THE RELATIONSHIP OF PERSONALITY TRAITS AND THE SELECTION OF TRACK AND FIELD EVENTS IN JUNIOR HIGH, HIGH SCHOOL, AND COLLEGE

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ABSTRACT

THE RELATIONSHIP OF PERSONALITY TRAITS AND THE SELECTION OF TRACK AND FIELD EVENTS IN JUNIOR HIGH, HIGH SCHOOL, AND COLLEGE

Timothy W. Thomas

COMMITTEE: Dr. George Milton (Chairman), Dr. Ray Heath, Dr. Billy Tidwell, and Coach Phil Delavan.

PURPOSE: It was the purpose of this study to determine the significant differences between personality traits and the event selection in track and field at the junior high, high school, and college levels of competition. A secondary phase was to determine the significant differences between personality traits and the three levels of competition.

PROBLEM: Is there a significant difference between personality traits and the event selection in track and field? Is there a significant difference between personality traits and the three levels of competition (junior high, high school, and college)?

PROCEDURES: The sixty-eight subjects were divided into groups according to event classification (sprints, distance, jumping, throwing) and the level of competition (junior high, high school, college). The groups completed the Edwards Personal Preference Schedule. The comparison of the scores from the EPPS was statistically analyzed. The statistical tools were the analysis of variance and t-score at the .05 level of significance.

RESULTS: There were no significant differences between personality traits and the event selection in track and field. There were significant differences between personality traits and the three levels of competition. These results are as follows:

1. The sprinters scored significantly different on the order variable ($F_{2,14}=4.309$) between the levels of competition.
2. The distance runners scored significantly different on the hetersexuality variable ($F_{2,15}=4.354$) between the levels of competition.
3. The jumpers scored significantly different on the achievement ($F_{2,13}=4.115$) and endurance ($F_{2,13}=4.067$)variables between the levels of competition.
4. The throwers scored significantly different between the levels of competition on the order variable ($F_{2,14}=7.112$).

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T. W. T.

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Chapter 1

INTRODUCTION

THEORETICAL FORMULATION

Athletics has been a part of man's life since the early Greeks. As historical events occurred which changed man's life, it also changed the need for physical activity or athletics. Man progressed to the age of automation with inventions of the automobile, airplane, computer, and other machines which have relieved him of much of his manual labor. At the same time, these acquisitions have allowed for a change in athletics as new equipment, better facilities, and spectator interest have brought new dimensions to athletics. These changes have also inspired research in the field of athletics. Researchers from all disciplines have studied athletics to search for methods to improve the performances of the athlete. Research has centered around new techniques in skill development and the physical well being derived from athletic participation as can be found by reading professional literature in athletics and physical education.

Research is also investigating personality and its influences upon athletics. Booth (3) used the Minnesota Multiphasic Personality Inventory in his study of the personality traits of athletes and nonathletes. He was able to determine a significant difference between the groups. Slusher (22) administered the

same test to high school athletes and nonathletes. The athletes scored significantly higher than the nonathletes except for swimmers on the hypochondrias variable. Both Slusher and Booth found that personality traits differ between athletes and nonathletes.

The studies by Slusher and Booth indicated the difference between athletes and nonathletes. Other research has shown that personality traits vary between sport groups such as baseball and tennis players. Singer's (23) study compared the personality traits of baseball and tennis players. The results indicated that on the achievement variable the tennis players scored significantly higher than the baseball players. Singer also found that baseball players scored significantly higher on the abasement variable than the tennis players. Lakie (22) found that no significant differences existed between the total sport groups from the different institutions of higher learning; there were significant differences between the schools on the social maturation scale.

THE PROBLEM

The focus of the research correlating personality traits and athletics has centered on a comparison between athletes representing different sport groups as well as athletes and nonathletes. The research has revealed valuable information on the relationship of personality to athletics. This information is important to this researcher and the research now being conducted, but other questions, such as the influence of an individual's personality on his participation within one particular sport, has been raised.

Track and field, for example, has a variety of events for individual participation. Each event requires certain physical capabilities for success. This study will attempt to determine if a significant difference exists between personality traits and event selection in track and field.

Statement of the Problem

Is there a significant difference between personality traits and event selection in track and field? Is there a significant difference between personality traits illustrated by athletes in the same event at the junior high, high school, and college levels of competition?

Statement of the Hypothesis

There is no significant difference between personality traits and the event selection in track and field. There is no significant difference between the personality traits exhibited by individuals competing in the same events at the junior high, high school, and college levels of competition.

Assumptions of the Study

It is assumed that the athletes to be tested are from a normal population of the competitors in track and field. It is also assumed that the events require different physical skills in their performance.

Purpose of the Study

The purpose of this study was to determine the role of personality in track and field. Research has centered around

the personality differences between different groups (i.e., athletes, nonathletes, and different sport groups). The intent of this study was to compare the personality differences of participants that may exist within track and field. The data gathered can enable coaches to better understand their athletes as well as make it possible to develop better training techniques that enhance the athlete's personality. It was one of the first attempts to work in the area of the effect of personality in one sport.

Significance of the Study

The data gathered through this research will give some indication as to the effects on personality on one particular sport. The coach will be able to get some insight as to the effects on the personality of the athlete and his selection of the event in which he competes in track and field. The data could be of value to educators and coaches of other sports as it gives new insight into personality and sports and could inspire the research in other areas.

DEFINITION OF TERMS

It is necessary to define terms that are used within the text of this paper. These terms were selected because of their significance to this study.

Personality (9)

An organized body of ideas, attitudes, traits, values, and responses which an individual has built into roles and statuses for dealing with others and with himself.

Traits (10)

A distinguishing feature or quality of mind or character that is unique to the individual.

Sprints (7)

Events that require the running of a short distance at full speed. These events consist of the 100 yard dash, 220 yard dash, 440 yard dash, and hurdles.

Distance Events

The events that are run at a longer distance at a constant pace. These events are the 880 yard run, mile run, two mile run, three mile run, six mile run, steeplechase, and the marathon.

Throwing Events

The events in which implements are thrown for distance by each competitor. The events are the shot put, javelin, discus, and the hammer throw.

Jumping Events

The events in which each competitor jumps for distance or height. The events are the high jump, long jump, triple jump, and pole vault.

Edwards Personal Preference Schedule (8)

A forced-choice inventory designed to show relative importance within the individual of fifteen key needs or motives.

LIMITATIONS OF THE STUDY

The study could be limited due to the inability for obtaining a true random selection because of circumstances such as the inability of selected individuals to be able to participate because of various reasons, the reselection of others to replace the first sample selectors who were unable to participate, and the lack of an adequate number of subjects within the classifications. There could also exist some bias results since most of the subjects came from the same geographic location and socio-economic class.

Chapter 2

REVIEW OF RELATED LITERATURE

The primary hypothesis of this study is the determination of the relationship between personality traits and the event selection in track and field. A secondary area of investigation is the correlation of personality traits illustrated by individuals in each event at the junior high, high school, and college levels of competition. A summary of related literature reviews research which has preceded this study and lends value to and supports premises of the hypothesis. Divisions resulting from a review of related literature include definitions of personality, a comparison of personality traits of athletes and nonathletes, a comparison of personality traits of athletes in different sports, a comparison of personality traits of athletes in the same sport, and a comparison of personality traits and related activities.

DEFINITIONS OF PERSONALITY

According to research and writings concerned with personality, definitions have been based on their relevance to the work and the school of thought (i.e., Freud, Gestalt, and others) represented by the researchers. The early Greeks used the word "pros o pon" which meant theatrical mask. (11) Webster's dictionary defines personality as the complex of characteristics

that distinguishes an individual's behavioral and emotional tendencies. (24) Personality can be described as an organized body of ideas, attitudes, traits, values, and responses which an individual has built into roles and statuses for dealing with others and himself. (9) Much of the recent research has described personality and its relation to behavior which can be observed and described by the actions of the individual. Cratty (6) through his work defined personality in behavioral terms stating that "personality can be described as relatively permanent and consistent patterns of behavior exhibited by an individual." Personality can be described as the way an individual behaves and this behavior can be observed in athletic participation.

Personality and its relationship to athletics has fascinated coaches, physical educators, and sportsmen for years. The most expounded outcome from athletic participation has been the development of personality characteristics such as leadership, sportsmanship, and teamwork among others. Since personality is a common factor among people and people participate in athletics, additional definitions of personality are resulting from athletic research. A definition which illustrates the relationship of sports and personality states that personality is a product of bio-social forces, and sports may play a significant role in personality development. (22) As research began to investigate the role of personality in athletics, the main emphasis centered on individual personality traits.

Tutke and Ogilvie have completed much of the research in the area of psychology of sports with the creation of the

Institute for the Study of Athletic Motivation and studies dealing with personality traits of athletes. Through their work, Tutko and Ogilvie (20) developed a list of personality traits including drive, determination, intelligence, aggression, leadership, organization, coachability, emotionality, self-confidence, mental toughness, responsibility, trust, and conscience development. These traits are used as the variables reported on tests designed by the Institute for the Study of Athletic Motivation which coaches can use to increase the understanding of their athletes. According to Cratty (6), in his book Psychology anc Contemporary Sport, the concept of a personality trait suggests that people are somewhat consistent in their behavior and that various components of personality or traits are amenable to measurement. This statement enables researchers to justify the use of personality tests to prove and/or disprove hypotheses centered on personality and its role in athletics.

Research articles investigating the relationship of personality traits and athletics found in the professional journals have begun to be more prevalent. Questions are being raised as to the influences of personality traits on athletics. As budget cuts are being made, administrators, coaches, and athletic directors look to the personal gains wh ich athletics is supposed to instill in the individual as reasons for the continuation of their programs.

THE PERSONALITY TRAITS OF ATHLETES VERSUS NONATHLETES

Reviewing literature investigating the comparison of the personality traits of athletes and nonathletes leads to Booth's (3) studies indicating that personality traits differed between

athletes and nonathletes. Using the Minnesota Multiphasic Personality Inventory, Booth discovered that nonathletes scored significantly higher than the athletes on the interest variable and the anxiety variable. Upper-class nonathletes and athletes scored higher on the dominance variable than the freshmen athletes and nonathletes. Booth's population consisted of varsity athletes, freshman athletes, upper-class nonathletes, and freshman nonathletes.

The MMPI was also employed by Slusher (22) in his work comparing the personality traits of the high school athlete and nonathlete. The findings illustrated a significant difference on the femininity and intelligence variables between the athletes and nonathletes. Other research in this area of personality traits and their influence on athletics have also illustrated the same type of information. The comparison of personality traits between a cross racial population of athletes and nonathletes showed that there existed a significant difference between white athletes and white nonathletes and black athletes on three of the four traits tested. It was also noted that black athletes scored significantly higher on the responsibility factor than the black nonathlete. (13) A study by Malumphy (17) conducted with women athletes found that two of the researcher's groups of athletes (team and team-individual) differed significantly from the nonathletes as well as the athletes in the two remaining groups (subjectively-judged and individual). The results seem to indicate that sport selection was based upon the woman's personality. For example, the individual sport participant or subjectively-judged sport participant seemed to desire independent and autonomous action.

The California Psychological Inventory was the measuring device used to test the personality traits of football players versus nonathletes in a study by Berger and Littlefield. (2) The results showed that there were no significant differences between the two groups. Schendel (5) studied ninth and twelfth grade and college athletes and nonathletes. His results showed that the ninth grade and twelfth grade athletes illustrated more of the desirable traits than the nonathletes. At the college level the opposite was found to be true as the nonathletes illustrated more of the desirable personality traits. Merriman (5) completed the same type of research but his results did not support Shendel's. A cross validation of Booth's scale using only football players versus nonathletes found no significant difference between the two groups. (16)

The results from the reviewed research illustrates that the personality traits of athletes may differ from nonathletes. Questions though have been raised from this research as to the influences of personality traits and the selection of an athletic event by an individual. Do athletes who participate in one sport have a different personality complexion from the athletes of another sport? A review of literature concerned with these questions will be discussed in the next section.

THE PERSONALITY TRAITS OF DIFFERENT SPORT GROUPS

Resesearch of the comparison of personality traits of athletes and nonathletes has motivated research of the comparison of personality traits of different sport groups. It is generally

an accepted fact that different sports require different physical capabilities. Research has also indicated a difference in the personality traits exhibited by athletes from different sports. Booth's (3) second phase of his study dealing with varsity and freshman athletes divided into those who participated in either team or individual sports only. He found only one significant difference between the groups which was on the dominance variable between varsity athletes who participated in individual sports in comparison to those who participated only in team sports. Slusher (2) found that basketball players illustrated the biggest deviation from the other groups in a study of high school athletes from different sports using the MMPI.

The results of a study by Lakie (22) comparing the personality traits of athletes in the different sport groups at different size institutions of higher learning, illustrated a significant difference between sport groups at the same institutions in addition to the significant difference between the same sports at the different institutions. In studying the personality traits of women athletes who participated in individual sports and team sports, it was reported that women athletes from the individual sports scored higher on dominance, adventurousness, sensitivity, introversion, radicalism, and self-sufficiency variables when compared to women from team sports. The team sports subjects scored higher on the sophistication variable. (21) Another study by Johnston (14) compared the personality traits of superior skilled women athletes from basketball, bowling, field hockey, and golf. The basketball players reported significantly lower scores from the

other three groups on a number of the variables reported on the test. Singer (23) in his study of baseball and tennis players found a significant difference between the two groups.

These results have indicated that personality differences are found between sport groups. The research has inspired more research to be undertaken in the future in an attempt to determine the role of personality in athletics.

THE PERSONALITY TRAITS OF ATHLETES IN THE SAME SPORT

A limited amount of research has investigated the relationship of personality to the individuals of the same sport. The comparison of the personality traits of slower and faster competitive swimmers reported certain personality traits were directly related to the rank of the swimmers according to time. (18) Wrestlers deviated significantly from the norms on tough-mindedness, self-reliance, and masculinity variables as reported by Kroll. (15)

Women fencers were tested on the Edwards Personal Preference Schedule and Cattell's Sixteen Personality Traits Questionnaire. The results indicated a definite personality illustrated by the fencers when compared to the national norms. (12) This research indicates that certain distinct personality traits are illustrated by athletes of a particular sport when compared to norms devised for the measuring instrument used. It serves as a basis for continued study in the area of personality traits and athletics.

A COMPARISON OF PERSONALITY TRAITS AND RELATED ACTIVITIES

The research that has been reviewed in the preceding sections had a direct link to athletics and personality traits; there is a need to review work related to athletics such as physical activities, coaching, and spectators. Research investigating the influences of personality traits and physical activities are beneficial since athletics is a form of physical activity.

Brunner (4) discovered from his research of participants and nonparticipants in vigorous physical activity, that the participants scored significantly higher on eight of the reported variables. The participants were more extroverted and the nonparticipants more introverted compared to each of their personal descriptions of the eight scales.

A study was completed comparing the personality traits and motor achievement of junior and senior high school boys. The results indicated that group measured personality characteristics could predict the levels of motor achievement. Individual group dependence was a factor in the extent of the exhibited motor achievement. (25) A similar study was used to investigate college freshmen swimmers and nonswimmers. The scores indicated a significant difference between seimmers and nonswimmers and also between learners and nonlearners from the nonswimmers group, who completed the basic swimming course. (1)

Research and testing suggests that differences do exist in personality traits of athletes and nonathletes, athletes from

different sport groups and athletes from the same sports. Also a difference exists between participants and nonparticipants in physical activity.

SUMMARY

The literature reviewed deals with personality traits and their role in athletics. With a few exceptions (2,16,21) the research completed illustrates the differences in personality traits between athletes and nonathletes, athletes from different sport groups, and athletes with the same sports when compared to the national norms established for the test. (3,5,13,21) Athletes at the different levels of competition (high school and college) were used to collect the data for the research reviewed. (2,3,5, 13,16,21,22) Ogilvie (19) established that certain personality traits were unique to different sport groups and athletics in general.

The reviewed literature covered also, activities related to athletics. Personality differences were found to exist between participants and nonparticipants in physical activity. (1,4,25) The literature serves as a background to the area of personality and its role in athletics.

Chapter 3

METHODS AND PROCEDURES

The intent of this research was to determine the influence of personality traits of athletes who participated in track and field and their selection of events in which to compete; the secondary purpose was the determination of the differences between personality traits illustrated by individuals at the different levels of competition (junior high, high school, and college) that were tested in each of the four event classifications (sprints, distance, jumping, and throwing events).

The purpose of this chapter is to illustrate the methods and procedures of selecting the test sample from the population, the collection of the data and the manner in which it was analyzed. A description of the instrument used to establish the data needed to test the null hypotheses can also be found in this chapter. These methods and procedures are the basis of the validity of the study.

POPULATION AND SAMPLING

The population tested were athletes who competed in track and field at the junior high, high school and college levels of competition during the 1975 season. The sample was selected from the above population by receiving a list of athletes who attended

French Junior High School, Topeka West High School, and Emporia Kansas State College in December prior to the testing period. Permission to test the athletes was obtained by submitting a letter of application to the Research Committee of Unified School District #501 and permission slips to the parents of the athletes in #501. A letter was sent to Coach Phil Delavan at Emporia Kansas State College to obtain permission to test the athletes at Emporia Kansas State College. The sample represents a selection from the normal distribution of the athletes who participated in track and field during the 1975 outdoor season.

Six individuals in each of the four event classifications (sprints, distance, jumping, and throwing events) at each of the levels of competition (junior high, high school, and college) were selected randomly from the lists received from the coaches at the respective institutions. The selection process consisted of placing the names labeled by events and the levels of competition in a container and drawing six names from each container, assigning a number to each (i.e., S-1-1) signifying the event, level of competition, and the identity number. An athlete selected for two events was assigned to the first selection and another name was drawn to replace the duplication. The selection resulted in a test population of seventy-two subjects, twenty-four from each level of competition of which sixty-eight subjects completed the test. The four subjects who failed to complete the test did not show up during any of the dates the test was administered.

MATERIALS AND INSTRUMENTATIONS

To obtain the desired information about the influence of personality traits upon the event selection in track and field, the Edwards Personal Preference Schedule was administered. The Edwards, or more commonly the EPPS, was developed by Allen L. Edwards to minimize the influence of social desirability on the answers of personality inventories. Edwards used a two statement per question format rather than a yes or no answer to a single question. It is a forced-choice inventory as the subjects are required to answer every question regardless of the particular question's relevance to the individual.

The EPPS reports scores on fifteen key need variables showing their relative importance to the individual. The variables are: achievement, affiliation, nurturance, deference, intraception, change, order, succurance, endurance, exhibition, dominance, heter-sexuality, autonomy, abasement, and aggression. (8) Norms were established from the results of 1509 college men and women and 8963 adult men and women. The inventory was established for this use in this age group but has been used in this study with subjects of younger age brackets. (24)

The administration of the test took only forty minutes to complete and each subject was given an answer sheet, test booklet, and pencil. There are available both hand scored or machine scored answer sheets. Information concerning the costs of these items can be obtained through the catalog from the Bureau of Educational Measurements at Emporia Kansas State College. (8)

The EPPS has withstood tests of reliability of the variables as well as the correlation with other scales. The Guilford-Martin and Taylor Manifest Anxiety Scale were correlated with the EPPS and there existed a significant correlation between the variables of the EPPS, the Guilford-Martin, and the Taylor Manifest Anxiety Scale at the .05 level of significance. The results of the reliability, validity, and correlation with other scales of the EPPS can be found in the test manual which costs one dollar. (24)

DESIGN

The EPPS was given to each of the individuals selected from the population. They were divided into groups of six according to their event classification as well as their level of competition. To arrive at the individuals who would complete the inventory it was first required to obtain permission from Unified School District #501, the Topeka Public Schools, to test the individuals at French Junior High and Topeka West High School. A letter was sent to the Research Committee of the Topeka Public Schools to request forms that were required to complete research in #501. The committee approved the request for testing the athletes at French Junior High and Topeka West High School on January 14, 1975.

The approval of the study by the Topeka Public Schools carried the requirement that permission slips be sent to the parents of the students in the population used to select the sample. A letter was developed that explained the purpose of using the students and what would be expected of them. The letter was distributed February 13, 14 and 15 to each athlete who was a member of the

track team at French Junior High and Topeka West High School. (A copy of the letter can be found in Appendix A.) Upon receiving the slips from the parents granting permission to test the athletes a test date was set for March 15, at French Junior High. Due to the inability of some of the subjects to attend on this date, two other dates were set for March 28, and April 12.

The test date at Emporia Kansas State College was set for March 23, but was changed due to a conflict to April 4. The test was administered to the subjects at Emporia Kansas State College by Coach Phil Delavan. The same instruction for the test was given to both groups as discussed at a meeting with Dr. George Milton prior to the test date. The subjects were given an answer sheet, test booklet, and pencil, and instructed to circle the answer that best described them. Upon completion of the test they were free to leave. Names were not required on the test and the information is strictly confidential and used only as a statistic to test the hypotheses.

DATA COLLECTION

The athletes selected for the study at the junior high and high school levels were requested to be at French Junior High on March 15, at 10:00 A.M. Twenty-one of the junior high subjects and thirteen of the high school subjects were present. The remaining individuals were tested on March 28, and April 12, respectfully. The subjects were provided with the test booklets, answer sheets, and pencils. They were seated at the tables of the classrooms in the south open space at French Junior High School.

The instructions given were to read each pair of statements in each question and circle the statement that best described the individual. They were to answer every question even though neither statement described them very well, their selection was to be the closest of the two. The answer sheets had been labeled to distinguish the level of competition and the event classification of the subjects. When the athletes finished the test, they were free to go. The test took on the average forty-five minutes to complete.

The test was given to the athletes at Emporia Kansas State College on Friday, April 4. All of the selected athletes were present except two. The test was conducted by Coach Delavan as previously arranged. The instructions were similar to the ones given at French Junior High. Upon completion of the inventory the athletes were free to leave. The test took place at the classroom at Emporia Kansas State College.

After receiving the answer sheets from all of the subjects, they were scored by the researcher following the instructions in the test manual. The first step was the cancelling of certain questions and the circling of others by the use of a special template. This was to determine the consistency of the answers on the inventory. The raw scores were derived by counting the "A" answers circled in each of the fifteen rows, each row being one of the variables of the Edwards Personal Preference Schedule. The next step was to count the "B" answers circled in each column and then to add the two results together to arrive at the raw score for each of the fifteen variables. The data was collected to test

the null hypotheses of the study. A total population of sixty-eight athletes completed the inventory (jumping = 16; throwing = 17; distance = 18; sprints = 17; junior high = 23; high school = 22; college = 23).

DATA ANALYSIS

The results of the Edwards Personal Preference Schedule were collected for the data to test the significant difference between personality traits and event selection in track and field. It was also to test the significant difference between the levels of competition used in this study. The first step was the determination of significant differences between personality and event selection. To test the hypothesis of equal means, the analysis of the variance was computed to determine if there were any significant differences at the .05 level of significance between the different events. The F-ratio was calculated as follows:

$$F = \frac{MS_b}{MS_w}; \text{ with } df = k - 1, N - k.$$

The same procedure was conducted to determine the significant difference between athletes in the same event at the different levels of competition.

The t-score was calculated when a significant difference was detected to determine between which groups the significant differences occurred. The t-score was calculated as follows:

$$t = \frac{\overline{D}}{S_{\overline{D}}} \text{ where } \overline{D} = M_2 - M_1 \text{ and } D = X_2 - X_1$$

Chapter 4

ANALYSIS OF DATA

The purpose of this study was to investigate the relationship of personality traits and event selection in track and field. The secondary phase of this study was to discover if the personality traits illustrated by athletes from the same event are similar at the three levels of competition.

RESPONSE ANALYSIS

The study started with a population of seventy-two subjects of which sixty-eight completed the study. The athletes were members of the track teams at French Junior High, Topeka West High School, and Emporia Kansas State College during the 1975 season. The subjects were divided into two sub-groups. The first was based upon the event classification (sprints, distance, jumping, and throwing events) and the second on the levels of competition (junior high, high school, and college).

The first sub-group consisted of seventeen athletes who participated in sprinting events at the three levels of competition. The second sub-group was made up of eighteen athletes who participated in the distance events at the three levels of competition. Sub-group three consisted of sixteen athletes who participated in the jumping events at the three levels of competition. Seventeen

athletes who participated in the throwing events at the three levels of competition made up the fourth sub-group.

There were also three divisions that were based upon the athlete's level of competition. The three groups of this area were junior high (twenty-three), high school (twenty-two), and college (twenty-three).

STATISTICAL ANALYSIS

The analysis of the variance was used to test the null hypotheses; there was no significant difference between personality traits and event selection in track and field and there was no significant difference between the personality traits illustrated by athletes in the same events at the different levels of competition (junior high, high school, and college). The t-score was calculated to determine between which groups the differences occurred.

Personality Traits and Event Selection

The mean scores of the fifteen variables on the Edwards Personal Preference Schedule for the athletes according to their event classification are shown in Table 1 found on page 25. From these mean scores the F-ratio was used to determine the significant differences between the groups at the .05 level of significance. A F-ratio of 2.76 was considered significant ($F_{3,64}$ 2.76). In all cases of the comparison of the groups a significant F-ratio was not obtained. The F-scores, sum of squares, mean squares, and degrees of freedom for these groups are shown on pages 26,

Table 1

Mean-scores for all Subjects According to Event Classification

	Sprints	Distance	Jumping	Throwing
Achievement	14.23	15.88	15.00	14.05
Deference	11.29	10.50	12.37	10.88
Order	11.00	9.88	11.12	9.11
Exhibition	15.70	15.94	14.18	15.52
Autonomy	14.64	13.33	14.31	15.35
Affiliation	16.63	15.11	13.93	14.76
Intraception	14.00	14.33	12.77	14.11
Succorance	12.23	12.61	9.81	12.23
Dominance	12.41	13.38	13.68	13.82
Abasement	15.29	15.05	16.37	16.00
Nurturance	16.94	15.33	12.89	14.76
Change	14.52	13.66	16.12	14.23
Endurance	11.76	13.77	14.81	11.29
Hetersexuality	15.94	16.27	15.37	18.41
Aggression	13.35	14.55	15.37	14.94

Table 2

Analysis of Variance According to Event Classification

Achievement

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	36.736	3	12.245	0.702
Within	1115.777	64	17.434	
Total	1152.514	67		

Deference

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	22.013	3	7.337	0.642
Within	719.896	64	11.426	
Total	741.910	67		

Order

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	34.648	3	11.549	0.611
Within	1208.821	64	18.887	
Total	1243.470	67		

Table 2 (continued)

Exhibition

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	30.662	3	10.220	0.764
Within	823.146	64	12.861	
Total	853.808	67		

Autonomy

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	37.077	3	12.359	0.774
Within	1021.202	64	15.956	
Total	1058.279	67		

Affiliation

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	64.152	3	21.384	1.207
Within	1133.656	64	17.713	
Total	1197.808	67		

Table 2 (continued)

Intraception

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	1.602	3	0.534	0.025
Within	1327.514	64	20.742	
Total	1329.117	67		

Succurance

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	70.474	3	23.491	1.153
Within	1303.055	64	20.360	
Total	1373.529	67		

Dominance

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	20.578	3	6.859	0.317
Within	1382.303	64	21.598	
Total	1402.882	67		

Table 2 (continued)

Abasement

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	18.999	3	6.332	0.242
Within	1672.223	64	26.128	
Total	1691.220	67		

Nurturance

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	139.235	3	46.411	1.949
Within	1523.750	64	23.808	
Total	1662.985	67		

Change

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	55.235	3	18.411	1.102
Within	1069.004	64	16.703	
Total	1124.279	67		

Table 2 (continued)

Endurance

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	141.607	3	47.202	1.689
Within	1816.218	64	27.941	
Total	1957.862			

Hetersexuality

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	88.565	3	29.521	0.841
Within	2246.419	64	35.100	
Total	2334.985	67		

Aggression

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F
Between	37.849	3	12.616	0.600
Within	1345.017	64	21.015	
Total	1382.867	67		

27, 28, 29, and 30, in Table 2. Since there were no significant differences found between the groups, the null hypothesis is retained (There was no significant difference between personality traits and the event selection in track and field.).

Personality Traits of Sprinters and the Levels of Competition

The second null hypothesis was: There was no significant difference between personality traits of athletes in the same event and the levels of competition (junior high, high school, and college). The sprints was one of the classifications used to test this hypothesis. The means for sprinters according to their level of competition can be found in Table 4 on page 33. From these scores the analysis of the variance was calculated which obtained F-scores (Table 3 on page 32) to determine the significant difference between the athletes at the different levels of competition. The sprinters showed a significant difference between the athletes at the different levels of competition on the order variable (Table 4). The sum of squares (SS_b = 99.662; SS_w = 161.866), the mean squares (MS_b = 49.831; MS_w = 11.561), and degrees of freedom (2,14) were used to obtain the F-score of 4.309. To be significant at the .05 level of significance, the $F_{2,14}$ 3.76 must be obtained. The $F_{2,14}$ = 4.309 was significant at the .05 level of significance therefore, the null hypothesis would be rejected because there is a significant difference between the personality traits of athletes and their level of competition.

Table 3

Analysis of Variance for all Subjects
According to Levels of Competition

F-scores

	Sprints	Distance	Jumping	Throwing
Achievement	2.238	1.078	4.115	3.073
Deference	0.113	0.672	0.084	0.318
Order	4.309	0.034	0.615	7.112
Exhibition	0.371	0.839	0.632	1.779
Autonomy	0.080	2.052	1.240	0.013
Affiliation	3.024	0.323	0.089	0.255
Intraception	0.047	0.659	0.053	1.687
Succurance	0.098	0.363	2.514	0.573
Dominance	0.702	0.724	2.758	1.753
Abasement	0.320	1.510	0.048	1.624
Nurturance	2.107	0.365	0.120	0.348
Change	1.051	0.754	2.547	0.476
Endurance	1.135	0.635	4.067	1.045
Hetersexuality	3.581	4.354	1.783	0.006
Aggression	1.751	0.488	0.041	0.678

Table 4

Mean Scores for Sprinters According to the Levels of Competition

	Junior High	High School	College
Achievement	15.33	16.40	11.33
Deference	10.83	11.60	11.50
Order	15.33	7.40	9.66
Exhibition	16.33	16.20	14.66
Autonomy	15.33	14.20	14.33
Affiliation	13.16	18.20	18.83
Intraception	13.50	14.20	14.33
Succurance	11.83	13.00	12.00
Dominance	12.16	14.60	10.83
Abasement	15.83	14.20	15.66
Nurturance	14.50	16.20	20.00
Change	16.16	12.00	15.00
Endurance	13.83	11.20	10.16
Hetersexuality	12.50	14.20	20.83
Aggression	15.33	14.20	10.66

Table 5

Mean Scores for Distance Runners According to the Levels of Competition

	Junior High	High School	College
Achievement	14.50	15.17	18.00
Deference	12.67	11.50	7.83
Order	9.50	10.17	10.00
Exhibition	16.83	14.33	16.66
Autonomy	11.00	15.00	14.00
Affiliation	13.83	15.83	15.67
Intraception	15.67	14.33	13.00
Succurance	13.33	10.83	12.33
Dominance	11.33	13.83	15.00
Abasement	17.67	15.67	11.83
Nurturance	15.50	16.67	13.83
Change	15.33	13.17	12.50
Endurance	15.00	11.50	14.83
Hetersexuality	12.17	16.83	19.83
Aggression	15.33	15.00	12.83

Table 6

Mean Scores for Jumpers According to the Levels of Competition

	Junior High	High School	College
Achievement	14.20	12.83	18.40
Deference	12.80	11.83	12.60
Order	12.80	11.00	9.60
Exhibition	14.20	15.17	13.00
Autonomy	12.20	14.50	15.40
Affiliation	13.60	14.83	13.60
Intraception	14.00	10.50	14.20
Succurance	7.60	10.50	11.20
Dominance	16.20	17.00	15.00
Abasement	15.80	13.83	16.20
Nurturance	12.20	16.83	12.40
Change	17.80	14.67	13.60
Endurance	19.60	16.33	10.20
Hetersexuality	11.00	15.00	18.60
Aggression	15.40	10.33	15.80

Table 7

Mean Scores for Throwers According to the Levels of Competition

	Junior High	High School	College
Achievement	11.50	16.17	14.60
Deference	10.67	10.50	11.60
Order	11.50	4.83	11.40
Exhibition	14.50	17.83	14.00
Autonomy	15.17	15.50	15.20
Affiliation	15.50	14.67	14.00
Intraception	11.33	14.50	17.00
Succurance	14.17	11.17	11.20
Dominance	13.17	15.50	12.60
Abasement	14.17	15.67	18.60
Nurturance	15.17	15.50	13.20
Change	14.83	14.83	12.80
Endurance	12.83	9.17	12.00
Hetersexuality	18.50	18.50	18.20
Aggression	15.83	15.50	13.20

Table 8

Analysis of Variance of Order Variable for Sprinters According to the Levels of Competition

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between	99.662	2	49.831	4.309
Within	161.866	14	11.561	
Total	261.529	16		

The t-scores were calculated to determine between which groups the significant difference occurred. The t-score of 3.603 was obtained for the comparison of the junior high and high school levels of competition. The difference was caused by these two groups as the $t_9 = 3.603$ is significant at the .05 level of significance (t_9 2.262).

Table 9

The t-scores for Sprinters According to Levels of Competition

Levels of Competition	Degrees of Freedom	t-score
Junior High vs. High School	9	3.603
High School vs. College	9	0.990
Junior High vs. College	10	1.770

Personality Traits of Distance Runners and the Levels of Competition

The distance events were another classification used to test the null hypothesis that there was no significant difference between the personality traits illustrated by individuals in the same sport at the different levels of competition. The mean scores were calculated for the different levels of competition (Table 5 on page 34). From these scores the analysis of the variance was calculated. The F-scores can be found on page 32 in Table 3. There was a significant difference at the .05 level of significance on the hetersexuality variable between the distance runners at the three levels of competition. The sum of squares (SS_b = 179.111; SS_w = 308.500), the mean squares (MS_b = 89.555; MS_w = 20.566) and the degrees of freedom (2,15) were used to obtain the $F_{2,15}$ = 4.354. This is significant as it is in the critical area of $F_{2,15}$ 3.68 at the .05 level of significance. Therefore, the null hypothesis is rejected as there is a significant difference between the personality traits of athletes at the different levels of competition.

Table 10

Analysis of Variance for Distance Events According to the Levels of Competition

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between	179.111	2	89.555	4.354
Within	308.500	15	20.566	
Total	487.611	17		

To determine between which groups the difference occurs, the t-score was computed. The junior high and college athletes was where the difference occurred by calculating a $t_{10} = 2.520$ which is significant at the .05 level of significance (t_{10} 2.228).

Table 11

The t-scores for Distance Events According to Levels of Competition

Levels of Competition	Degrees of Freedom	t-score
Junior High vs. High School	10	1.818
High School vs. College	10	1.380
Junior High vs. College	10	2.520

Personality Traits of Jumpers and the Levels of Competition

The levels of competition for the jumping events were used to determine the outcome of the null hypothesis (personality traits versus the levels of competition). The mean scores (Table 6 on page 35) were used to calculate the F-scores (Table 3, page 32). The jumpers illustrated a significant difference on both the achievement variable and endurance variable. The sum of squares (SS_b = 89.166; SS_w = 140.833), mean squares (MS_b = 44.583; MS_w = 10.833), and the degrees of freedom (2,13) calculated an $F_{2,13} = 4.115$. The $F_{2,13}$ 3.81 was read significant at the .05 level of significance, therefore the $F_{2,13} = 4.115$ is significant. The null hypothesis was rejected as a significant difference existed between the personality traits and the three levels of competition.

Table 12

Analysis of Variance for Jumpers on Achievement Variables According to Levels of Competition

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between	89.166	2	44.583	4.115
Within	140.833	13	10.833	
Total	230.000	15		

The t-score was calculated to determine between which groups the significant difference occurred. The high school and college athletes with a $t_9 = 3.008$ illustrates the difference that is significant at the .05 level of significance (t_9 2.262).

Table 13

The t-scores for Jumping Events According to the Levels of Competition on Achievement Variable

Levels of Competition	Degrees of Freedom	t-score
Junior High vs. High School	9	0.678
High School vs. College	9	3.008
Junior High vs. College	8	1.897

There was also a significant difference between the athletes in the jumping events on the endurance variable. A $F_{2,13} = 4.067$ was calculated from the sum of squares ($SS_b = 221.104$; $SS_w = 353.333$), the mean squares ($MS_b = 110.552$; $MS_w = 27.179$), and the degrees

of freedom (2,13). The $F_{2,13}$ 3.81 is the computed significant value at the .05 level of significance. Therefore the calculated $F_{2,13} = 4.067$ is significant and the null hypothesis is rejected.

Table 14

Analysis of Variance for Endurance Variable According to Levels of Competition

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between	221.104	2	110.552	4.067
Within	353.333	13	27.179	
Total	574.437	15		

The t-scores calculated for the levels of competition to determine between which groups the differences occur. The $t_8 = 3.409$ was significant at the .05 level of significance as the computed value is t_8 2.306. The college athletes differed from the junior high athletes on the endurance variable.

Table 15

The t-scores for Jumping Events According to the Levels of Competition on Endurance Variable

Levels of Competition	Degrees of Freedom	t-score
Junior High vs. High School	9	1.373
High School vs. College	9	1.434
Junior High vs. College	8	3.409

Personality Traits of Throwers and the Levels of Competition

The fourth group used to study the second null hypothesis were the athletes in the throwing events. The mean scores (Table 3, page 32) were calculated for each of the three levels of competition. The sum of squares (SS_b = 170.231; SS_w = 167.533), the mean squares (MS_b = 85.115; MS_w = 11.966), and the degrees of freedom were used to calculate the $F_{2,14}$ = 7.112. The $F_{2,14}$ 3.74 was the tabled value at the .05 level of significance. The null hypothesis would be rejected as there is a significant difference between the athletes at the three levels of competition because the $F_{2,14}$ = 7.112 falls in the critical area.

Table 16

Analysis of Variance for Throwers on the Order Variable According to the Levels of Competition

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between	170.231	2	85.115	7.112
Within	167.533	14	11.966	
Total	337.764	16		

The determination of between which groups the differences occurred was calculated by the t-score. The throwers had two significant t-scores (t_{10} = 3.682; t_9 = 3.285) that showed the difference between the high school athletes and the other two groups (college and junior high athletes) at the .05 level of significance (t_{10} 2.228; t_9 2.262).

Table 17

The t-scores for Throwers on the Order Variable According to the Levels of Competition

Levels of Competition	Degrees of Freedom	t-score
Junior High vs. High School	10	3.682
High School vs. College	9	3.285
Junior High vs. College	9	0.042

SUMMARY

The analysis of the variance was used to determine the outcome of the two hypotheses being tested. There was no significant difference between personality traits and the event selection in track and field. There was no significant difference between the personality traits of athletes from the same event at the three levels of competition (junior high, high school, and college). The F-scores (Table 2) obtained in the test of the first hypothesis were not significant at the .05 levels of significance therefore the first hypothesis was retained. The F-scores (Table 3) obtained to test the second hypothesis were significant at the .05 level of significance therefore, the null hypothesis is rejected.

Chapter 5

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The summary, findings, conclusions and recommendations of this study are found in this chapter. The summary, findings, and conclusions are based upon the outcomes of the statistical data. The recommendations for future study in this area of personality and athletics are in this chapter.

SUMMARY

The intent of this research was to determine the role personality traits have in the selection of events in track and field and the personality traits of athletes in the same event at the junior high, high school, and college levels of competition.

There were sixty-eight subjects who were members of the track teams at French Junior High School, Topeka West High School, and Emporia Kansas State College during the 1975 season. The test data was collected by the completion of the Edwards Personal Preference Schedule. The tests were administered in March and April at French Junior High School and Emporia Kansas State College.

The analysis of the variance was calculated to determine the outcomes of the two hypotheses. The F-scores obtained comparing the event selections failed to show any significance at the .05 level of difference between the four groups. The F-scores obtained

comparing the personality traits of athletes at the three levels of competition showed that significant differences were in existence at the .05 level of significance. The t-score was computed to determine between which groups the differences occurred. The first null hypothesis was retained and the second one rejected. The results can be found in Chapter 4 in table form.

FINDINGS

The findings of this study showed that no significant differences occurred between the events at the .04 level of significance ($F_{3,64}$ 2.76) as all of the calculated F-ratios (Table 2) were not in the critical range.

There were significant differences between the athletes at the three levels of competition. The sprints illustrated a significant difference ($F_{2,14}$ 3.76) between the levels of competition on the order variable with the calculated $F_{2,14} = 4.309$. Between the three levels of competition, the hetersexuality variable showed a significant difference for the distance events ($F_{2,15} = 4.354$) at the .05 level of significance ($F_{2,15}$ 3.68). With an $F_{2,13} = 4.115$, the athletes at the junior high, high school and college levels in the jumping events differed significantly ($F_{2,13}$ 3.81) on the achievement variables. The jumpers also scored significantly on the endurance variable ($F_{2,13}$ 3.81) with a calculated $F_{2,13} = 4.067$. The throwing events differed significantly between the levels of competition at the .05 level of significance on the order variable with a calculated $F_{2,14} = 7.112$ where $F_{2,14}$ 3.74 is significant.

CONCLUSIONS

The findings of this research were unable to determine any significant differences between the personality traits of athletes and the events in track and field in which they participate. The review of literature found in Chapter 2, determined differences existed between athletes and nonathletes, different sport groups, and athletes of the same sports from the national norms established for the instrument used. The research completed here used a homogeneous group (track athletes) and attempted to determine any significant differences between the sub-groups formed by event classification unlike the research reviewed in Chapter 2.

There were significant differences between the athletes at the junior high, high school, and college levels of competition in all four event classifications. These findings support those previously mentioned (Booth, Slusher, and others) in the review of literature under the topics of athletes from different sport groups and athletes versus nonathletes. These findings could be an indication of the instability of personality traits in the individuals at the different age levels, The varied experiences of the subjects as they have grown could have affected this outcome to be true. The college aged subjects would have had a more varied group of experiences than the junior high and most of the high school subjects. The results show that differences do occur between the levels of competition tested and personality traits.

RECOMMENDATIONS

The results of this study failed to indicate the difference between the event selection in track and field of the athletes and their personality traits. The research reviewed indicated differences to occur between athletes and nonathletes, different sport groups, and the athletes of the same sport from the national norms established for the testing device used. Thus, recommendations for future study in the area of personality traits and event selection in track and field would be:

1. The selection of a cross section of athletes representing different socio-economic backgrounds at all three levels of competition.

2. The use of a larger population to enhance the reselection of subjects to replace those who are unable to complete the test for various reasons.

3. A selection of a measuring device that would be more compatible to the age differences used.

4. A more distinct classification of sub-groups according to the event participation of the subjects.

Recommendations for future study deriving from this research would be:

1. The study of the relationship of personality traits and event selection in track and field at the junior high, high school, and college levels using both men and women.

2. The study of the comparison of men and women track athletes and their personality traits by the events in which they participate.

3. The comparison of personality traits of track athletes at varying sizes of institutions according to their events in which they participate.

4. The study of women athletes who participated in track and field and the influence of personality traits upon the events selected for participation.

The recommendations could improve the research completed in this study and the results could be different by carrying out these recommendations.

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BIBLIOGRAPHY

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APPENDIX

APPENDIX

Dear Parents:

This letter is to request your permission to administer a test in coordination with my Master's thesis. This letter will answer some of the questions that you may have concerning the use of the results. It will also serve as an introduction of me to you.

I am a teacher and coach at French Junior High and am presently completing my Master's Degree in physical education at Emporia Kansas State College. The title of my thesis is "The Relationship of Personality Traits and the Selection of nrack and Field Events in Junior High, High School, and College."

To test the hypothesis I plan to test a random selection of athletes who participated in track and field at French Junior High, Topeka West High School and Emporia Kansas State College. The Edwards Personal Preference Schedule will be administered to the selected athletes. This is a personality inventory that gives scores on fifteen different areas. The tests will be scored and the results interpreted by the testing service at Emporia Kansas State College. The scores will be used only to test the hypothesis and the results will be kept in very strict confidence and names will not be used. The test will take approximately an hour and a half. It will be administered on Saturday March 15, 1975 at 9:30 at French Junior High.

I have received permission from the Topeka Public Schools to arminister the test to these students. If you have any questions, you may contact me at French Junior High or at my home. The telephone number at French is 272-2676 and at my home it is 267-3267.

If you have no objections, please sign the permission slip and return the slip with your child to either Coach Schrag or myself. If you would like to see a copy of the test, you may contact me and I will get one to you. Thank you for your help.

Sincerely,

Timothy W. Thomas

I give my permission for _____ to complete the Edwards Personal Preference Schedule for Mr. Thomas' thesis work.

Signed _____ Date _____