	174
22	23	15	20	27	24	18	25	182
23	16	15	20	17	29	23	23	176
19	34	21	21	09	23	23	25	143
17	23	31	19	17	19	28	15	157
23	24	32	17	28	26	31	28	144
24	31	23	25	25	27	11	27	173
13	25	33	29	16	15	27	24	136
24	21	28	19	15	22	23	22	175
27	19	16	20	18	26	18	23	176

APPENDIX C - (VI)

(Continued)

Personality - Traits								
Responsibility	Emotional Stability	Sociability	Cautiousness	Original Thinking	Personal Relation	Vigor	Body-Cathexis	
22	22	23	20	17	18	25	26	188
22	23	27	22	24	22	20	30	160
14	26	18		24	26	15	19	180
28		30		21	25	20	24	124
				26	21		24	

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