The problem of this study was to determine the relationship between selected autobiographical data and the personality characteristics of high school basketball players.

The Athletic Motivation Inventory (AMI) measured the personality traits of 150 high school basketball players. The Individual Data Questionnaire was used to identify background characteristics for comparison with the AMI trait scores. The AMI and the questionnaire were administered at 12 high schools in the metropolitan area of Portland, Oregon during the spring of 1974.

Statistical significance was arbitrarily set at the .05 level of confidence, and the hypotheses for the study were formulated and tested by appropriate statistical methods. Simple linear regression analysis was used to test 14 hypotheses which stated that there were no significant trends in the relationship of the AMI scores and the autobiographical data. The remaining 13 hypotheses were tested by t-test to determine significant differences between the means of the trait scores for various populations within the study. Of the 27 null
hypotheses, 23 were rejected when significant trends or differences were found on one or more of the 11 AMI traits.

It was found that there were differences between black players and white players on three traits. Low social status subjects scored lower than middle and high status subjects on one trait. When races were compared at each status level, there were no differences among low status subjects. There was a difference on one trait at the middle status level and on one trait at the high status level. Because there were only two white subjects at the low status level and only one black at the high status level, those comparisons are probably based on insufficient numbers for proper statistical analysis.

When players who lived with both natural parents were compared with those living with one natural parent or a relative, no differences were found. A third group made up of subjects living with one natural parent and a stepparent was found to score lower than each of the first two groups on a single trait. Subjects who were first-born children scored higher on one trait than later-born children. As family size increased, the subjects' scores tended to decrease on six traits.

Scores tended to increase on one trait as the subjects' level of educational aspirations increased. There was a tendency for scores to increase on eight traits as the subjects' level of leadership attained in school organizations increased. As the subjects' attitude toward school grew more positive, scores tended to increase on six traits. The subjects' scores tended to increase on two traits and to decrease on one as their fathers' level of educational achievement increased.
As the level of educational achievement of the mothers increased, the subjects' scores tended to increase on four traits.

There was a tendency for scores to increase on three traits as the subjects' length of organized basketball experience increased. Subjects who were starters tended to score higher than substitutes on two traits. The subjects were divided into four groups according to the number and combination of sports in which they participated. In all six possible comparisons among the four groups, differences were found on one or more traits. No relationships were found between the AMI scores and the level of basketball honors achieved by the subjects. There were no relationships between the subjects' scores and the level of athletic achievement of their fathers. As the level of athletic achievement of the mothers increased, the subjects' scores tended to increase on four traits. Scores tended to increase on four traits as the subjects' level of athletic aspirations increased.
An Analysis of the Relationship Between
Selected Autobiographical Data and the
Personality Traits of High School Basketball Players

by

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AN ANALYSIS OF THE RELATIONSHIP BETWEEN SELECTED AUTOBIOGRAPHICAL DATA AND THE PERSONALITY TRAITS OF HIGH SCHOOL BASKETBALL PLAYERS

INTRODUCTION

Athletics are a part of the extracurricular activities operating within the larger framework of education. An extracurricular subject is generally a special interest area that may provide a release from the normal academic routine. However, when considered from the standpoint of time involved and motivation to participate, athletics represent an area of vast potential in education for influencing the social and psychological development of the individual.

It is not unusual for a student to spend more time with athletics than with any other subject area in which he (or she) is enrolled. The athlete commonly averages more than two hours per day developing his skills and learning to work with teammates and coaches. The athlete participates voluntarily, indicating a high degree of motivation for his sport. In addition, the competition with others results in a constant pressure for improvement. These circumstances combined place the coach in an enviable position among educators. He works with students in an unusual atmosphere, highly conducive to learning.

While this great potential is nearly always present in athletics, it probably goes largely untapped because of a lack of preparedness on the part of coaches to use special information about athletes. Research in the social-psychological area of
athletics has only recently begun and is limited by a lack of qualified researchers in the coaching profession. Edwards (1973) has recognized this need.

According to Edwards:

In a survey of the qualifications of 137 coaches affiliated with 18 California state colleges and three private West Coast universities, it was found that, as of January, 1970, 78 percent had obtained master's degrees, 19 percent had obtained bachelor's degrees, and only three percent had the educational doctorate or the Ph.D. Thus, one reason why scholarly investigation and writing has not kept pace with the growth of athletics relative to popular interest is that those who are professionally involved in the institution are not, for the most part, trained or oriented toward carrying out rigorous research and analysis. And no scientific research means no scientific reporting (p. 6).

Statement of the Problem

The central problem of this study is to determine the relationship between selected autobiographical data and the personality traits of high school basketball players.

Objectives

To analyze the data for the purpose of determining the relationship between the selected autobiographical data and the personality traits of the subjects as measured by the Athletic Motivation Inventory.

To increase the understanding of the possible application and use of the Athletic Motivation Inventory.
To contribute to the understanding of how the high school athlete's individual characteristics affect his motivation.

Significance of and Need for the Study

The disciplines of sociology and psychology have produced enormous amounts of information that might apply to problems in athletics. A review of the literature shows little evidence that research in athletics has been conducted by those qualified in related areas.

Again, quoting Edwards:

A second factor underlying the lack of a flourishing sociologically oriented research interest in athletics proportionate to its popular social significance is that disciplines outside of physical education have traditionally ignored sport as a realm of human behavior worthy of serious scholarly investigation.

We know that the athlete is a unique product of his environment and that his performance will be influenced by his individual characteristics. Blending the personalities of a number of athletes into a cohesive unit is one of the most difficult and challenging tasks in coaching. The athlete in the sports based on individual performance must also rely on a workable relationship with his coach. Therefore, if existing knowledge could be better applied to problems in athletics and made available to coaches, perhaps participation could be made more profitable for all concerned. Cratty (1973) is aware of the possibilities in this regard.
In his introduction, he states:

Furthermore, the athlete is invariably influenced in both obvious and subtle ways by the social context in which he performs. The social psychologist in dealing with such topics as the nature of human groups, leadership, competition, and cooperative efforts of people, has produced information that is potentially useful to the coach and his athlete (p. 5).

Considering the potential for influencing human development lying at the coach's fingertips, it would seem worthwhile to study the make-up of the athlete and factors influencing his performance. There have been efforts to study the personality of the athlete, but little has been done to relate that information to his background.

Cratty suggests a study of the athlete and his family:

The coach should attempt to study the nature of the total family complex in which his athletes find themselves. As has been pointed out, attitudes, physical abilities, and the time taken for vigorous activities on the part of parents are closely linked to these qualities in their children. Thus, the family make-up, the ordinal position of the child, and the mental set of the father and mother are important modifiers of the effort and attitude of the athlete (p. 222).

Coaches usually do not really know the athletes with whom they work. Differences between individuals can be pronounced enough to require different approaches in coaching. The coach, usually not trained to recognize those differences, typically will treat all of his athletes the same. Tests devised to produce personality profiles provide an important step toward a better understanding of the athlete.
Quoting Cratty:

Personality trait scores, coupled with thorough analyses of interviews, autobiographical data, or projective tests, may identify team members whose emotional adjustment will need attention now or as the result of sustained practices or taxing competitions (p. 82).

The present study is an attempt to examine the influence of individual background factors by comparing them with the personality trait scores of the subjects. The Athletic Motivation Inventory will provide the personality trait profile to be used in the study. It will be assumed that the personality trait scores are valid for the purposes of the study. The analysis will attempt to show differences in personality that might be attributed to particular background factors.

This study covers a broad spectrum of background characteristics. Many of the characteristics included have been researched very little or not at all. A few have been examined in depth but not as they relate to the athlete's personality. It is the intent of the writer to provide a study that encompasses a wide variety of the influences that one might expect in an athlete's personal background. The characteristics used in this research were identified with the assistance of the doctoral committee members who represented the departments of physical education and sociology. Certainly, other characteristics could have been included. The present list represents a reasonable degree of variety and satisfies the writer's desire to investigate some particular characteristics. Such an approach creates a lengthy list of hypotheses, any one of which
could serve as the basis for an entire research project. The purpose here, however, is to apply the AMI to a reasonably complete set of background characteristics. Perhaps others will visualize combinations of fewer or of different factors for future research.

Definitions

The following terms are defined to give the reader a clearer understanding of this study.

Personality

The total reactions of an individual and the synthesis of his subjective, emotional, and mental life (Carter, 1959).

Personality Traits

The variables that are measurable and specific and involve the total personality (Ogilvie, Tutko, and Lyon, 1968).

Athletic Motivation Inventory

The AMI is a paper and pencil self-evaluation athletic personality inventory measuring 11 traits which are related to high athletic achievement. The AMI traits are as follows as defined by Ogilvie et al. (1968).

Drive. Desire to win or be successful; competitive; likes to be challenged; winning is placed above other things; athletics comes first in his life; gets upset about losing.

Self-confidence. Sure of himself and of his ability; does not worry too much; handles unexpected situations well; accepts criticism easily; does not show indecisiveness; speaks up for what he believes to coaches and players.
Aggression. Thinks it is necessary to be aggressive to win; easy for him to be aggressive; likes to argue; concerned about not getting pushed around; likes physical contact; speaks out when he is angry; wants to get back at people who beat him.

Coachability. Respects the coaches and accepts their advice; respects the training rules; is a team player, not an individualist; accepts the leadership of the team captain; values coaching and considers it important to a good athlete; talks to the coach about his ideas for a game.

Determination. Sticks with things; does not give up easily; willing to practice long and hard; is one of the first out to practice and one of the last to leave; works on skills until he is exhausted; often works out by himself.

Emotionality. Mature and stable; not affected by his feelings; often does not let his feelings show; not easily depressed or frustrated by bad breaks, calls, or mistakes; shows self-discipline; does not lose his temper easily and, if he does, he calms down quickly.

Conscience development. Likes to do things as correctly as possible; does not try to bend the training rules to fit his own needs; places the good of the team above his personal well-being; is not late for practice; does not try to con the coach.

Trust. Accepts people at face-value; does not look for ulterior motives behind what others do or say; believes what the coaches or other players say to him; tends to get along well with his teammates.

Guilt proneness. Accepts responsibility for his actions; willing to withstand much physical and mental pain; tends to dwell on his mistakes and punish himself for them; will play hard even if he is injured; tends to take the blame even when it is not his fault.
Leadership. Likes to influence his teammates; likes to make decisions; likes to lead his teammates; is good at getting what he wants; probably wins most of the arguments he gets into; outspoken; takes charge of things.

Mental toughness. Can take rough handling; does not get easily upset when losing, playing badly, or being spoken to harshly; accepts strong criticism without being hurt or getting upset; does not need too much encouragement from the coach; does not depend on the team for a "sense of belonging" (Ogilvie et al., 1968).

Race

In this study, the term "race" is not based on the scientific proof of characteristics that can be used to separate humans into racial groups. Each subject was asked to list his race as a response on the questionnaire. He was classified as either black or white according to that response. Blacks were those who referred to themselves as black, Negro, Afro-American, black American, and African. Whites were those who referred to themselves as whites or Caucasians. No other groups, or "races", were identified.

Social Status

All of the listed variables were obtained through a questionnaire filled out by the subjects. All but one of the variables were readily identified according to the questionnaire response. The variable pertaining to socioeconomic status was determined by interpreting information from the questionnaire.

Warner, Meeker, and Eells (1949) used a seven point rating scale to determine social class position. For this study, the seven point scale was condensed into a three point scale. It
was decided that the number of subjects (n=150) could be more clearly separated into social classes on a three point scale. Levels one and two on the Warner scale were combined into a high social class rating, levels three through five into a middle rating, and levels six and seven into a low rating. The occupation of the father was then used to classify each subject into one of the three social class levels. In cases of father absence, the person used was the one from whom the family received its chief support.

There appears to be ample support for estimating social status on the basis of the father's occupation. Hetzler (1953), Hollingshead (1958), and Kahl (1955), all recognize the occupational scale as the best single predictor of social class position.

**Specific Problems**

Through the use of a structured autobiographical questionnaire, the following variables were obtained from the subjects for comparison with their personality trait scores as measured by the Athletic Motivation Inventory (Ogilvie, Tutko, and Lyon, 1970a). The variables are listed under separate headings as either non-athletic factors or as athletic factors that might influence the personality of the subject, or that might be influenced by his personality.
Non-Athletic Factors

1. Race
2. Social status
3. Parent status
4. Birth order
5. Family size
6. Educational aspirations
7. Leadership in school offices or organizations
8. Attitude toward school
9. Educational achievement of the parents

Athletic Factors

1. Length of organized basketball experience
2. Starters and substitutes
3. Total sports participation
   a. basketball only
   b. basketball and a fall sport
   c. basketball and a spring sport
   d. basketball and a fall and a spring sport
      (three sports)
4. Basketball honors won
5. Athletic background of the parents
6. Athletic aspirations

Limitations

According to Whitla (1968), completely accurate statistical measurement may be difficult to achieve with a personality questionnaire. Subjects may respond in a socially desirable manner, or they may make inaccurate responses because of individual reading limitations.
The Athletic Motivation Inventory (AMI) is the only personality questionnaire available which pertains directly to athletics. Therefore, the results cannot be correlated with other personality questionnaires.

The total sample of 150 basketball players represented 12 high school teams, all of which enjoyed from moderate to high success in competition. Unsuccessful attempts were made to include teams which had poor competitive records. Either the coaches of losing teams declined the invitation to participate, or they were unable to gain the cooperation of their players. The office of graduate research required that all subjects used in research be volunteers. The results might have been affected in some respects if better balance had been achieved in regard to the number of winning and losing teams included in the study.

When the population was broken down for specific comparisons, the resultant groups were sometimes smaller than is desirable for satisfactory statistical measurement. For example, the subjects of high social status totaled 31, but only one of those was black. It might have been impossible to enlarge that segment of the population, however, because approximately 90 percent of the black varsity basketball players in Oregon were represented in the study.

This study is an attempt to compare the results of the AMI with a wide range of characteristics found among high school basketball players. Careful consideration of the results may
contribute to a better understanding of the personality makeup of the athlete and of the possible uses of the AMI. However, because of the size and nature of the population of this study, its results cannot be inferred to any other population.

**Delimitations**

For the purposes of this study, the Athletic Motivation Inventory (AMI) was administered to high school basketball players as a measurement of their perception of their personality traits. Autobiographical data were obtained for comparison with the AMI scores by administering a questionnaire to each subject. The study included 150 varsity basketball players from 12 high schools in the metropolitan area of Portland, Oregon. At each school, the AMI and the questionnaire were administered at a meeting of the players with the writer.

**Hypotheses**

Specific hypotheses were formulated and tested by appropriate statistical methods.

1. It was hypothesized that there were no significant differences in the mean scores on the Athletic Motivation Inventory between black basketball players and white basketball players of the total sample.

2. That there were no significant differences in the AMI scores that were attributable to social status.
3. That there were no significant differences in the AMI scores of low status black basketball players and low status white basketball players.

4. That there were no significant differences in the AMI scores of middle status black basketball players and middle status white basketball players.

5. That there were no significant differences in the AMI scores of high status black basketball players and high status white basketball players.

6. That there were no significant differences in the AMI scores of players who lived with both natural parents and players who lived with one parent and a stepparent.

7. That there were no significant differences in the AMI scores of players who lived with one parent and a stepparent and players who lived with one parent or a relative.

8. That there were no significant differences in the AMI scores of players who lived with both natural parents and players who lived with one parent or a relative.

9. That there were no significant differences in the AMI scores of players who were first-born children and players who were later-born children.

10. That there were no significant AMI score differences which could be attributed to family size.

11. That there were no significant relationships between the subjects' AMI scores and their level of educational aspirations.
12. That there were no significant relationships between the subjects' AMI scores and the level of leadership they attained in school offices or organizations.

13. That there were no significant relationships between the subjects' AMI scores and their attitude toward school.

14. That there were no significant relationships between the subjects' AMI scores and the level of educational achievement of their fathers.

15. That there were no significant relationships between the subjects' AMI scores and the level of educational achievement of their mothers.

16. That there were no significant relationships between the subjects' AMI scores and the length of their participation in organized basketball.

17. That there were no significant differences in the AMI scores of players who were starters and players who were substitutes.

18. That there were no significant differences in the AMI scores of players who participated in basketball only and players who participated in both basketball and a fall sport.

19. That there were no significant differences in the AMI scores of players who participated in basketball only and players who participated in both basketball and a spring sport.

20. That there were no significant differences in the AMI scores of players who participated in basketball only and players who participated in three sports.
21. That there were no significant differences in the AMI scores of players who participated in basketball and a fall sport and players who participated in basketball and a spring sport.

22. That there were no significant differences in the AMI scores of players who participated in basketball and a fall sport and players who participated in three sports.

23. That there were no significant differences in the AMI scores of players who participated in basketball and a spring sport and players who participated in three sports.

24. That there were no significant relationships between the subjects' AMI scores and the level of basketball honors they achieved.

25. That there were no significant relationships between the subjects' AMI scores and the level of athletic achievement of their fathers.

26. That there were no significant relationships between the subjects' AMI scores and the level of athletic achievement of their mothers.

27. That there were no significant relationships between the subjects' AMI scores and their level of athletic aspirations.

Method of Study

The relationship study is the most applicable method of research in this case, according to Clarke and Clarke (1970). This method requires at least two different measures to be compared on similar
subjects, or two or more subjects to be compared on the same measure. In order to satisfy important research criteria, subjects should be selected with care, the most suitable testing instrument should be selected, and significant statistical inference should be applied.

The study population was not selected as a random sample. The subjects were from those teams that were available to the writer through his associations with other basketball coaches. Therefore, statistical inference to total basketball populations is not possible. It may be possible to make some judgmental inferences to basketball players from similar athletic and school environments.

For the purpose of this study, the personality traits of the subjects were measured by the Athletic Motivation Inventory (AMI). A questionnaire was devised for getting specific background data about the players for comparison to the AMI trait scores. The administration of the procedures used in this study are explained in Chapter III.

Organization of the Remainder of the Study

Chapter II reviews the literature related to this study. Chapter III explains the procedures used. Chapter IV analyzes the data and lists the conclusions. Chapter V contains the summary, discussion, and recommendations.
REVIEW OF THE LITERATURE

The literature reviewed in this chapter explains what is known about the influence of the selected variables on the development of personality traits.

Only a few studies have been made using the Athletic Motivation Inventory. Therefore, most of the research reviewed does not parallel the terminology of the AMI, nor does it deal specifically with athletes. Much of the available AMI research deals with athletes above the high school level and in sports other than basketball.

Some of the athletic variables have never been researched. In those cases, a review of related literature is either impossible or very limited.

Race

In recent years, the black athlete has dominated the sport of basketball. A popular explanation of this phenomenon is that athletics is one of the few available opportunities for the black male to achieve social mobility. Through his athletic endeavors, he seeks recognition that is denied him in other areas of society.

Kardiner (1966) suggests that society has taken from the black male the opportunity for masculine actualization through the elimination of traditionally male responsibilities. Stewart (1971) considers Kardiner's theory as an influence that the black athlete enters the athletic environment with unique differences in
his psychological makeup.

Some researchers have found blacks to achieve better self-concept scores than whites. Stewart (1971) has attempted to compare black and white athletes using the Athletic Motivation Inventory as a measuring device. He administered the AMI to 197 college basketball players, 43 of whom were black. The mean scores for blacks were higher in eight of the 11 traits. A univariate analysis of variance showed significant differences at the .05 level of confidence for the traits of self-confidence, aggressiveness, determination, and mental toughness.

Research by Dales and Walters (1969) was conducted in 29 high schools in North Florida. Over a three year period, 762 culturally deprived adolescent males, evenly divided by race, were administered the Bills Index to Adjustment and Values. The results showed, among culturally deprived youth, that blacks surpassed whites in self-concept scores from grades nine through 12. Separate comparisons were made at each level using the standard t-test for independent samples. Blacks scored significantly higher at grade nine and grade 12, with the greatest difference occurring at grade 12.

Several investigators have found that there is no significant difference between blacks and whites in regard to self-concept. Getsinger (1972) used three measures of self-concept to test adolescents from three socio-economic levels. The subjects included 198 low income blacks, 66 middle income whites, and a high status
group of 77, one of whom was black. The instruments used were the Coopersmith Self-Esteem Inventory, the Soares and Soares Test, and the Ziller Test. The findings indicated either that race is inconsequentially related to self-concept in the age group studied, or that typical self-concept measures are not sensitive to differences that exist.

Rosen (1959) hypothesized that many racial and ethnic groups are not alike in their orientation towards achievement, and that this difference in orientation has been an important factor contributing to the dissimilarities in their social mobility rates. Rosen's sample included 954 subjects from 62 communities in four Northeastern states. Social class position was determined by using the occupation of the main wage earner of the family. A projective test and a personal interview were employed as the research instruments.

It was found that there were no significant differences among the ethnic groups. The researcher concluded that neither race nor social class alone is sufficient to predict an individual's score, and social class is a better predictor of motivation than ethnicity.

Other than Stewart's use of the AMI to study college basketball players, Hunt (1969) is one of the few researchers to deal with the subject of differences between black and white athletes. This study was designed to investigate the differences between black and white athletes and non-athletes in four personality traits as measured by the Gordon Personal Profile. A total of 111 subjects were divided into four groups based on their ethnic background and their athletic ability.
No significant differences occurred when white varsity athletes and black varsity athletes were compared, or when white non-athletes and black non-athletes were compared. The only differences appeared when athletes were compared with non-athletes. Athletes ranked higher than non-athletes in ascendancy, responsibility, and emotional stability.

Rosenberg (1965) found that blacks were not significantly lower than whites in self-concept scores. He observed that since minority group members are likely to band together as a majority group to live, the minority group child may receive as much acceptance as the majority group child does in his environment.

Hodgkins and Stakenas (1969) studied high school students in segregated schools in the Deep South and found no significant differences between blacks and whites in self-concept scores. Research by Coleman et al. (1966) found no difference in the self-concept of black and white youth in the educational setting.

Very little research is available that indicates lower performance on the part of blacks. Froe (1964) administered two personality inventories to large groups of Negro college freshmen. He summarized his research with the observation that low scores seemed to imply a lack of self-confidence, indecision, inhibited responses, and an avoidance of situations of tension and decision.

Hodgkins and Stakenas erroneously refer to the Dreger and Miller (1960) study as evidence of a negative self-image, or self-hatred, among Negroes. Closer examination of Dreger and Miller
does not support that contention. The Dreger and Miller research compares numerous studies dealing with Negroes and definitely is not supportive of the self-hatred theory. On the contrary, the authors caution against the acceptance of any of the studies which they review. They suggest that most, if not all, studies dealing with Negro subjects may make unjustified judgments because of pre-conceived biases on the part of the researchers. Dreger and Miller point out that the trend in recent years has been to find many factors of previously unquestioned hereditary nature attributable to experience. The point of their study is to discount the bulk of the research pertaining to Negroes, not to support it.

There is additional evidence that the self-image of blacks is improving. The famous doll studies by Clark (1947), Goodman (1952), and Gregor (1964) were used to show that black children tended to choose a white doll over a black doll when asked to pick the "nice" doll. Ward and Braun (1972) replicated those studies, finding an apparent change in the black self-image. They found that 70 percent of the black children chose the black doll as the "nice" puppet, 82 percent selected the black puppet as the one that is a "nice" color, and 79 percent designated the white puppet as the one that "looks bad". Rodgers (1973) further tested Ward and Braun's findings. He used the doll test on black children in segregated, desegregated, and integrated environments. It was found that the black doll was selected as the "nice" doll 53 percent of the time by segregated students, 86 percent of the time by the
desegregated students, and 85 percent of the time by the integrated students. Rodgers concluded that racial pride among blacks has greatly improved in recent years.

Clark and Clark (1947), White (1947), and Katz (1960) all agree with Baldwin (1961) who summarizes the response to the self-hatred idea with the following statement:

The American Negro can no longer, nor will he ever again, be controlled by white America's image of him. This fact has everything to do with the rise of Africa in world affairs. At the time I was growing up, Negroes in this country were taught to be ashamed of Africa... One was always being mercilessly scrubbed and polished, as though in the hope that a stain could thus be washed away... The women were forever straightening and curling their hair, and using bleaching creams... But none of this is so for those who are young now... By the time they were able to react to the world, Africa was on the stage of history. This could not but have an extraordinary effect on their own morale, for it meant that they were not merely the descendants of slaves in a white, Protestant, and puritan country; they were also related to kings and princes in an ancestral homeland, far away. And this has proved to be a great antidote to the poison of self-hatred.

Social Status

Research on the effect of social status on self-esteem is contradictory. Some prominent studies have found that children from advantaged families have better self-images than disadvantaged children, some have found the opposite, and others have determined that there are no significant differences.
Sewell and Haller (1956) studied 1,462 children representing the entire population of the fourth through the eighth grades of a small Wisconsin community. Each child was given the California Test of Personality and the New California Test of Mental Maturity. Their teachers were asked to fill out a family background questionnaire with information from school records. The child's family was rated on a five category prestige ranking scale devised for the community. Zero-order correlations between status measures and measured personality adjustment were found to be positive and significant at the .05 level of confidence. The children from high prestige families tended to score better on the personality tests.

Rosenberg (1965) used a ten-item Guttman scale as a measure of self-esteem on a sample of 5,024 juniors and seniors from ten New York high schools. His study suggested that children from higher social classes are more likely to accept themselves than those from the lower social strata.

Gough (1946), Auld (1952), Coopersmith (1967), Deutsch (1967), and several others have conducted less rigorous studies indicating that the personality test performance of middle-class children is significantly higher than that of lower-class children. Long and Henderson (1968), using a nonverbal instrument for measuring self-esteem, also found that disadvantaged children had lower self-esteem scores.
A few studies have held that disadvantaged youth have higher levels of self-esteem. In the Dales and Walters study the disadvantaged youth, most of whom were black, scored significantly higher at the twelfth grade level than advantaged youth.

Soares and Soares (1969) employed a measuring device using 20 pairs of bi-polar traits to determine self-perceptions. The subjects were 514 fourth through eighth grade children in an urban school system. The disadvantaged children were about 65 percent Negro and Puerto Rican, and the nondisadvantaged were about 90 percent white. Statistical analysis indicated that the disadvantaged youth had higher self-perceptions than the advantaged group. Differences were significant at the .05 level of confidence.

Bruch, Kunce, and Eggeman (1972) administered a semantic differential scale to 159 male high school students. It was found that disadvantaged students had significantly higher self-esteem scores than did the advantaged students. Differences were significant at the .002 level of confidence.

Kuhn (1959) suggests that parents of lower class children set lower standards of behavior than middle class parents do for their children. The higher self-acceptance on the part of disadvantaged children could be due to fewer failures in reaching goals. Coleman (1966) and Havighurst and Moorefield (1967) stated that black disadvantaged children were insulated by segregation from the pressures and demands of the middle class environment, allowing them to develop a positive self-image.
At least three studies have found little or no difference in personality attributable to social class. The Rosen study stated that neither ethnicity nor social class alone is sufficient to predict an individual's score on a self-concept test.

Cook (1969) selected 373 students from depressed and affluent Maine communities. The Tennessee Self-Concept Scale and an Individual Data Sheet were administered to determine differences between disadvantaged and nondisadvantaged students. Factorial analysis of variance revealed that on seven of eight aspects of self-concept, no class differences existed. The disadvantaged appeared to feel slightly less adequate in social interaction. The conclusion was that there is no significant difference in self-concept according to social class.

The Getsinger study indicated that there was no significant relationship between social class and self-concept.

**Parent Status**

Several studies have attempted to determine the influence of the broken home and of father absence on self-perception. The literature tends to support the views that the child from the intact home develops a better self-image. However, a number of studies suggest that perceived differences may be due to other factors.

Rosenberg found that students from broken homes or father-absent families tended to have lower self-esteem than the students
from intact homes. Those from broken homes scored lower than those from homes where a parent had been lost by death. Remarriage causes even lower self-esteem than a broken home without remarriage. This is counter to the idea that a surrogate father can replace the natural father.

Biller and Bahm (1971) studied the effect of father absence on junior high boys. The subjects were 10 early father-absent, 10 late father-absent, and 20 father-present boys. Block's Suppression of Aggression Scale was used as an index of maternal discouragement or encouragement of aggression. A Q-sort technique was used to assess maternal encouragement of masculine behavior. The results indicated that the early father-absent boy was less aggressive and had a less masculine self-concept than the late father-absent boys. Father-present boys in general had better self-concepts than father-absent boys. The more the early father-absent boy perceived his mother as encouraging aggressive behavior, the more likely he was to have a masculine self-concept. This relationship between self-concept and perceived maternal encouragement was significant at the .05 level of confidence. Winch (1949), Lynn and Sawrey (1959), Altus (1958), Burton and Whiting (1960), and Leichty (1960) all found the father-absent boy to be less masculine than the father-present boy. The father-absent boy was found to be less aggressive and more dependent by Bach (1946), Sears (1946), Stoltz (1954), and Heatherington (1966).
Hardy (1937) and Rouman (1956) found a higher degree of inferiority and anxiety in father-absent boys. Poor school performance, immaturity, and tension were all associated with father-absence. McClelland (1961) determined that father-absent boys had lower achievement motivation. Bronfenbrenner (1961) found that the boy who spent more time with his father tended to be stronger in leadership characteristics than were those who spent less time with their fathers. Suedfield (1967) studied the records of Peace Corps volunteers and discovered that those who came from an intact home were more likely to complete their overseas assignment.

A few studies have held that there are no significant differences between father-absent and father-present youth. Miller (1961) studied father-absent lower class junior high school boys, predominantly Negro and Puerto Rican, and a matched group of father-present boys. She found no differences on either a masculinity-femininity interest inventory or in teachers' ratings of aggression. Greenstein (1966) produced a study almost identical to Miller's and reached the same conclusion. Rowntree (1955) and Russell (1957) found no inferiority or anxiety in father-absent boys.

Some research has suggested that the differences that are found are caused by factors other than father-absence and broken homes. Cobliner (1963) stated that what is perceived as a father-absence problem is really a lower class problem. The middle class family has fewer problems because it has better resources to help solve its problems.
McCord, McCord, and Thurber (1962) conducted a five year home observation of 255 boys. The boys were observed in their homes once every two weeks by trained social workers. The sample was from a lower class, relatively deprived environment. The evidence indicated that many of the effects often presumed to result from paternal absence can, largely, be attributed to certain parental characteristics such as intense conflict, rejection, and deviance, which occur more commonly in broken families. These personality traits may be associated with the effects of lower class rather than paternal absence.

**Birth Order**

It has long been held that first-born children were more likely to excel or to have a stronger self-concept than later-born children. Galton (1874) observed in his studies that eminent male scientists were far more likely to be first children in their families than later children. Sheppard (1972) provides a striking example in the fact that of the 23 astronauts who traveled in space by the year 1968, all were either only children or first-borns in their families.

Rosenberg, in a study referred to earlier in this chapter, determined that birth order has little effect on self-esteem except for the first-born and the only child, who do have higher self-esteem. Rosenberg's research was based on studies conducted with over 5,000 high school students.
Forer (1969) described first-born and only children as more self-confident, aggressive, authoritarian, anxious, and achievement oriented. Forer wrote a summary of the research on birth order and found consistent differences, especially between first-born and later-born children.

An outstanding study was conducted by Belmont and Morella (1973). It is a rare study in that it deals with the entire population of 400,000 19 year old males in The Netherlands born during 1943 and 1944. The subjects had been required to appear for examinations to determine their fitness for military induction. A battery of intelligence tests were administered to the subjects and the scores were analyzed on the basis of family size and ordinal position. An index of social class was devised using the occupation of the subject's father or the family provider as the determinant of status. The population was divided into three major social groups, or classes. Even though personality differences were not directly measured, the probable influence of personality traits on individual achievement makes the study attractive. In addition, the high quality of the study lends its strength to any research dealing with birth order. It was found that first-borns in any size family, on the average, scored better than later-borns. Only children were classed as first-born even though they could also be classified as last-borns in their families. It was decided that no other ordinal position relationships would be as accurate because of the complicating factors of the intervals between siblings, and the sex of the siblings.
Schachter (1959) has shown that first-born and only children differ from later-born individuals in preference for awaiting a feared event alone or in the company of others, with the first-borns expressing the stronger preference for waiting with others. First-borns were more anxious under stress. Schachter also found first-borns to have a lower tolerance of physical pain.

Baughman (1972) summarized the work of three researchers and concluded that first-born children have a high need for achievement. Damrin (1949) conducted a study of 1,000 high school girls. Results of the Bell Adjustment Inventory were compared with data from the subject's school records. First and second-born children were generally highest in achievement and adjustment. Third-borns were high in achievement, but they were the lowest in adjustment. Sixth to ninth-born children were poorest in achievement but were highest in adjustment.

**Family Size**

The Belmont and Morolla study found an inverse relationship between test scores and family size. As family size increased, there was a decrease in test scores. The tendency was less pronounced in the upper classes, however. The researchers computed scores separately for each of the three class levels in the study, finding that higher scores were achieved by upper class subjects. But within each class the relationship between intelligence and family size remained.
Zajonc (1975) analyzed the Belmont and Marolla study in depth and supported its findings. He regards their study as the best in existence dealing with birth order and family size.

Ellis and Beechley (1951) examined the records of 1,000 patients of a child guidance clinic. The subjects represented 1,000 consecutive closed cases. They were classified according to the number of children in their families. The findings indicated that children from large families were less likely to be emotionally disturbed. However, large families produced more broken homes, more school retardants, poorer students, and economically poorer families. There were no differences in adjustment to teachers and classmates.

Damrin (1949) administered the Bell Adjustment Inventory to 156 high school girls. It was found that children from small families were better adjusted and more socially acceptable. Large families were generally inferior to small families.

Sewell and Haller concluded that the number of children in the family was not enough by itself to influence the personality of the individual. They found personality differences to be influenced by class attributes rather than by the size of the subject's sibgroups.
Educational Aspirations

Rosenberg found that aspiration levels, or desire for achievement, were highest among those with high self-esteem.

Leadership

Rosenberg discovered that those with high self-esteem are more likely to have been chosen as leaders in school than those with low scores. He found that there was a definite tendency for those with little self-respect to not be an important force in discussion or other social encounters.

Friesen (1966) worked with 2,948 secondary school students who were divided into three behavior groups. An analysis was made of the problems checked on the Mooney Problem Check List by members of each group. Friesen concluded that adolescents who held leadership positions perceived themselves as having fewer problems than deviant students. Cattell (1965) in his book, The Scientific Analysis of Personality, stated that elected leaders are more extrovert or surgent than others.

Attitude Toward School

There are numerous questionnaires that have been devised to determine student attitudes. Typically, they ask the student to describe his attitude towards a specific situation or problem rather than toward school in general. For example, students are asked how they feel about the use of drugs, members of other races, and
school policies. There is no evidence of a comparison of self-esteem scores with attitude toward school.

**Educational Achievement of the Parents**

There was no research found which deals with the effect of the educational achievement of the parent on the self-image of the child.

**Organized Basketball Experience**

A comprehensive study of change in personality trait scores has been conducted in Japan. Ikegami (1970) included 1,500 athletes in his samplings who were divided into groups who had participated in sports for a length of time of from one to ten years. The results of his analyses showed that with increased sports participation his subjects tended to become more carefree, less apt to seek leadership in social situations, less depressed and frustrated, less apt to evidence feelings of inferiority, less nervous, more aggressive, and more active.

**Starters and Substitutes**

Two studies have employed the AMI in comparing starters and substitutes. Stewart (1971) administered the AMI to 198 college basketball players in Oregon and Washington. The univariate analysis of variance among the AMI traits was significant at the .05 level of confidence for the traits of drive, self-confidence,
and leadership. The mean scores for starters were higher in every trait except emotional control. Shellman (1969) compared regular and substitute soccer players and found that there were no significant differences between the two groups on the traits measured by the AMI.

Singer (1968) administered a personality questionnaire to ninth graders, twelfth graders, and college students. The three groups were divided into the categories of outstanding, regular, and substitute performers. There were no significant differences at any level between regulars and substitutes. The only differences found involved the outstanding twelfth grade and college athletes who had less desirable social-psychological characteristics than regulars and substitutes. In an earlier study, Schendel (1965) examined the same three educational levels discussed in the Singer research. Schendel administered the California Personality Inventory to 334 Oregon high school and college students. At the .05 level of confidence, no significant differences were found among ninth graders rated as substitutes, regulars, or outstanding athletes. The outstanding twelfth grade athletes scored significantly better than substitutes and regulars on the social presence scale. College level substitutes differed from regular and outstanding athletes on the scales of self-control, good impression, and achievement via conformance. Generally, Schendel found few differences between regulars and substitutes. The differences he did find, led him to state that substitutes were more like non-athletes than athletes.
This might justify a study of research dealing with athletes and non-athletes to support the findings of research involving regulars and substitutes. It is apparent, however, that there is disagreement among the researchers studying athletes and non-athletes.

Kroll and Petersen (1965), Ogilvie (1967), and Kroll (1967) all stated that there is little or no difference between athletes and non-athletes. Kroll and Petersen compared six college football teams with college non-athletes, finding no differences. They did acknowledge the possibility that the non-athlete sample might be more aggressive than other non-athletes who were not pursuing a college degree in a competitive atmosphere.

Ogilvie tested 27 male Olympic swimmers. Although medalist swimmers tended to score higher than non-medalists, none of the trends reached a level of statistical significance. Kroll made two studies dealing with athletes at different levels of achievement. Using the Sixteen Personality Factor Test he found no differentiation between levels of karate participants. In addition, he conducted research involving 94 amateur and collegiate wrestlers. Again using the Sixteen Personality Factor Test, discriminant function analysis failed to establish any profile differences between criterion groups.

Several studies have found athletes to score higher on personality tests than non-athletes. Booth (1955) used the Minnesota Multiphasic Personality Inventory to determine differences between 141 college athletes and 145 non-athletes at Grinnell.
College. His conclusion was that athletes were more capable of facing reality and accepting changes in behavior. Athletes were lower in anxiety than non-athletes. The California Personality Inventory was administered to 808 high school boys by Merriman (1960). When divided into athlete and non-athlete groups, athletes were found to be higher in dominance, sociability, social presence, and self-acceptance.

Johnson (1966) administered the Hullford-Zimmerman Temperament Survey to high school football players. He found sophomore players to score significantly higher than non-players on ascendance and objectivity. No differences were found between junior and senior football players when they were compared to non-athletes. Koocher (1969) designed a self-concept study of 65 boys between 7 and 15 years of age. Using an Index of Social Position devised by Hollingshead and Redlich, Koocher found that boys who had learned to swim during a YMCA camp reflected an enhanced self-esteem, while those who did not learn during the camp and those who had known how before the camp did not change significantly.

One study found non-athletes scoring better than athletes. Slusher (1964) selected 400 athletes and 100 non-athletes from nine Maryland high schools for comparison based on the MMPI. He found athletes lower in intelligence and higher in hypochondriasis than non-athletes.
The research designed to determine the differences among athletes who participated in various sports or combinations of sports is limited by its inability to tell us if certain personality types gravitate toward certain sports or whether certain sports actually modify the personality dynamics of the participants (Morgan, 1970). The available literature deals primarily with comparing team sports with individual sports rather than comparing combinations of sports.

Peterson, Weber, and Trousdale (1962) administered the Sixteen Personality Factor Questionnaire to 97 women A.A.U. and Olympic athletes to determine if there were personality differences between those who competed in team sports and those who competed in individual sports. The women in individual sports rated higher in dominance, adventurousness, sensitivity, introversion, radicalism, and self-sufficiency. They rated lower in sophistication. No differences were found in sociability, intelligence, stability, surgency, conscientiousness, suspecting, guilt proneness, and high self-sentiment.

Booth found that differences do exist between competitors in team sports and individual sports. Flanagan (1951) found fencers to be more dominating than basketball players, volleyball players, and boxers, and more feminine than basketball players. Badminton players were judged to be the most extroverted group, and the volleyball players were the most emotionally unstable.
Lakie (1962) used five scales of the Omnibus Personality Inventory in testing 230 university athletes. Specific groups within a school differed from athletes in other sports, but they also differed from athletes in the same sports at other schools. When the athletes were grouped by sports, irrespective of the schools attended, no differences were observed. Apparently, the inconsistency of techniques employed has resulted in a lack of strong or conclusive evidence to support the theories that individuals participating in one sport differ from those who participate in other sports.

**Basketball Honors Won**

No specific literature is available regarding the effect of basketball honors won on self-esteem. However, if it is held that having high aspirations is evidence of high self-esteem, the actual achievement of those aspirations should also be evidence of high self-esteem. Therefore, Rosenberg's study might apply here.

**Athletic Achievement of the Parents**

The relationship between the personality of the athlete and the athletic background or achievement of his parents has not been researched.

**Athletic Aspirations**

No literature is available which discusses the effect of high athletic aspiration on the self-esteem of the individual. However,
Rosenberg determined that a general desire for achievement was highest among those with high self-esteem.

Summary

Much of the literature reviewed for this study was not based on research dealing directly with athletics. Topics such as social status and its relationship with athletics have not been studied. Race and some other areas have produced extensive research interest, but only a part of that literature deals with athletics. However, the non-athletic oriented research is useful in gaining an overview of the factors that influence the self-image. In many cases, the results of personality studies closely parallel the findings of the few AMI studies in existence.

Of the 15 specific areas of concern in this study, seven appear to have been researched very little, if at all. Of the remaining eight topics, only three have been researched in connection with sports. There are a few clear tendencies in the literature. Studies on parent status, birth order, family size, and the status of the player as a starter or a substitute appear to be reasonably free of disagreement. The literature indicates that in these areas there is a definite influence on self-image development. The literature pertaining to the other background factors does not offer as great an opportunity for comparison with the results of a self-image study.
PROCEDURE

Source of Data

The population for this study included 150 high school varsity basketball players from 12 Portland, Oregon metropolitan area high schools. The subjects were sophomores, juniors, and seniors who participated during the 1973-1974 season. The data were gathered during April and May following the basketball season.

Special efforts were made to include five inner-city schools which account for about 90 percent of the black varsity basketball players in the state of Oregon. All of the teams taking part in the study had experienced from moderate to high success in basketball. Unsuccessful attempts were made to include losing teams. Either the coaches declined when invited to participate, or the players failed to keep scheduled appointments with the test administrator. In order to comply with the requirement of the office of graduate research that all research subjects be volunteers, it was necessary to accept the population used for this study as the best available.

Population Characteristics

1. The total sample population numbered 150 sophomores, juniors, and seniors representing 12 Portland, Oregon metropolitan area high schools.
2. In regard to race, 47 of the subjects were classified as black and 103 of the subjects were classified as white.

3. There were 105 subjects living with both of their natural parents. Of the remaining subjects, 13 lived with one natural parent and a stepparent, and 32 were living with only one parent or with a relative.

4. Of the 150 subject-families represented, there were 2 one-child families, 23 two-child families, 34 three-child families, 38 four-child families, 23 five-child families, 10 six-child families, 8 seven-child families, 4 eight-child families, 2 nine-child families, 4 ten-child families, no eleven-child families, and 2 twelve-child families.

5. In the sample population, there were 36 first-borns, 36 second-borns, 39 third-borns, 15 fourth-borns, 10 fifth-borns, 6 sixth-borns, 2 seventh-borns, 3 eighth-borns, no ninth-borns, 1 tenth-born, 1 eleventh-born and 1 twelfth-born.

6. The education level achieved by the father was reported as unknown by 18 subjects, less than the eighth grade by 3 subjects, above the eighth grade by 16 subjects, high school graduation by 40 subjects, two years of college by 14 subjects, a four-year college degree by 40 subjects, a master's degree by 16 subjects, and a doctorate or professional degree by 3 subjects.

7. The education level achieved by the mother was reported as unknown by 10 of the subjects, less than eighth grade by 1 subject, above the eighth grade by 20 subjects, high school
graduation by 54 subjects, two years of college by 20 subjects, a four-year college degree by 40 subjects, a master's degree by 1 subject, and no doctorates or professional degrees.

8. The subjects were divided into three social status categories. There were 31 high status subjects (1 black and 30 white), 89 middle status subjects (18 black and 71 white), and 30 low status subjects (28 black and 2 white).

9. The educational goals of the subjects were that 6 intended to finish high school, 13 planned to complete two years of college, 105 expected to complete four years of college, and 26 wanted to pursue post graduate and professional studies.

10. It was found that 128 of the subjects held no offices in school organizations or school government, 5 were organization officers, 3 were organization presidents, 11 were class or student body officers, 3 were class presidents, and none were student body president at their schools.

11. None of the subjects described themselves as disliking school very much. However, 12 said they disliked school, 37 said they had no definite feelings, 82 said they liked school, and 19 said they liked school very much.

12. One subject said he began playing organized basketball in the first grade, none began in the second grade, 6 in the third grade, 25 in the fourth grade, 43 in the fifth grade, 38 in the sixth grade, 22 in the seventh grade, 11 in the eighth grade, and 4 began in the ninth grade.
13. It was determined that 86 of the subjects could be classified as starters and 64 as substitutes.

14. There were 55 subjects who participated in basketball only, 29 who played basketball and a fall sport, 36 who played basketball and a spring sport, and 30 who participated in both a fall and a spring sport in addition to basketball.

15. There were 119 subjects who won no basketball honors, 20 who won league honors, and 11 who won honors at the state levels.

16. The athletic goals of 24 subjects were to play in high school only, 1 wanted to participate as an amateur beyond high school but not in college, 6 wanted to play in a two-year college, 82 wanted to play in a four-year college, and 37 wanted to go on to professional athletics.

17. The athletic achievement of the father of the subject was reported as none by 46 subjects, high school by 75 subjects, college by 28 subjects, and professional by 1 subject.

18. The athletic achievement of the mother was reported as none by 116 subjects, high school by 33 subjects, and college by 1 subject.

Selection of the Instruments

Athletic Motivation Inventory

One of the objectives of this study is to increase the understanding of the possible application and use of the Athletic Motivation Inventory (AMI). Therefore, it is imperative that the AMI be utilized as the primary instrument for testing.
Three psychologists at California State University at San Jose, Ogilvie, Tutko, and Lyon (1968), were responsible for the development of the AMI. They did consultation work in athletics for several years using a variety of well-known personality inventories, including the Edwards Personal Preference Schedule, the Illinois Personality and Ability Test, the Minnesota Multiphasic Personality Inventory, the Jackson Personality Research Form, and the Jackson Differential Personality Test. These inventories measure the subject's response to his total environment. The AMI was constructed specifically to measure one's personality as he responds to participation in athletics. The authors contend they have developed an instrument more relevant to athletics (Ogilvie et al., 1970).

The original instrument used 282 items to identify 12 traits considered most closely related to athletic competition. Refinement of the inventory resulted in the present 190 item test and its 11 personality scales. Each item provides three multiple choice options. The items are balanced so that the correct response will appear as A, B, or C an equal number of times. Items for each of the 11 scales must be answered before the next item of any scale can be presented. There are 15 items for each of the 11 scales, plus a 15-item infrequency scale and a 10-item social desirability scale for the total of 190 items (Ogilvie et al., 1970). The infrequency scale is designed to detect random answering and poor readers. The social desirability scale attempts to detect those attempting to present a "good" or "desirable" profile.
Before any item could be retained, it had to correlate with its own scale more than any other scale in the inventory. Each item had to correlate significantly with the scale for which it was intended and at least at a .20 level (Pearson r). Finally, no more than 60 percent of the answers could be received by an option on any of the items. The item analysis and intercorrelation of scales were used to eliminate unreliable items.

Reliabilities were determined for the scales on the first version of the AMI by using alpha coefficients. The sample of athletes ranged from professional down to high school which resulted in figures that tended to be high because of the variance in the sample. The reliabilities ranged from a low of .78 for determination up to .93 for mental toughness. These figures should decrease when reliabilities for each sport at each level are analyzed.

Current efforts to validate the test are limited by the lack of reliability of other rating methods such as player ratings performed by coaches. Validity studies with the Illinois Personality and Abilities Test have shown significant correlation with the following seven traits: dominance (.31), aggression (.47), toughness (-.25), trust (.30), emotional stability (-.31), conscience (.42), and self-confidence (-.32). Several validity studies are presently underway which should present additional information on the effectiveness of the AMI (Ogilvie et al., 1970).
Individual Data Questionnaire

An individual data questionnaire for use in this study was constructed with the assistance of the doctoral committee member representing the department of sociology. The questionnaire (Appendix B) is four pages in length. It consists of 22 questions, including 16 multiple choice and 6 fill-in items.

The questionnaire provided the necessary data for comparison to the AMI trait scores. Approximately 15 minutes were required for completion of the questionnaire by the subjects.

Test Administration

The test was administered to each of the 12 teams separately during a two month period. Each team tested consisted of from 10 to 15 players. The meeting for testing was arranged by the team coach at a time convenient to both the subjects and the test administrator. All of the testing was done during the regular school day at the school of the subjects being tested. In addition to the Athletic Motivation Inventory, a questionnaire was administered to provide specific autobiographical data for comparison with the results of the AMI. The questionnaire was administered first, followed by the AMI.

Exactly the same explanation and instructions were given to each group in a clear and concise presentation as recommended by Whitla (1968). The instructions were given in the following manner:
1. The test administrator was introduced to the subjects by their coach. The administrator stated that the data were to be used in research for a doctoral thesis dealing with communication between coaches and athletes.

2. The subjects were assured that the information from the questionnaire and the AMI would be kept in confidence. The administrator explained his personal commitment to the university to use care in working with human subjects. The subjects were told that they could obtain, through their coach, the results of the AMI in the form of a personality profile. It was emphasized that none of the responses to specific questions would be made known to the coach or teammates of the subjects. The need for completely honest responses as an essential factor in the study was also emphasized. It was made clear that there were no right or wrong answers to any of the items of the AMI.

3. The subjects were given time to ask questions and then were allowed to withdraw if they did not desire to participate. For those that wanted to be assured of anonymity, a numerical code was allowed in place of their name.

4. The autobiographical questionnaire was administered first. Each item was fully explained and answered by everyone before moving on to the next item.

5. The AMI instructions were read and the AMI was administered. All of the subjects were asked to remain in the room until everyone had finished.
6. No time limit was set for completion of the questionnaire and the AMI. The total time did not exceed one hour and 15 minutes for any of the groups tested.

**Treatment of the Data**

The AMI answer sheets were scored by the Institute for the Study of Athletic Motivation in San Jose, California. The raw scores from the AMI and the data from the autobiographical questionnaire were reduced to numerical form. A separate sheet was provided for listing the data for each subject, including a code for his name and the school he attended. This material was transferred on to IBM cards and processed at the Oregon State University Computer Center.

Simple linear regression analysis was used to determine the degree of relationship between the personality trait scores and the selected background data on the subjects. The remaining data were analyzed using a t-test to determine the differences between the mean scores on the AMI of groups within the total supply population.

**Methods of Analysis**

Significance was set at the .05 level of confidence, and specific null hypotheses were tested by appropriate statistical methods. Significance at the .01 level of confidence was indicated where it occurred throughout the study.
Simple Linear Regression Analysis

Simple linear regression analysis was used to determine relationships between the AMI trait scores and specific background data on the subjects. One of the basic conditions to be met is that there be a linear relationship between the two variables being studied. Regression equations can be used in predicting scores on one variable from scores made on another. The predictor is also known as the independent variable. That which is predicted is referred to as the dependent variable (Downie and Heath, 1970). A problem in this study is that it is difficult to be certain whether the AMI traits are dependent or independent variables in a given situation. That is, the trait may be developed as a result of participation, or it may be the factor of personality that determines participation.

It is the usual practice to designate the independent variable by the symbol $X$ and the dependent variable by the symbol $Y$. In this study, for example, the number of years of experience in basketball would be considered the independent, or $X$, variable, and the AMI trait score would be the dependent, or $Y$, variable. If a graph were constructed, the $X$ variable would be plotted on the horizontal axis and the $Y$ variable on the vertical axis. The AMI scores of the 150 subjects would appear across the graph at those points where the AMI score for a particular trait and the experience level of each subject intersected.
The next step is to identify a regression line on the graph. This line, Y', will represent the prediction of AMI scores when plotted against the X variable. The equation for the line is \( Y' = a + bX \). The b coefficient of the equation gives us the ratio of change in Y in reference to the change in X. If the b coefficient is positive, the line Y' will be positive and will slope upward from left to right. If it is negative, the slope will be downward from left to right. If there is no linear relationship, the line will run parallel to the X axis. There is an infinite number of these lines that can be drawn on the same set of axes and at the same degree of slope. Therefore, the a coefficient is needed to identify the Y intercept, or the point at which the straight line crosses the Y axis.

If all of the actual AMI scores fell on the line of regression, the actual scores (Y) would equal the predicted scores (Y') and the relationship would be perfect. Ordinarily, the actual scores deviate from the line of regression. The difference between Y and Y' is known as the error of prediction. The regression line is identified when the sum of the squares of these errors of prediction is at a minimum (Downie and Heath, 1970). The line is placed at the angle of best fit when plotted against the X axis.

Once the line of best fit is determined, it is possible to examine the significance of that fit. In this study, a significant relationship was found between length of experience, the X variable, and three of the 11 AMI traits, or Y variables. If a null hypothesis
is rejected at the .05 level of confidence, there are five chances in 100 that the hypothesis should actually have been retained.

T-Test

A t-test was employed to compute the differences between the mean AMI scores for particular groups within the study population. For example, on the AMI trait of drive, the subjects who were of middle social status had a mean score of 15.55, while the subjects who were of low social status had a mean score of 13.33. The two groups were treated as two separate populations and were compared on the basis of their mean scores on the same AMI trait.

A null hypothesis was stated about these two population means. It was stated that the difference between these two means is zero. This would mean that in the example above, the difference between the means (15.55 - 13.33 = 2.22) is merely a chance deviation when the population value for the difference is zero. To test the null hypothesis, it was necessary to determine a t-value for the deviation. The t-value is the ratio of the difference between the means to the standard error of the difference between the means (Downie and Heath, 1970). In this problem the t-value, 2.63, equals the ratio of the difference between the means, 2.22, to the standard error of the difference between the means. The t-value, 2.63, is greater than 2.57 and is therefore significant at the .01 level of confidence.
ANALYSES OF DATA AND CONCLUSIONS

Subjects and Scores

The Athletic Motivation Inventory was administered to 150 varsity basketball players representing 12 high schools. None of the subjects were eliminated from the study. Scores ranging from zero to 30 were possible for each of the inventory's 11 traits. The raw scores on each trait were tabulated for each subject. As mentioned previously, the players filled out a questionnaire designed to gather pertinent background data for the study. The mean scores for various groups within the study population were compared for each trait.

Differences Between Black and White Players

A simple linear regression analysis of the scores of the total study population revealed some differences according to race. Table 1 shows that the black players scored significantly higher on the trait of mental toughness than the white players. The difference was significant at the .05 level of confidence. White players showed a tendency to score higher on two traits. They were significantly higher on the trait of drive at the .01 level of confidence and on the trait of conscientiousness at the .05 level of confidence. There were no significant differences between blacks and whites on the remaining eight personality traits.
TABLE 1. Simple Linear Regression Analysis of the Mean Scores on the AMI Personality Traits for Black and White Basketball Players.

<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
<th>Blacks (N=47)</th>
<th>Whites (n=103)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>3.61**</td>
<td>13.38</td>
<td>15.85</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td></td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td>Determination</td>
<td></td>
<td>-0.12</td>
<td></td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>0.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>1.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>0.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Control</td>
<td>0.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>-2.09*</td>
<td>15.76</td>
<td>14.14</td>
</tr>
<tr>
<td>Coachability</td>
<td></td>
<td>0.64</td>
<td></td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>2.29*</td>
<td>13.06</td>
<td>15.19</td>
</tr>
<tr>
<td>Trust</td>
<td>0.83</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence
** Significant at .01 level of confidence
- Blacks scored higher
+ Whites scored higher

Tendencies According to Social Status

Significant at the .05 level of confidence was found on only one trait when social status was considered as a variable. Table 2 reveals that scores on the trait of drive tended to increase significantly as the status level of the subjects increased. A t-test was used to further clarify the differences between the three status groups included in the study. Table 3 indicates the mean scores for the low, middle, and high status groups on the trait of drive.
### TABLE 2. Simple Linear Regression Analysis of the Mean Scores on the AMI Personality Traits for Basketball Players According to Social Status.

<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>2.01*</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>-0.55</td>
</tr>
<tr>
<td>Determination</td>
<td>-0.70</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>-0.01</td>
</tr>
<tr>
<td>Leadership</td>
<td>1.19</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>1.30</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>1.05</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>-1.40</td>
</tr>
<tr>
<td>Coachability</td>
<td>-0.34</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>1.38</td>
</tr>
<tr>
<td>Trust</td>
<td>0.54</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence.
- As status level increases, scores tend to decrease.
+ As status level increases, scores tend to increase.

Low status N = 30
Middle status N = 89
High status N = 31

### TABLE 3. T-Test of the Mean Scores on the AMI Personality Trait of Drive Among Low, Middle and High Status Basketball Players.

<table>
<thead>
<tr>
<th></th>
<th>Low</th>
<th>Mean Scores</th>
<th>High</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Middle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.33</td>
<td>15</td>
<td>15.55</td>
<td>--</td>
<td>2.63**</td>
</tr>
<tr>
<td>--</td>
<td>15</td>
<td>15.55</td>
<td>15.41</td>
<td>-0.15</td>
</tr>
<tr>
<td>13.33</td>
<td>--</td>
<td>15.41</td>
<td>15.41</td>
<td>2.22</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence
** Significant at .01 level of confidence

Low Status N = 30
Middle Status N = 89
High Status N = 31
It is apparent that the tendency to achieve higher scores carries from the low status level to the middle status level and then decreases slightly, but not significantly, between the middle and high status levels. The middle status group scored significantly higher at the .01 level of confidence on drive when compared to the low status group. The high status group scores were higher than those of the low status group at the .05 level of confidence.

**Differences Between Black and White Players of Low Social Status**

When black and white players of low social status were compared (Table 4), there were no significant differences on any of the 11 AMI personality traits. A t-test analysis was used.

**Differences Between Black and White Players of Middle Social Status**

A comparison of black and white players of middle social status (Table 5) revealed that white players scored significantly higher than black players on the trait of drive at the .05 level of confidence. Analysis by t-test indicated that there were no significant differences between the two groups on any of the remaining ten traits.
TABLE 4. T-Test of the Mean Scores on the AMI Personality Traits Between Black and White Basketball Players of Low Social Status.

<table>
<thead>
<tr>
<th>Trait</th>
<th>Blacks (N=28)</th>
<th>Whites (N=2)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>13.10</td>
<td>16.50</td>
<td>-1.37</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>13.17</td>
<td>16.50</td>
<td>-1.18</td>
</tr>
<tr>
<td>Determination</td>
<td>14.85</td>
<td>13.00</td>
<td>0.57</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>14.67</td>
<td>15.00</td>
<td>-0.13</td>
</tr>
<tr>
<td>Leadership</td>
<td>14.39</td>
<td>14.50</td>
<td>-0.03</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>14.78</td>
<td>12.00</td>
<td>0.91</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>13.92</td>
<td>9.50</td>
<td>1.28</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>15.92</td>
<td>12.50</td>
<td>1.15</td>
</tr>
<tr>
<td>Coachability</td>
<td>13.89</td>
<td>15.50</td>
<td>-0.59</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>13.10</td>
<td>9.50</td>
<td>1.06</td>
</tr>
<tr>
<td>Trust</td>
<td>14.92</td>
<td>16.50</td>
<td>-0.62</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence  
+ Blacks scored higher  
- Whites scored higher
TABLE 5. T-Test of the Mean Scores on the AMI Personality Traits Between Black and White Basketball Players of Middle Social Status.

<table>
<thead>
<tr>
<th>Trait</th>
<th>Mean Scores</th>
<th></th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Blacks (N=18)</td>
<td>Whites (N=71)</td>
<td></td>
</tr>
<tr>
<td>Drive</td>
<td>13.77</td>
<td>16.00</td>
<td>-2.06*</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>13.38</td>
<td>13.69</td>
<td>-0.24</td>
</tr>
<tr>
<td>Determination</td>
<td>14.38</td>
<td>14.90</td>
<td>-0.38</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>13.27</td>
<td>14.36</td>
<td>-0.96</td>
</tr>
<tr>
<td>Leadership</td>
<td>14.27</td>
<td>15.66</td>
<td>-1.04</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>13.88</td>
<td>15.29</td>
<td>-0.92</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>13.83</td>
<td>14.66</td>
<td>-0.57</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>15.27</td>
<td>14.29</td>
<td>0.82</td>
</tr>
<tr>
<td>Coachability</td>
<td>14.11</td>
<td>14.76</td>
<td>-0.54</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>13.00</td>
<td>15.50</td>
<td>-1.73</td>
</tr>
<tr>
<td>Trust</td>
<td>14.88</td>
<td>15.70</td>
<td>-0.67</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence
+ Blacks scored higher
- Whites scored higher
Differences Between Black and White Players of High Social Status

A t-test of the differences between the mean scores of black and white basketball players of high social status showed a significant difference on only one trait. Black players scored significantly higher on the trait of emotional control at the .05 level of confidence. There were no significant differences on the remaining ten traits (Table 6).

Differences Between Subjects Living with Both Natural Parents and Subjects Living with One Natural Parent and a Stepparent

The players living with both of their natural parents scored significantly higher at the .05 level of confidence on the trait of drive when compared to the players living with one natural parent and a stepparent (Table 7). There were no significant differences between the two groups on the other ten traits of the AMI, according to the t-test analysis.

Differences Between Subjects Living with Both Natural Parents and Subjects Living with One Natural Parent or a Relative

A t-test analysis indicated that there were no significant differences between the mean scores of the players living with both of their natural parents and the players living with one natural parent or a relative (Table 8).
TABLE 6. T-Test of the Mean Scores on the AMI Personality Traits Between Blacks and White Basketball Players on High Social Status.

<table>
<thead>
<tr>
<th>Trait</th>
<th>Blacks (N=1)</th>
<th>Whites (N=30)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>14.00</td>
<td>15.46</td>
<td>-0.36</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>17.00</td>
<td>12.66</td>
<td>1.14</td>
</tr>
<tr>
<td>Determination</td>
<td>14.00</td>
<td>13.83</td>
<td>0.02</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>12.00</td>
<td>14.76</td>
<td>-0.65</td>
</tr>
<tr>
<td>Leadership</td>
<td>19.00</td>
<td>15.80</td>
<td>0.63</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>22.00</td>
<td>16.20</td>
<td>1.07</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>24.00</td>
<td>14.73</td>
<td>2.01*</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>20.00</td>
<td>13.90</td>
<td>1.33</td>
</tr>
<tr>
<td>Coachability</td>
<td>12.00</td>
<td>13.66</td>
<td>-0.28</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>13.00</td>
<td>14.83</td>
<td>-0.34</td>
</tr>
<tr>
<td>Trust</td>
<td>20.00</td>
<td>15.50</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence
+ Blacks scored higher
- Whites scored higher
### TABLE 7. T-Test of the Mean Scores on the AMI Personality Traits between Subjects Living with Both Natural Parents and Subjects Living with One Natural Parent and a Step-parent.

<table>
<thead>
<tr>
<th>Trait</th>
<th>Mean Scores</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both Parents (N=105)</td>
<td>Stepparent (N=13)</td>
</tr>
<tr>
<td>Drive</td>
<td>15.58</td>
<td>13.47</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>13.31</td>
<td>13.64</td>
</tr>
<tr>
<td>Determination</td>
<td>14.53</td>
<td>13.00</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>14.24</td>
<td>12.76</td>
</tr>
<tr>
<td>Leadership</td>
<td>15.35</td>
<td>15.29</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>15.32</td>
<td>14.29</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>14.82</td>
<td>13.70</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>14.38</td>
<td>16.17</td>
</tr>
<tr>
<td>Coachability</td>
<td>14.51</td>
<td>12.23</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>15.21</td>
<td>12.58</td>
</tr>
<tr>
<td>Trust</td>
<td>15.83</td>
<td>13.94</td>
</tr>
</tbody>
</table>

Note:  
* Significant at .05 level of confidence  
+ Subjects with both natural parents scored higher  
- Subjects with one natural parent and stepparent scored higher
TABLE 8. T-Test of the Mean Scores on the AMI Personality Traits Between Subjects Living with Both Natural Parents and Subjects Living with One Natural Parent or a Relative

<table>
<thead>
<tr>
<th>Trait</th>
<th>Both Parents (N = 105)</th>
<th>One Parent or Relative (N = 32)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>15.58</td>
<td>14.17</td>
<td>1.62</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>13.31</td>
<td>13.64</td>
<td>-0.35</td>
</tr>
<tr>
<td>Determination</td>
<td>14.53</td>
<td>15.75</td>
<td>-1.12</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>14.24</td>
<td>15.78</td>
<td>-1.80</td>
</tr>
<tr>
<td>Leadership</td>
<td>15.35</td>
<td>15.07</td>
<td>0.26</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>15.32</td>
<td>15.35</td>
<td>-0.02</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>14.82</td>
<td>13.39</td>
<td>1.32</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>14.38</td>
<td>14.75</td>
<td>-0.39</td>
</tr>
<tr>
<td>Coachability</td>
<td>14.51</td>
<td>14.32</td>
<td>0.34</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>15.21</td>
<td>13.10</td>
<td>1.89</td>
</tr>
<tr>
<td>Trust</td>
<td>15.83</td>
<td>14.96</td>
<td>0.92</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence  
+ Subjects with both natural parents scored higher  
- Subjects with one natural parent or a relative scored higher
Differences Between Subjects Living with One Natural Parent and a Stepparent and Subjects Living with One Natural Parent or a Relative

It was found that players who live with one natural parent or a relative scored significantly higher than players living with one natural parent and a stepparent on the trait of guilt proneness. A t-test of the mean scores indicated a difference significant at the .01 level of confidence (Table 9).

Differences Between First-Borns and Later-Borns

A t-test of the mean scores indicated that first-born children of the study population scored significantly higher at the .05 level of confidence on the trait of conscientiousness when compared to the players who were later-born children. There were no significant differences on the remaining ten traits (Table 10).

Tendencies According to Family Size

A simple linear regression analysis revealed that there is a tendency for the scores of the AMI to decrease as family size increases (Table 11). On the traits of drive, self-confidence, and conscientiousness, the relationship between the increase in family size and the decrease in AMI scores was significant at the .01 level of confidence. On the traits of determination, emotional control, and coachability, the relationship was significant at the .05 level of confidence. Scores on the other five AMI traits also tended to decrease as family size increased, but the relationships were not significant.
### TABLE 9. T-Test of the Mean Scores on the AMI Personality Traits Between Subjects Living with One Natural Parent and a Stepparent and Subjects Living with One Natural Parent or a Relative.

<table>
<thead>
<tr>
<th>Trait</th>
<th>Stepparent (N=13)</th>
<th>One Parent or Relative (N=32)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>13.47</td>
<td>14.17</td>
<td>-0.66</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>13.64</td>
<td>13.64</td>
<td>0.00</td>
</tr>
<tr>
<td>Determination</td>
<td>13.00</td>
<td>15.75</td>
<td>-1.94</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>12.76</td>
<td>15.78</td>
<td>-2.94**</td>
</tr>
<tr>
<td>Leadership</td>
<td>15.29</td>
<td>15.07</td>
<td>0.15</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>14.29</td>
<td>15.35</td>
<td>0.75</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>13.70</td>
<td>13.39</td>
<td>0.19</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>16.17</td>
<td>14.75</td>
<td>1.10</td>
</tr>
<tr>
<td>Coachability</td>
<td>12.23</td>
<td>14.32</td>
<td>-1.78</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>12.58</td>
<td>13.10</td>
<td>-0.33</td>
</tr>
<tr>
<td>Trust</td>
<td>13.94</td>
<td>14.96</td>
<td>-0.96</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ Subjects with stepparent scored higher  
- Subjects with one parent or relative scored higher
TABLE 10. T-Test of the Mean Scores on the AMI Personality Traits Between Subjects Who Were First-Born Children and Subjects Who Were Later-Born Children.

<table>
<thead>
<tr>
<th>Trait</th>
<th>First Borns (N=36)</th>
<th>Later-Borns (N=114)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>15.38</td>
<td>14.98</td>
<td>0.52</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>13.61</td>
<td>13.35</td>
<td>0.31</td>
</tr>
<tr>
<td>Determination</td>
<td>14.71</td>
<td>14.52</td>
<td>0.26</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>14.36</td>
<td>14.37</td>
<td>0.01</td>
</tr>
<tr>
<td>Leadership</td>
<td>14.27</td>
<td>15.61</td>
<td>-1.42</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>14.27</td>
<td>15.61</td>
<td>-1.42</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>15.27</td>
<td>14.16</td>
<td>1.12</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>14.05</td>
<td>14.84</td>
<td>-0.92</td>
</tr>
<tr>
<td>Coachability</td>
<td>15.38</td>
<td>13.94</td>
<td>1.65</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>16.36</td>
<td>13.94</td>
<td>2.40*</td>
</tr>
<tr>
<td>Trust</td>
<td>15.47</td>
<td>15.45</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence
+ First-borns scored higher
- Later-borns scored higher
TABLE 11. Simple Linear Regression Analysis of the Mean Scores on the AMI Personality Traits for Basketball Players According to the Number of Children in Their Families.

<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>-3.16**</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>-0.72</td>
</tr>
<tr>
<td>Determination</td>
<td>-2.32*</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>-0.41</td>
</tr>
<tr>
<td>Leadership</td>
<td>-1.75</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>-3.49**</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>-2.48*</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>-0.29</td>
</tr>
<tr>
<td>Coachability</td>
<td>-2.50*</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-3.21**</td>
</tr>
<tr>
<td>Trust</td>
<td>-1.33</td>
</tr>
</tbody>
</table>

Note:  
* Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ As family size increases, scores tend to be higher  
- As family size increases, scores tend to be lower
Tendencies According to Educational Aspirations

A simple linear regression analysis showed that as the level of educational aspirations of the subjects increased, their scores on the trait of leadership tended to increase. The relationship was significant at the .05 level of confidence (Table 12). There were no significant relationships for any of the remaining ten traits.

Tendencies According to Leadership Attained in School Organizations

A significant relationship was found on eight of the 11 traits between the trait scores and the level of leadership attained in school offices and organizations by the players. The relationship between the tendency for AMI scores to increase as the level of leadership increased was significant at the .01 level of confidence for the traits of drive, determination, leadership, self-confidence, and emotional control. The relationship for the same tendency was significant at the .05 level of confidence for the traits of mental toughness, conscientiousness, and trust (Table 13). A simple linear regression analysis was used to determine significant trends.

Tendendies According to Attitude Toward School

Simple linear regression analysis showed that as the attitude of the subjects toward school became more positive, their scores tended to increase on six of the traits. The relationship between
TABLE 12. Simple Linear Regression Analysis of the Mean Scores on the AMI Personality Traits for Basketball Players According to the Level of their Educational Aspirations.

<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>1.66</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>0.63</td>
</tr>
<tr>
<td>Determination</td>
<td>1.30</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>-0.81</td>
</tr>
<tr>
<td>Leadership</td>
<td>2.54*</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>1.44</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>0.33</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>-0.44</td>
</tr>
<tr>
<td>Coachability</td>
<td>1.05</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>0.70</td>
</tr>
<tr>
<td>Trust</td>
<td>0.30</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence
+ As aspirations rise, scores tend to be higher
- As aspirations rise, scores tend to be lower
TABLE 13. Simple Linear Regression Analysis of the Means Scores on the AMI Personality Traits for Basketball Players According to Their Level of Leadership Attained in School Organizations.

<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>2.96**</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>1.42</td>
</tr>
<tr>
<td>Determination</td>
<td>2.62**</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>0.93</td>
</tr>
<tr>
<td>Leadership</td>
<td>4.44**</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>3.53**</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>2.92**</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>2.12*</td>
</tr>
<tr>
<td>Coachability</td>
<td>1.30</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>2.25*</td>
</tr>
<tr>
<td>Trust</td>
<td>2.29*</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ As leadership level increases, scores tend to increase  
- As leadership level increases, scores tend to decrease
positive attitudes and higher scores was significant at the .01 level of confidence for the traits of leadership and conscientiousness. The relationship was significant at the .05 level of confidence for the traits of drive, determination, self-confidence, and trust (Table 14).

Tendencies According to the Educational Achievement of the Father

Table 15 reveals that there is a significant relationship for two of the AMI traits between the increase in scores and the increase in the educational achievement of the father of the subject. The relationship was found to be significant at the .05 level of confidence for the traits of drive and emotional control. A different kind of relationship was found for the trait of guilt proneness. Simple linear regression analysis indicated that as the educational achievement of the fathers increased, the scores on guilt proneness tended to decrease. This relationship was significant at the .01 level of confidence.

Tendencies According to the Educational Achievement of the Mother

There was a significant relationship between the increase in scores on the traits of drive, self-confidence, emotional control and conscientiousness and the increase in the educational achievement of the subjects' mothers. The relationship was significant at the .05 level of confidence for all four traits (Table 16), based on a simple linear regression analysis.
**TABLE 14. Simple Linear Regression Analysis of the Mean Scores on the AMI Personality Traits for Basketball Players According to Their Attitude Toward School**

<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>1.99*</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>-1.57</td>
</tr>
<tr>
<td>Determination</td>
<td>2.32*</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>0.62</td>
</tr>
<tr>
<td>Leadership</td>
<td>3.41**</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>2.26*</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>1.85</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>-0.68</td>
</tr>
<tr>
<td>Coachability</td>
<td>1.84</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>3.63**</td>
</tr>
<tr>
<td>Trust</td>
<td>2.14*</td>
</tr>
</tbody>
</table>

**Note:**  
* Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ As attitude becomes more positive, scores tend to increase  
- As attitude becomes more positive, scores tend to decrease
TABLE 15. Simple Linear Regression Analysis of the Mean Scores on the AMI Personality Traits for Basketball Players According to the Level of Educational Achievement of Their Fathers

<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>2.28*</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>-0.68</td>
</tr>
<tr>
<td>Determination</td>
<td>-0.65</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>-2.57**</td>
</tr>
<tr>
<td>Leadership</td>
<td>0.84</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>1.37</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>2.18*</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>-1.24</td>
</tr>
<tr>
<td>Coachability</td>
<td>0.05</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>1.63</td>
</tr>
<tr>
<td>Trust</td>
<td>0.93</td>
</tr>
</tbody>
</table>

Note:  
* Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ As the educational level increases, scores tend to increase  
- As the educational level increases, scores tend to decrease.
TABLE 16. Simple Linear Regression Analysis of the Mean Scores on the AMI Personality Traits for Basketball Players According to the Level of Educational Achievement of Their Mothers.

<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>2.15*</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>0.15</td>
</tr>
<tr>
<td>Determination</td>
<td>0.51</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>-1.05</td>
</tr>
<tr>
<td>Leadership</td>
<td>1.41</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>2.28*</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>2.09*</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>-0.77</td>
</tr>
<tr>
<td>Coachability</td>
<td>1.33</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>2.54*</td>
</tr>
<tr>
<td>Trust</td>
<td>1.42</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ As the educational level increases, scores tend to increase  
- As the educational level increases, scores tend to decrease
Tendencies According to the Length of Organized Basketball Experience

It was found that as the length of the subject's organized basketball experience increased, there was a tendency for scores to increase on three of the AMI traits. This relationship was significant for all three traits at the .05 level of confidence. Simple linear regression analysis was used to identify the traits of leadership, self-confidence, and emotional control as having this relationship with basketball experience (Table 17).

Differences Between Starters and Substitutes

Simple linear regression analysis was used to determine which traits were related to the status of the player in regard to his role as a starter or as a substitute for his team. Table 18 shows that starters tended to score higher on the traits of self-confidence, significant at the .01 level of confidence, and trust, significant at the .05 level of confidence.

Differences Between Basketball Only Subjects and Basketball - Fall Sport Subjects

The subjects who participated in both basketball and a fall sport scored significantly higher on the trait of conscientiousness than the players who participated only in basketball (Table 19). A t-test of the mean scores of the two groups was significant at the .05 level of confidence for the trait.
TABLE 17. Simple Linear Regression Analysis of the Mean Scores on the AMI Personality Traits for Basketball Players According to the Length of Their Participation in Organized Basketball.

<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>1.71</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>-0.58</td>
</tr>
<tr>
<td>Determination</td>
<td>0.92</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>0.05</td>
</tr>
<tr>
<td>Leadership</td>
<td>2.44*</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>2.50*</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>2.39*</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>1.61</td>
</tr>
<tr>
<td>Coachability</td>
<td>-0.09</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>1.23</td>
</tr>
<tr>
<td>Trust</td>
<td>0.97</td>
</tr>
</tbody>
</table>

Note:  
* Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ As length of experience increases, scores tend to increase  
- As length of experience increases, scores tend to decrease
**TABLE 18.** Simple Linear Regression Analysis of the Mean Scores on the AMI Personality Traits for Basketball Starters and Substitutes.

<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
<th>Starters (N=86)</th>
<th>Substitutes (N=64)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>0.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>-0.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Determination</td>
<td>0.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>-0.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>1.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>2.81**</td>
<td>16.25</td>
<td>13.81</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>1.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>1.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coachability</td>
<td>0.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-0.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>2.30*</td>
<td>16.16</td>
<td>14.51</td>
</tr>
</tbody>
</table>

**Note:**  
* Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ Starters score higher  
- Substitutes score higher
### TABLE 19. T-Test of the Mean Scores on the AMI Personality Traits Between Subjects who Participated in Basketball Only and Subjects who Participated in Both Basketball and a Fall Sport

<table>
<thead>
<tr>
<th>Trait</th>
<th>Basketball Only (N=55)</th>
<th>Basketball and a fall Sport (N=29)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>13.89</td>
<td>13.72</td>
<td>0.20</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>13.07</td>
<td>14.55</td>
<td>-1.77</td>
</tr>
<tr>
<td>Determination</td>
<td>13.80</td>
<td>14.68</td>
<td>-0.78</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>14.18</td>
<td>14.06</td>
<td>0.13</td>
</tr>
<tr>
<td>Leadership</td>
<td>14.20</td>
<td>15.00</td>
<td>-0.73</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>14.63</td>
<td>14.37</td>
<td>0.21</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>14.00</td>
<td>13.96</td>
<td>0.03</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>15.30</td>
<td>14.86</td>
<td>0.41</td>
</tr>
<tr>
<td>Coachability</td>
<td>13.52</td>
<td>15.03</td>
<td>-1.47</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>12.83</td>
<td>15.00</td>
<td>-2.03*</td>
</tr>
<tr>
<td>Trust</td>
<td>15.00</td>
<td>15.82</td>
<td>-0.89</td>
</tr>
</tbody>
</table>

**Note:**  
* Significant at .05 level of confidence  
+ Subjects who played basketball only scored higher  
- Subjects who played basketball and a fall sport scored higher
Differences Between Basketball Only Subjects and Basketball - Spring Sport Subjects

A t-test was used to determine that the subjects who played basketball and a spring sport scored significantly higher on two traits of the AMI than the subjects who participated in basketball only. Those who participated in a spring sport scored higher in drive, significant at the .01 level of confidence, and in conscientiousness, significant at the .05 level of confidence (Table 20).

Differences Between Basketball Only Subjects and Three Sport Subjects

The subjects who participated in three sports scored significantly higher on three traits than subjects who participated in basketball only. A t-test indicated that the three-sport subjects scored higher on drive, leadership, and conscientiousness, all significant at the .01 level of confidence (Table 21).

Differences Between Basketball - Fall Sport Subjects and Basketball - Spring Sport Subjects

A t-test revealed that the spring sport participants scored significantly higher on the trait of drive than the fall sport participants, significance at the .05 level of confidence. The fall sport subjects, however, scored higher on the trait of aggressiveness, significant at the .01 level of confidence (Table 22).
TABLE 20. T-Test of the Mean Scores on the AMI Personality Traits Between Subjects Who Participated in Basketball Only and Subjects Who Participated in both Basketball and a Spring Sport.

<table>
<thead>
<tr>
<th>Trait</th>
<th>Basketball Only (N=55)</th>
<th>Basketball and a Spring Sport (N=36)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>13.89</td>
<td>16.02</td>
<td>-2.57**</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>13.07</td>
<td>11.94</td>
<td>1.27</td>
</tr>
<tr>
<td>Determination</td>
<td>13.80</td>
<td>14.58</td>
<td>-0.70</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>14.18</td>
<td>14.55</td>
<td>-0.44</td>
</tr>
<tr>
<td>Leadership</td>
<td>14.20</td>
<td>14.80</td>
<td>-0.60</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>14.63</td>
<td>15.80</td>
<td>-1.01</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>14.00</td>
<td>15.33</td>
<td>-1.23</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>15.30</td>
<td>13.72</td>
<td>1.69</td>
</tr>
<tr>
<td>Coachability</td>
<td>13.52</td>
<td>14.05</td>
<td>-0.52</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>12.83</td>
<td>15.79</td>
<td>-2.28*</td>
</tr>
<tr>
<td>Trust</td>
<td>15.00</td>
<td>16.02</td>
<td>-1.22</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ Subjects who played basketball only scored higher  
- Subjects who played basketball and a spring sport scored higher
TABLE 21. T-Test of the Mean Scores on the AMI Personality Traits Between Subjects who Participated in Basketball Only and Subjects Who Participated in Three Sports

<table>
<thead>
<tr>
<th>Trait</th>
<th>Basketball Only (N=55)</th>
<th>Three Sports (N=30)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>13.89</td>
<td>17.43</td>
<td>-4.15**</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>13.07</td>
<td>14.60</td>
<td>-1.54</td>
</tr>
<tr>
<td>Determination</td>
<td>13.80</td>
<td>15.93</td>
<td>-1.86</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>14.18</td>
<td>14.76</td>
<td>-0.61</td>
</tr>
<tr>
<td>Leadership</td>
<td>14.20</td>
<td>18.10</td>
<td>-3.97**</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>14.63</td>
<td>16.36</td>
<td>-1.49</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>14.00</td>
<td>14.60</td>
<td>-0.50</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>15.30</td>
<td>14.36</td>
<td>0.92</td>
</tr>
<tr>
<td>Coachability</td>
<td>13.52</td>
<td>15.26</td>
<td>-1.73</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>12.83</td>
<td>16.13</td>
<td>-2.68**</td>
</tr>
<tr>
<td>Trust</td>
<td>15.00</td>
<td>15.26</td>
<td>-0.24</td>
</tr>
</tbody>
</table>

Note:  
* Significant at the .05 level of confidence  
** Significant at the .01 level of confidence  
+ Subjects who played basketball only scored higher  
- Subjects who played three sports scored higher
TABLE 22. T-Test of the Mean Scores on the AMI Personality Traits Between Subjects who Participated in Basketball and a Fall Sport and Subjects who Participated in Basketball and a Spring Sport

<table>
<thead>
<tr>
<th>Trait</th>
<th>Basketball and Fall Sport (N=29)</th>
<th>Basketball and Spring Sport (N=36)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>13.72</td>
<td>16.02</td>
<td>-2.41*</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>14.55</td>
<td>11.94</td>
<td>2.79**</td>
</tr>
<tr>
<td>Determination</td>
<td>14.68</td>
<td>14.58</td>
<td>0.08</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>14.06</td>
<td>14.55</td>
<td>-0.50</td>
</tr>
<tr>
<td>Leadership</td>
<td>15.00</td>
<td>14.80</td>
<td>0.12</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>14.37</td>
<td>15.80</td>
<td>-0.99</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>13.96</td>
<td>15.33</td>
<td>-1.06</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>14.86</td>
<td>13.72</td>
<td>1.04</td>
</tr>
<tr>
<td>Coachability</td>
<td>15.03</td>
<td>14.05</td>
<td>0.82</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>15.00</td>
<td>15.79</td>
<td>-0.56</td>
</tr>
<tr>
<td>Trust</td>
<td>15.82</td>
<td>16.02</td>
<td>-0.20</td>
</tr>
</tbody>
</table>

Note:  * Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ Subjects who played basketball and a fall sport scored higher  
- Subjects who played basketball and a spring sport scored higher
Differences Between Basketball - Fall Sport Subjects and Three Sport Subjects

Analysis by t-test revealed that the subjects who participated in three sports scored significantly higher on two of the AMI traits than the subjects who participated in basketball and a fall sport. Table 23 shows that the three sport subjects scored higher on drive and leadership with differences for both traits significant at the .01 level of confidence.

Differences Between Basketball - Spring Sport Subjects and Three Sport Subjects

A t-test was used to find that there were significant differences between the subjects who were involved in a spring sport and the subjects who participated in three sports. The three-sport subjects scored higher on the trait of aggressiveness, significant at the .05 level of confidence, and on the trait of leadership, significant at the .01 level of confidence (Table 24).

Tendencies According to Basketball Honors Achieved

A simple linear regression analysis was utilized to determine relationships between the level of basketball honors achieved by the subjects and their AMI scores. Table 25 shows that there were no significant relationships between the scores and any basketball honors achieved by the players included in the study.
TABLE 23. T-Test of the Mean Scores on the AMI Personality Traits Between Subjects who Participated in Basketball and a Fall Sport and Subjects who Participated in Three Sports

<table>
<thead>
<tr>
<th>Trait</th>
<th>Basketball and Fall (N=29)</th>
<th>Three Sports (N=30)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>13.72</td>
<td>17.43</td>
<td>-3.90**</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>14.55</td>
<td>14.60</td>
<td>0.05</td>
</tr>
<tr>
<td>Determination</td>
<td>14.68</td>
<td>15.93</td>
<td>-1.00</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>14.06</td>
<td>14.76</td>
<td>-0.62</td>
</tr>
<tr>
<td>Leadership</td>
<td>15.00</td>
<td>18.10</td>
<td>-2.67**</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>14.37</td>
<td>16.36</td>
<td>-1.40</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>13.96</td>
<td>14.60</td>
<td>-0.44</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>14.86</td>
<td>14.36</td>
<td>0.41</td>
</tr>
<tr>
<td>Coachability</td>
<td>15.03</td>
<td>15.26</td>
<td>-0.20</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>15.00</td>
<td>16.13</td>
<td>-0.83</td>
</tr>
<tr>
<td>Trust</td>
<td>15.82</td>
<td>15.26</td>
<td>0.42</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ Subjects who played basketball and a fall sport scored higher  
- Subjects who played three sports scored higher
### TABLE 24. T-Test of the Mean Scores on the AMI Personality Traits Between Subjects who Participated in Basketball and a Spring Sport and Subjects who Participated in Three Sports

<table>
<thead>
<tr>
<th>Trait</th>
<th>Basketball and Three Sports (N=36)</th>
<th>Three Sports (N=30)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>16.02</td>
<td>17.43</td>
<td>-1.41</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>11.94</td>
<td>14.60</td>
<td>-2.40*</td>
</tr>
<tr>
<td>Determination</td>
<td>14.58</td>
<td>15.93</td>
<td>-1.07</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>14.55</td>
<td>14.76</td>
<td>-0.18</td>
</tr>
<tr>
<td>Leadership</td>
<td>14.80</td>
<td>18.10</td>
<td>-2.81**</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>15.80</td>
<td>16.36</td>
<td>-0.41</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>15.33</td>
<td>14.60</td>
<td>0.54</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>13.72</td>
<td>14.36</td>
<td>-0.64</td>
</tr>
<tr>
<td>Coachability</td>
<td>14.05</td>
<td>15.26</td>
<td>-1.03</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>15.79</td>
<td>16.13</td>
<td>-0.20</td>
</tr>
<tr>
<td>Trust</td>
<td>16.02</td>
<td>15.26</td>
<td>0.63</td>
</tr>
</tbody>
</table>

Note:  
* Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ Subjects who played basketball and a spring sport scored higher  
- Subjects who played three sports scored higher
<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>0.90</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>-0.86</td>
</tr>
<tr>
<td>Determination</td>
<td>-0.37</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>1.15</td>
</tr>
<tr>
<td>Leadership</td>
<td>-0.12</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>1.89</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>0.29</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>1.07</td>
</tr>
<tr>
<td>Coachability</td>
<td>1.10</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>0.18</td>
</tr>
<tr>
<td>Trust</td>
<td>0.49</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence
+ As achievement level increases, scores increase
- As achievement level increases, scores decrease
Tendencies According to the Athletic Achievement of the Father

Table 26 indicates that a simple linear regression analysis failed to find any significant relationships between the AMI trait scores and the level of athletic achievement of the subjects' fathers.

Tendencies According to the Athletic Achievement of the Mother

A relationship was found between the level of athletic achievement of the subjects' mothers and the AMI scores on four of the personality traits. The relationship on the trait of conscientiousness was significant at the .01 level of confidence and the relationship on the traits of drive, determination, and coachability was significant at the .05 level of confidence. A simple linear regression analysis was utilized to determine that as the level of the athletic achievement of the mothers increased, the scores achieved on the AMI traits by the subjects also tended to increase (Table 27).

Tendencies According to Athletic Aspirations

A simple linear regression analysis shows that on four of the AMI traits, there is a significant relationship with the athletic aspirations of the subjects (Table 28). It was found that as the level of the subjects' aspirations increased, the scores on the traits of drive, determination, self-confidence, and coachability tended to increase. Significance was at the .01 level of confidence
TABLE 26. Simple Linear Regression Analysis of the Mean Scores on the AMI Personality Traits for Basketball Players According to the Level of Athletic Achievement of Their Fathers

<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>1.40</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>1.25</td>
</tr>
<tr>
<td>Determination</td>
<td>-0.95</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>-1.34</td>
</tr>
<tr>
<td>Leadership</td>
<td>0.15</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>1.43</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>1.73</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>0.63</td>
</tr>
<tr>
<td>Coachability</td>
<td>0.27</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>1.03</td>
</tr>
<tr>
<td>Trust</td>
<td>-0.51</td>
</tr>
</tbody>
</table>

Note: * Significant at .05 level of confidence  
+ As achievement level increases, scores increase  
- As achievement level increases, scores decrease
TABLE 27. Simple Linear Regression Analysis of the Mean Scores on the AMI Personality Traits for Basketball Players According to the Level of Athletic Achievement of their Mothers.

<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>2.15*</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>0.64</td>
</tr>
<tr>
<td>Determination</td>
<td>2.35*</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>0.75</td>
</tr>
<tr>
<td>Leadership</td>
<td>0.33</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>1.05</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>1.40</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>0.72</td>
</tr>
<tr>
<td>Coachability</td>
<td>1.96*</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>2.61**</td>
</tr>
<tr>
<td>Trust</td>
<td>-1.15</td>
</tr>
</tbody>
</table>

Note:  
* Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ As achievement level increases, scores increase  
- As achievement level increases, scores decrease
TABLE 28. Simple Linear Regression Analysis of the Mean Scores on the AMI Personality Traits for Basketball Players According to the level of Their Athletic Aspirations

<table>
<thead>
<tr>
<th>Trait</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>2.92**</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td>0.56</td>
</tr>
<tr>
<td>Determination</td>
<td>2.91**</td>
</tr>
<tr>
<td>Guilt Proneness</td>
<td>0.47</td>
</tr>
<tr>
<td>Leadership</td>
<td>0.84</td>
</tr>
<tr>
<td>Self-Confidence</td>
<td>1.99*</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>1.31</td>
</tr>
<tr>
<td>Mental Toughness</td>
<td>0.37</td>
</tr>
<tr>
<td>Coachability</td>
<td>2.05*</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>1.12</td>
</tr>
<tr>
<td>Trust</td>
<td>1.43</td>
</tr>
</tbody>
</table>

Note:  
* Significant at .05 level of confidence  
** Significant at .01 level of confidence  
+ As aspirations rise, scores increase  
- As aspirations fall, scores decrease
for the traits of drive and determination and at the .05 level of confidence for the traits of self-confidence and coachability.

Conclusions

In considering the following conclusions, it should be noted that there are possible interrelationships among the background characteristics of the subjects. For example, when analyzing the effects of family size on AMI trait scores it must be kept in mind that low status families tend to have more children than middle and high status families. Therefore, the results of the analysis may be a reflection of status rather than family size. Several factors could have a simultaneous effect on the test scores of an individual. It might be unwise to view any characteristic as an independent predictor of behavior.

1. The black basketball players scored significantly higher than the white players on the trait of mental toughness. The white players scored significantly higher on drive and conscientiousness. Therefore the hypothesis of no differences between the two groups is rejected.

2. As the social status level of the subjects increased from low to high, their scores tended to increase on the trait of drive. The hypothesis of no relationship is rejected.

3. When black players of low status were compared with white players of low status, there were no significant differences on the AMI traits. The hypothesis of no differences is retained. Of the
30 subjects in the low status category, only 2 were white. Therefore, the findings of this portion of the study are probably based on an insufficient number of white subjects for proper statistical analysis.

4. White players of middle status scored significantly higher than black players of middle status on the trait of drive. The hypothesis of no differences is rejected.

5. Black players of high status scored significantly higher than white players of high status on the trait of emotional control. The hypothesis of no differences is rejected.

Of the 31 subjects in the high status category, only 1 was black. Therefore, the findings of this portion of the study was probably based on an insufficient number of black subjects for proper statistical analysis.

6. Players living with both natural parents scored significantly higher on the trait of drive when compared to the players living with one natural parent and a stepparent. The hypothesis of no differences is rejected.

7. When players living with both natural parents were compared to players living with either one natural parent or a relative, there were no significant differences on the AMI traits. The hypothesis of no difference is retained.

8. Subjects living with one natural parent or a relative scored significantly higher on the trait of guilt proneness than subjects living with one natural parent and a stepparent. The hypothesis of no differences is rejected.
9. Subjects who were first-born children scored significantly higher on the trait of conscientiousness than subjects who were later-born children. The hypothesis of no differences is rejected.

10. As family size increased there was a tendency for the AMI scores of the subjects to decrease on the traits of drive, determination, self-confidence, emotional control, conscientiousness, and coachability. The hypothesis of no relationship is rejected.

11. As the level of educational aspirations of the subjects increased, there was a tendency for their scores to increase for the trait of leadership. The hypothesis of no relationship is rejected.

12. As the level of leadership attained in school organizations by the subjects increased, their scores tended to increase on the traits of drive, determination, leadership, self-confidence, emotional control, mental toughness, conscientiousness, and trust. The hypothesis of no relationship is rejected.

13. As the subjects' attitude toward school grew more positive, their scores tended to increase on the traits of leadership, drive, conscientiousness, determination, self-confidence, and trust. The hypothesis of no relationship is rejected.

14. As the level of educational achievement of the subjects' fathers increased, there was a tendency for the scores of the subjects to increase on the traits of drive and emotional control. Their scores tended to decrease on the trait of guilt proneness. The hypothesis of no relationship is rejected.
15. As the level of educational achievement of the subjects' mothers increased, there was a tendency for the subjects' scores to increase on the traits of drive, self-confidence, emotional control, and conscientiousness. The hypothesis of no relationship is rejected.

16. As the length of the subjects' organized basketball experience increased, there was a tendency for the scores to increase on the traits of leadership, self-confidence and emotional control. The hypothesis of no relationship is rejected.

17. Subjects who were starters tended to score higher on the traits of self-confidence and trust than the subjects who were substitutes. The hypothesis of no differences is rejected.

18. Subjects who participated in both basketball and a fall sport scored significantly higher on the trait of conscientiousness than the subjects who played basketball only. The hypothesis of no differences is rejected.

19. Subjects who participated in basketball and a spring sport scored significantly higher on the traits of drive and conscientiousness than those who played basketball only. The hypothesis of no differences is rejected.

20. Subjects who participated in three sports scored significantly higher on the traits of drive, leadership, and conscientiousness than subjects who participated in basketball only. The hypothesis of no differences is rejected.
21. Basketball and spring sport participants scored significantly higher on the trait of drive than basketball and fall sport participants. However, basketball and fall sport players scored significantly higher on the trait of aggressiveness. The hypothesis of no differences is rejected.

22. Subjects who played three sports scored significantly higher on the traits of drive and leadership than the subjects who participated in basketball and a fall sport. The hypothesis of no differences is rejected.

23. Subjects who played three sports scored significantly higher on the traits of aggressiveness and leadership than the subjects who played basketball and a spring sport. The hypothesis of no differences is rejected.

24. No significant relationships were found between the subjects' AMI scores and the level of basketball honors achieved by the subjects. The hypothesis of no relationship is retained.

25. No significant relationships were found between the subjects' AMI scores and the level of athletic achievement of their fathers. The hypothesis of no relationship is retained.

26. As the level of athletic achievement of the subjects' mothers increased, there was a tendency for the subjects' scores to increase on the AMI traits of conscientiousness, determination, drive and coachability. The hypothesis of no relationship is rejected.
27. As the subjects' level of athletic aspirations increased, there was a tendency for their scores to increase significantly on the traits of drive, determination, self-confidence, and coach-ability. The hypothesis of no relationship is rejected.
SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Summary

Problem

The central problem of this study is to determine the relationship between selected autobiographical data and the personality traits of high school basketball players.

Objectives

To analyze the data for the purpose of determining the relationship between the selected autobiographical data and the personality traits of the subjects as measured by the Athletic Motivation Inventory.

To increase the understanding of the possible application and use of the Athletic Motivation Inventory.

To contribute to the understanding of how the high school athlete's individual characteristics affect his motivation.

Procedure

The subjects for this study were 150 varsity basketball players from 12 high schools in the metropolitan area of Portland, Oregon. The personality traits of the subjects were measured by the Athletic Motivation Inventory (AMI). The autobiographical, or background, data were gathered through a questionnaire devised by the writer.
The AMI and the data questionnaire were administered to the subjects in April and May of 1974. The AMI results were machine scored by the Institute for the Study of Athletic Motivation. The questionnaire data and the AMI raw scores were placed on computer cards and analyzed by the Oregon State University Computer Center at Corvallis, Oregon.

Statistical significance was arbitrarily set at the .05 level of confidence, with significance at the .01 level being indicated where it occurred. A total of 27 null hypotheses were formulated and tested by appropriate statistical methods. The t-test was used to determine the difference between the mean scores on the AMI traits of groups within the study population. Simple linear regression analysis was employed to find relationships between the AMI trait scores and particular variables within the data. T-values were listed for each comparison to identify the significant relationships or differences in the study. The .05 level of confidence was indicated where the t-values reached 1.96, and the .01 level was shown where the t-values reached 2.57.

Analyses of Data

There were 11 traits applied to 27 hypotheses for a total of 297 comparisons within the study. The required level of significance was reached on 62 of the comparisons. Therefore, of the 297 comparisons made in this study, 21 percent of them were significant at the required level. Of the 27 null hypotheses, only four
were retained after analysis of the data. Of the remaining 23 hypotheses, 11 were rejected due to significant relationships found between one or more of the 11 AMI traits and the particular variable from the background data. The other 12 hypotheses were rejected on the basis of differences found between the means of the AMI scores of groups within the study population.

Discussion

Race

The literature was divided between support for differences between blacks and whites and support for the position that there are no differences. This study was partially supportive of Stewart (1973) who found that blacks scored significantly better on four traits of the AMI. This study indicated significantly higher scores for blacks on the trait of mental toughness, which is one of the four traits identified in the Stewart study. The black athlete might be considered mentally tougher as a result of the struggle to achieve social mobility as seen by Kardiner (1966) and others. However, the results of this study do not support the idea that blacks have a higher self-esteem than whites. Here, the white players scored significantly higher on the traits of drive and conscientiousness. Lower scores on conscientiousness by blacks could be related to the fact that only one of the teams in the study had a black coach, which might have indicated a potential for mistrust and an apparent lack of dependability among black players with
white coaches. That whites scored better on the trait of drive seems to run counter to popular beliefs about black athletes possessing a strong drive to rise above the ghetto environment. One problem in analyzing the differences between blacks and whites is that the AMI measures the self-images of whites living in a white environment. They are comparing themselves with other whites rather than with black players, since most of the black players in the study were on predominantly black teams.

It must be kept in mind that the differences found in this population cannot be inferred to any other population. Other studies dealing with personality inventories in the athletic environment have found contrasting results when testing separate populations (Lakie, 1962). It is entirely possible that a different population of basketball players would produce results that differ from this study. This must be remembered throughout the present discussion.

Social Status

Sewell and Haller (1956) and Rosenberg (1965) held that those of high social status tend to have better self-image than those of low status. The present study supports that view in regard to the personality trait of drive. Both the middle and high status groups scored significantly higher than the low status group. It is logical that higher status families would have capitalized on the personality trait of drive to achieve that high status level.
An additional analysis was made of the differences in status groups according to race. It was found that there were no differences between blacks and whites of low status. This result supports the contention of Rosen (1959), Cook (1969), and Getsinger (1972) that there are no differences attributable to race, and that differences found in any study are attributable to social status rather than race. It should be noted that there were 28 low status blacks, but only 2 low status whites in the population of this study. For completely accurate analysis, it would be desirable to have a greater number of low status whites.

Middle status white players scored significantly higher on the trait of drive than did middle status blacks. On the other hand, high status black players scored significantly higher than whites on the trait of emotional control. There were 30 white subjects in the high status group compared to only 1 black subject. The analysis of the three status levels reveals no difference among low status players, a difference in favor of whites at the middle status level, and a difference in favor of blacks of high status. While these results cause a rejection of two of the hypotheses of no difference, it appears that there is no significant trend according to race among the three status levels. The results of this study involve only two significant differences out of 33 comparisons. These results are very weak support for the notion of racial differences.
Parent Status

Rosenberg (1965) suggested that while those who come from an intact home tend to have higher self-esteem, those who are from homes where a remarriage has occurred do not score as well as those from a broken home without remarriage. This is contrary to the popular idea that a surrogate father can replace the natural father. This study lends some support to the Rosenberg theory.

It was found that players living with both natural parents scored significantly higher on the trait of drive than players who lived with one natural parent and a stepparent. Players who lived with one natural parent or a relative scored higher on the trait of guilt proneness than players living with one natural parent and a stepparent. There were no significant differences between those who lived with both natural parents and those who lived with one natural parent or a relative. The players living with a stepparent were the only group with inferior scores on the AMI. Rosenberg contends that remarriage tends to be more damaging to the self-image than the occurrence of a broken home through death or divorce.

Birth Order

Virtually all of the available literature supports the contention that first-born children have better self-images and are more achievement oriented than later-borns. This study lends only light support to the notion of superiority among first-borns.
First-born children surpassed later-born children to a significant degree on the trait of conscientiousness. There is an immense number of possible combinations of the sexes and family size within the birth order structure. This study did not attempt to visualize those possibilities. The fact that the difference between the first-borns and later-borns is not more pronounced might be due to such factors as the presence in the study of a number of players who were the oldest or only male in the family because of the presence of older sisters. Those subjects might have a high self-esteem due to being the only or oldest male in their family.

**Family Size**

The literature suggests that self-images are stronger for children from smaller families. This study supports the literature very strongly. Scores on the AMI tended to be higher on all 11 traits for the players from smaller families with significance being reached on six of the traits. Subjects from smaller families scored significantly higher on the traits of determination, emotional control, coachability, drive, self-confidence, and conscientiousness. These findings are consistent with those of Ellis and Beechley (1951) who found more emotional problems among the children from larger families; Belmont and Marolla (1973) who found intelligence and achievement orientation to decrease as family size increased; and Zajonc (1975) who found that as family size increases, the children
have fewer resources and attention available to them for personal development.

Educational Aspirations

Rosenberg (1965) found the need for achievement, or aspiration, to be greater among those with high self-esteem. In this study, the relationship was significant for only one trait when the AMI scores were compared to the level of the subjects' aspirations. Leadership appeared to be significantly related to the level of aspirations. There were no significant relationships for the remaining ten AMI traits. Leadership is a form of achievement which might account for its significance in the study.

Leadership in School Organizations

Rosenberg (1965), Cattell (1965), and Friesen (1966) all agreed that those designated as leaders would tend to have better self-images than non-leaders. This study supports the literature in that significant relationships were found on eight of the 11 AMI traits. As the subjects' level of leadership increased, their scores tended to increase on the traits of drive, determination, leadership, self-confidence, emotional control, mental toughness, conscientiousness, and trust. Scores tended to be higher on the remaining three traits as well but did not reach the required level of significance. A strong leader would logically exhibit high self-esteem and would score high on a personality inventory. The results of this portion
of the study indicate one of the strongest relationships in the entire study.

Attitude Toward School

As the subjects' attitude toward school grew more positive, their scores tended to be higher on the traits of leadership, conscientiousness, drive, determination, self-confidence, and trust. There appears to be no specific literature in support of such a relationship. The result is logical if one considers the school environment to be achievement oriented. It is probable that the successful student-athlete would experience a high self-esteem as a result of his awareness that he was successful. His sense of achievement would undoubtedly enhance his attitude toward school.

Educational Achievement of the Parents

There was a significant relationship between the increase in the educational level achieved by the father and the subjects' scores on three AMI traits. As the educational level increased, the scores on drive and emotional control tended to increase. As the educational level increased the scores on guilt proneness tended to decrease. As the educational level of the mothers increased, the subjects' scores tended to increase on the traits of drive, self-confidence, emotional control, and conscientiousness. There was no literature found which suggested a relationship between the
educational level achieved by the parents and the self-images of their children. The trait of drive indicates a desire to be successful, which the parent undoubtedly relied on to gain an education. The parent would probably tend to foster the same drive in his children.

Organized Basketball Experience

There apparently is very little literature dealing with the influence of the length of experience in athletics on the personality of the participant. This study indicated a significant relationship between length of experience and three of the AMI traits. As experience increased in the number of years of participation in organized basketball, the subjects tended to score higher on the traits of leadership, self-confidence, and emotional control. These results disagree with Ikegami (1970) who found athletes to be less apt to seek leadership as their experience increased.

It is possible that those who have the greatest experience also tend to have the greatest ability in basketball. By nature, the sport of basketball is one that demands a long period of skill development before excellence can be achieved. The better performers would probably be more self-confident as a result of their success in progressing through the years of competition. The same athletes would probably be looked to for leadership by the less experienced players.
Starters and Substitutes

Stewart (1971) found starters scored significantly higher on the traits of drive, self-confidence, and leadership when compared with substitutes. This study identified self-confidence and trust as traits where starters scored significantly higher than substitutes.

The starters might enjoy greater self-confidence as a result of achieving their goals, or it may be that the more self-confident subjects tend to emerge as starters. It is possible that self-confidence is a factor that functions in two ways simultaneously. For some, it may determine their initial status as a player, while for others it may develop as a result of their participation.

Trust might also function in two ways. It may be that starters become more trusting as a result of being rewarded by their coaches and recognized by their teammates as the better performers. On the other hand, they may be better able to function in the athletic environment from the outset because of their ability to trust coaches and teammates.

Total Sports Participation

The differences found in the area of sports participation appear to be consistent with popular notions about athletes. For example, those who participated in basketball and a fall sport scored significantly higher in aggressiveness than those who participated in basketball and a spring sport. Most of the fall sport participants were football players, while a contact sport
is not available during the spring. Thus, the more aggressive personality would be expected to appear or to be developed among the fall sport participants. The three sport group also scored higher in aggressiveness than the spring sport group.

Lakie (1962) found that although there were differences between sports groups at particular schools, those differences did not necessarily appear at other schools in the same sports. He concluded that there were no consistent differences between sport groups. In this study, there is some consistency in that those who play basketball only tend to score lower than all other groups, and those who play three sports tend to score better than all other groups where differences are found.

The basketball and spring sport group scored significantly higher on the trait of drive than both the basketball only group and the basketball and fall sport group. Peterson, Weber, and Trousdale (1962), suggested that individual sport participants are more self-sufficient than team sport participants. Many of the spring sports such as golf, tennis, and track involve individual efforts which might account for the higher scores in drive by the subjects who limit themselves to basketball and a spring sport.

The three-sport athletes scored higher on drive than both the basketball only group and the basketball and fall sport group. The quality of drive, or the desire to be successful, may be the factor that compelled the three-sport athletes to remain active during the entire year.
The three sport group scored significantly higher on the trait of leadership than each of the other three groups. It is probable that the athlete who shows strong leadership tendencies is recruited by coaches of other sports in the hope that they can employ his leadership capabilities in their sport. It is also possible that the athlete with strong leadership qualities is more comfortable when he is actively involved in a sport and using his influence.

The basketball only group scored significantly lower on the trait of conscientiousness than each of the other three groups. Conscientiousness includes placing the good of the team above one's own well-being, which might indicate that the basketball only group felt less obligated than others to participate in other sports. Some of those who scored higher might participate out of a sense of obligation rather than an actual desire to play.

Basketball Honors Won

There were no significant relationships between the AMI trait scores and the level of basketball honors achieved by the subjects. There is apparently no literature dealing with the subject. It might logically be expected that those who achieved honors would be those with the better self-images. In this study, there is no evidence of that relationship.
Athletic Achievement of the Parents

There is no literature explaining the possible relationship between the athletic achievement of parents and the self-images of their children. This study failed to identify any traits that had a significant relationship with the athletic achievement of the subjects' fathers. However, there were significant relationships between the mothers' achievement and the AMI scores of their sons for the traits of drive, determination, coachability, and conscientiousness.

Fathers would ordinarily be expected to support their children in their athletic efforts. The mothers would be less likely to support athletic participation under ordinary circumstances. Therefore, the athlete whose mother had participated in athletics would tend to have unusual support and understanding at home. Instead of being fearful of athletics, the mother who had been an athlete would probably promote participation. The athlete would be more likely to display a positive self-image with the additional support from an understanding mother.

Athletic Aspirations

As the athletic aspirations of the subjects increased, their scores on the AMI were significantly higher for the traits of drive, determination, self-confidence, and coachability. Rosenberg (1965) stated that the desire for achievement, or high aspirations, tends to be strongest among those with high self-esteem. This study supports the Rosenberg research.
The basketball players who have high aspirations would tend to be the more successful players. It is logical that they would also tend to have positive feelings about themselves as a result of their success.

Interpretation Problems

Dealing with the problem of interpreting the variables of the AMI is difficult. Ogilvie and Tutko (1971) contend that it is doubtful that sport produces personality or character in the participant to the extent that is commonly accepted. They suggest that sport is like other endeavors in that those who enter with the strongest personalities are the most likely to survive. If that is true, the AMI trait scores can be considered independent variables or predictors of behavior. When compared to factors such as parent status, family size, or social status, the trait scores would appear to be dependent variables influenced by the environment of the subject. It seems that a single personality trait might act simultaneously as the predictor and the predicted.

According to Deutscher (1973), the process of interpretation must also be considered in variable analysis. He points out that the process of interpretation intervenes between the events of experience indicated by the independent variable and the formed behavior represented by the dependent variable. Because of the integral position of the defining process between the two variables, it becomes necessary to incorporate the process in the
account of the relationship. The same variable may be interpreted differently by different categories of people and, sometimes, by different individuals. Therefore the conclusions of this study may have been affected by the methods of analysis used and by the conceptions of the writer. The problem of conceptual confusion can occur with either the subject or the researcher. An individual may simultaneously or sequentially harbor a number of different orientations toward the same social object. The subject in this study, in response to questions on the AMI, must choose one response that may not adequately describe his outlook or that may only describe his perceptions on that particular day.

The AMI measures verbal attitudes which may or may not be consistent with the subject's overt behavior. Deutscher (1973) comments extensively on the problems related to the difference between what a subject will say and what he will actually do. His conclusion is that not all attitudes imply behavior.

Self-disclosure research has been limited by the rudimentary stage of development of the instruments and by restricted populations which have prevented generalizations. This study is not an exception. West (1971) attempted to validate a self-disclosure inventory by comparing its results with information gained from a select group of target subjects. He concluded that the correlation between the inventory results and the ratings of the target subjects was sufficiently high to encourage continued use of that inventory as a research instrument. He further stated that the validity of the
self-report questionnaire remains largely unchallenged and that such questionnaires provide a method of data collection that has been unsurpassed.

The only present alternative to the use of personality inventories such as the AMI is reliance on the subjective observations by the coach as an estimate of the psychological status and needs of the athlete. Albaugh (1970) researched the ability of coaches to estimate the personality strengths of their players and concluded that the coaches in his study were generally unable to make accurate observations.

The current trends in athletics will undoubtedly demand that administrators and coaches be able to substantiate their claims of the educational value of athletics with something better documented than the verbal assurances of the coaches. Communication is at the heart of the educational process. Hopefully, this study will help to motivate coaches, including the writer, to continue the search for a better understanding of communication through athletics.

**Recommendations**

1. A study involving all of the teams within a given league or region in order to achieve a better balance between winning and losing teams.

2. A longitudinal study to dilute the influences of the possible extremes of an exceptional year.
3. A study using multiple linear regression analysis to identify significant correlations between the AMI traits as they are compared to the background characteristics of the subjects.

4. A study to determine the effectiveness of the AMI with subjects at the seventh and eighth grade level of competition. Some athletes of that age group have competed in athletics for two or more years.

5. A study to determine the possible existence of certain profile types. Certain profiles might be found to occur with regularity among athletes, allowing the coach to recognize and deal with them using an approach that has proven successful with other athletes of the same profile type.

6. A longitudinal study to determine the ages or levels at which the most rapid or the slowest rate of change is likely to occur in the athlete's personality.

7. A study to determine the effectiveness of counseling an athlete with AMI information by comparing post-test data with data from athletes who have not been counseled.


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APPENDICES
APPENDIX A

ATHLETIC MOTIVATION INVENTORY

A reproduction of the Athletic Motivation Inventory is included on the following pages of this appendix. Written permission to reproduce the copyrighted AMI in this research paper was granted by William J. Winslow, President of the Institute of Athletic Motivation.
IMPORTANT

PLEASE READ THESE INSTRUCTIONS BEFORE Completing THE AMI

The purpose of this test is to provide information that can be personally beneficial to an athlete. To maintain a high level of accuracy, you must complete the form according to these instructions.

PROCEDURE:

There are three possible answers to each question in this booklet.

EXAMPLE: I like sports (A) true (B) uncertain (C) false

To indicate your answer mark the proper box on the answer sheet; DO NOT MAKE ANY MARKS IN THIS BOOKLET. Blacken out the left hand box if your answer is (A), the middle box if your answer is (B), or the right hand box if you choose the (C) answer. Some questions may not apply to you very well, or may not have answers that EXACTLY fit you; others may have MORE than one suitable answer. In these cases select the answer, from those given, that best fits you. Each item has a specific purpose, so check your answer sheet after you finish to make certain you have answered every question.

WORK NATURALLY:

Work quickly but NOT carelessly. Try not to spend too much time thinking about any one question. The first, natural response that comes to you will usually be the best.

ANSWER HONESTLY:

Be as honest as possible about yourself. Mark the answer that best describes you as you are NOW. Do not answer in terms of what you would like to be or what you think the coach wants you to be.

RESEARCH DATA:

After you have answered the test questions turn the answer sheet over and provide the research information requested. This data is used exclusively for research and will remain absolutely confidential.

AUTHORS: Thomas A. Tutko, Ph.D.; Leland P. Lyon, M.A.; Bruce C. Ogilvie, Ph.D.
1. When I was young, I thought about breaking a sports record ........... (A) always (B) often (C) sometimes
2. I don't speak out in team or strategy meetings because I feel that I don't have anything to add to the discussion ........... (A) true (B) in between (C) false
3. In athletics, one must either "push or be shoved" ........... (A) strongly agree (B) agree (C) somewhat agree
4. I feel like defying the coach ........... (A) sometimes (B) seldom (C) never
5. Once I start working on a new drill or exercise, I often work on it until I am exhausted ........... (A) true (B) in between (C) false
6. I find it hard to handle my feelings during competition ........... (A) sometimes (B) seldom (C) never
7. I believe you can truly win only if you obey all the rules ........... (A) true (B) uncertain (C) false
8. When a fellow athlete goes out of his way to help me, I am suspicious of his motives ........... (A) often (B) sometimes (C) never
9. When competing on a team, I feel responsible when the team loses ........... (A) always (B) often (C) sometimes
10. I would like to have the responsibility of being team captain ........... (A) very true (B) true (C) somewhat true
11. When the coach criticizes me, I become upset rather than helped ........... (A) sometimes (B) seldom (C) never
12. I have lost in competition at least once ........... (A) true (B) uncertain (C) false
13. I always do exactly what the coach tells me to do ........... (A) true (B) in between (C) false
14. It annoys me when fellow athletes fool around in practice instead of knuckling down ........... (A) always (B) sometimes (C) never
15. I am a confident athlete ........... (A) very true (B) true (C) somewhat true
16. What really gets respect from your opponent is to show him how assertive you are ........... (A) strongly agree (B) agree (C) somewhat agree
17. I respect the training rules because they help me to be a better athlete ........... (A) very true (B) quite true (C) true
18. I practice on my own in addition to regular practice sessions ........... (A) true (B) in between (C) false
19. When I'm having trouble with a certain skill or move, I get depressed ........... (A) sometimes (B) seldom (C) never
20. When I have had a conceited fellow athlete I have been able to put up with him rather well ........... (A) often (B) sometimes (C) seldom
21. I can't sleep the night before a contest because the competition keeps going through my mind ........... (A) often (B) sometimes (C) seldom
22. My fellow athletes come to me with their problems ........... (A) often (B) sometimes (C) seldom
23. It sometimes bothers me for days after the coach has chewed me out ........... (A) true (B) in between (C) false
24. I have never had a bad day in my athletic career ........... (A) true (B) uncertain (C) false
25. I always want my fellow competitors to perform as well as they can ........... (A) true (B) in between (C) false
26. People could say of me that I would beat my mother in order to win ........... (A) agree (B) in between (C) disagree
27. When a competition is going badly, I lose hope that I will win ........... (A) sometimes (B) seldom (C) never
29. During competition it is easy for me to really hate my opponent
(A) very true (B) true (C) somewhat true

30. I can understand why coaches do not always treat their athletes equally
(A) true (B) uncertain (C) false

31. I get tired just thinking about a long, hard practice session
(A) sometimes (B) seldom (C) never

32. If I make a mistake at the beginning of a contest it is hard for it not to affect me
(A) sometimes (B) seldom (C) never

33. I obey the rules of competition to the letter
(A) always (B) sometimes (C) never

34. I sometimes get angry with fellow athletes too easily
(A) true (B) uncertain (C) false

35. I have known a number of people who have made it to the top without putting in hard work
(A) true (B) uncertain (C) false

36. When I am with fellow competitors I let them do most of the talking
(A) often (B) sometimes (C) seldom

37. I like to be praised when I do well
(A) always (B) often (C) sometimes

38. Athletic competition just started ten years ago
(A) true (B) uncertain (C) false

39. I try to think about unexpected things that might come up during competition
(A) very true (B) true (C) somewhat true

40. When the coach calls me aside to talk I
(A) see a chance to talk about things that bother me (B) in between (C) am afraid something is wrong

41. If an opponent beats me, I congratulate him after the contest
(A) sometimes (B) seldom (C) never

42. I think that the best competitors in my sport
(A) have better coaches (B) have better strategy (C) are better athletes

43. When I get a new competition strategy I immediately study it until I know it perfectly
(A) always (B) often (C) sometimes

44. I get discouraged when I have several bad breaks during competition
(A) sometimes (B) seldom (C) never

45. I can imagine athletes who think that being liked by the coach is more important than doing a really good job
(A) true (B) uncertain (C) false

46. I seldom worry about people treating me poorly
(A) very true (B) true (C) somewhat true

47. The best way to correct mistakes is through very long practice sessions
(A) true (B) uncertain (C) false

48. I find it challenging to try to persuade my fellow athletes to do what I want them to
(A) sometimes (B) seldom (C) never

49. When I do something wrong, I prefer the coach to tell me about it privately
(A) true (B) doesn’t matter (C) false

50. Most coaches do not like to lose a contest
(A) true (B) uncertain (C) false

51. Participating in athletics is worth the risk of a very serious injury
(A) very true (B) true (C) somewhat true

52. I try harder in competition than I do in practice
(A) always (B) often (C) sometimes

53. Sometimes I lose out on things because of my indecision
(A) true (B) uncertain (C) false

54. I enjoy getting into arguments about athletics
(A) often (B) sometimes (C) never
55. Coaching ........................................ (A) can be harmful to certain types of athletes (B) in between (C) is always helpful

56. Even though long coaching sessions sometimes bore me I try to pay attention .................................................. (A) always (B) often (C) sometimes

57. If I get angry or upset during a contest I usually calm down quickly ................................................................. (A) true (B) in between (C) false

58. I rarely think that training rules inhibit my personal freedom ................................................................. (A) true (B) in between (C) false

59. If an opponent plays dirty, I think it's only fair that I play dirty too ................................................................. (A) true (B) uncertain (C) false

60. Physical exercises ........................................ (A) are useful only to get loosened up (B) in between (C) are meaningless unless one does them until it really hurts

61. I sometimes wish that I were more outspoken ................................................................. (A) true (B) in between (C) false

62. I feel left out of things that go on among my fellow athletes ................................................................. (A) sometimes (B) seldom (C) never

63. I participate in athletics because I hate sports ................................................................. (A) true (B) uncertain (C) false

64. If I had broken the training rules I would not tell a lie to stay out of trouble ................................................................. (A) true (B) uncertain (C) false

65. I am considered to be one of the most emotionally tough competitors by my fellow athletes ................................................................. (A) true (B) uncertain (C) false

66. I can handle unexpected situations very well ................................................................. (A) very true (B) true (C) somewhat true

67. I feel the most important thing is to be as assertive as you can when competing ................................................................. (A) agree (B) somewhat agree (C) it isn't the most important thing

68. If I were not participating in a contest I would ................................................................. (A) ask the coach why I wasn't competing (B) talk to my fellow athletes about it (C) say nothing

69. During lulls in practice sessions I sometimes find it difficult to keep from daydreaming ................................................................. (A) true (B) in between (C) false

70. When small problems or disagreements happen in practice, I have trouble putting them out of my mind ................................................................. (A) sometimes (B) seldom (C) never

71. My personal desires sometimes tempt me to break certain rules ................................................................. (A) true (B) uncertain (C) false

72. When I read unfair write-ups of me, my team, or my sport, I am more inclined to forget rather than get angry ................................................................. (A) true (B) in between (C) false

73. My mistakes sometimes torture me for days ................................................................. (A) true (B) in between (C) false

74. When I want something, I am good at getting it ................................................................. (A) always (B) often (C) sometimes

75. It doesn't usually bother me when the coach chews me out in front of others ................................................................. (A) true (B) in between (C) false

76. I have won all of my contests ................................................................. (A) true (B) uncertain (C) false

77. Hustle is important, but it can't compensate for lack of talent ................................................................. (A) true (B) uncertain (C) false

78. The pressure parts of competition are the parts I like most ................................................................. (A) very true (B) true (C) somewhat true

79. If one of my fellow athletes is not putting out, I tell him that I am angry ................................................................. (A) sometimes (B) seldom (C) never

80. I sometimes resent having to stick to the coach's strategy or plan ................................................................. (A) sometimes (B) seldom (C) never

81. There are some drills that I have trouble sticking to ................................................................. (A) true (B) in between (C) false
82. In the heat of a contest I say things to my fellow competitors that I later regret ............... (A) sometimes (B) seldom (C) never
83. I turn in my equipment in the same condition I got it .......... (A) always (B) often (C) sometimes
84. I know some fellow athletes who are a little "off" mentally even though they are not willing to admit it ........ (A) true (B) uncertain (C) false
85. Even when the coach criticizes me unjustly, I still feel guilty .......... (A) true (B) uncertain (C) false
86. I don't really like telling my fellow athletes what to do .......... (A) very true (B) true (C) somewhat true
87. When I perform badly, I sometimes feel like crying ............... (A) true (B) in between (C) false
88. The youngest athlete I know is 85 years old ............... (A) true (B) uncertain (C) false
89. I compete just as hard when I am losing badly as I do when I am winning .......... (A) always (B) often (C) sometimes
90. Most of my fellow athletes have told me that I work hard at my sport ......... (A) true (B) uncertain (C) false
91. I feel humble when facing really great athletes ............... (A) true (B) in between (C) false
92. A person's athletic ability is tested most by sports that are physically demanding .......... (A) very true (B) true (C) somewhat true
93. I would like to become a coach .......... (A) very true (B) true (C) uncertain
94. The most important thing in becoming a good athlete is long hours of hard practice .......... (A) true (B) uncertain (C) false
95. The tension that I feel just before competition worries me .......... (A) sometimes (B) seldom (C) never
96. I sometimes feel like skipping practice when other important matters come up .......... (A) true (B) uncertain (C) false
97. I trust most people I know .......... (A) true (B) in between (C) false
98. I think the coach criticizes me unjustly .......... (A) sometimes (B) seldom (C) never
99. When I get into an argument, I ............... (A) usually win (B) sometimes win (C) seldom win
100. I think I am more sensitive than most athletes .......... (A) often (B) sometimes (C) seldom
101. Losing contests is the purpose of athletic competition .......... (A) true (B) uncertain (C) false
102. I think that I will win all my contests .......... (A) always (B) depends on the competition (C) depends on how I feel
103. When competing against an opponent, one should .......... (A) concentrate on his strength (B) in between (C) concentrate on his weakness
104. I think I can become the best in my sport, in my league or class .......... (A) true (B) uncertain (C) false
105. I rarely swear during competition .......... (A) true (B) in between (C) false
106. One problem with athletics is that the individual athlete has so little to say in what happens .......... (A) true (B) uncertain (C) false
107. I am willing to practice longer and harder than most of my fellow athletes .......... (A) very true (B) true (C) somewhat true
108. I am afraid of losing .......... (A) sometimes (B) seldom (C) never
109. I think of what effect my actions will have on others before I act .......... (A) always (B) often (C) sometimes
110. Sometimes I believe that I have to take orders
from athletes who are really stupid              (A) true (B) in between (C) false
111. When a team loses, it is usually the team's
fault more than the coaches' fault             (A) very true (B) true (C) somewhat true
112. I would rather follow the lead of my
fellow athletes than be the leader             (A) sometimes (B) seldom (C) never
113. I never worry about getting injured        (A) true (B) in between (C) false
114. Professional athletes are paid for competing
(A) true (B) uncertain (C) false
115. There will probably always be someone
better at my sport than I am                   (A) true (B) uncertain (C) false
116. I have to prepare to face my opponent because there
are times when I'm not sure I can beat him     (A) true (B) in between (C) false
117. To be most effective during competition one should
(A) hate his opponents (B) respect his opponents for their ability
(C) not worry about them but concentrate on oneself
118. I have respected every coach I have competed for        (A) agree (B) somewhat agree (C) disagree
119. I practice only as hard as I have to in order to get by (A) sometimes (B) seldom (C) never
120. Even though my fellow athletes like me, they think I am careless
(A) true (B) seldom (C) never
121. I sometimes admire an athlete who cleverly
breaks the rules in order to win                (A) true (B) in between (C) false
122. I rarely try to “show-up” fellow athletes when
I think they are behaving selfishly or unjustly (A) true (B) in between (C) false
123. When I have an injury I prefer to
(A) compete if it is not too painful (B) compete anyway
(C) compete until I am unable to continue
124. I like to be chosen to demonstrate new skills to others (A) often (B) sometimes (C) seldom
125. I am sometimes hurt more by how the coach
says things than by what he says                (A) true (B) uncertain (C) false
126. Fans never go to see athletic events        (A) true (B) uncertain (C) false
127. I get disgusted with myself when I haven't learned a skill properly (A) always (B) often (C) sometimes
128. I feel inferior to at least some other
competitors in my league or class              (A) sometimes (B) seldom (C) never
129. If an opponent defeats me, I can't wait to get him back (A) always (B) often (C) sometimes
130. I usually compete best without the advice of others (A) true (B) uncertain (C) false
131. Once I try something new, I work at it
continually until I perfect it                  (A) very true (B) true (C) somewhat true
132. The weather seldom affects my feelings about competing (A) very true (B) true (C) somewhat true
133. In practice I insist on doing things
as correctly as possible                        (A) always (B) nearly always (C) most of the time
134. Too much praise for my performance sometimes makes me
feel uneasy because I suspect that it is not sincere (A) true (B) in between (C) false
135. Every time I make a mistake during competition
I feel that I really deserve to be chewed out   (A) true (B) in between (C) false
When I am with a group of fellow athletes, I let others make the decisions. (A) often (B) sometimes (C) seldom

I feel a good chewing out can help an athlete perform better. (A) always (B) often (C) sometimes

Athletics rarely requires physical exercise. (A) true (B) uncertain (C) false

I believe I spend too much extra time on unimportant things during practice. (A) true (B) in between (C) false

I feel miserable and depressed after losing. (A) always (B) often (C) sometimes

I believe that I have a great deal of self-confidence. (A) strongly agree (B) agree (C) somewhat agree

Some people may think that I am too aggressive when competing. (A) true (B) uncertain (C) false

When I have ideas on how to improve performance, I (A) tell the coach (B) keep them to myself (C) tell other competitors

If asked to follow a rigid off-season training schedule, I would stick to it religiously. (A) very true (B) true (C) somewhat true

Even when I have been looking forward to competition, I do not feel up to it when the time comes. (A) sometimes (B) seldom (C) never

Training rules are sometimes unjust and should be questioned. (A) true (B) uncertain (C) false

Fellow competitors who act superior don’t usually bother me. (A) true (B) in between (C) false

Hard work resulting in pain is (A) an important part of becoming a winner (B) uncertain (C) not as important as some people think

Most of my fellow athletes think that I have a forceful personality. (A) true (B) uncertain (C) false

The coaches I have performed best for were (A) hard nosed and tough (B) in between (C) sensitive and understanding

No one ever watches athletic events. (A) true (B) uncertain (C) false

I take good care of the athletic equipment issued to me. (A) always (B) usually (C) seldom

Almost all of the teams I have competed on have had winning seasons. (A) true (B) uncertain (C) false

Sometimes I think I do not have the ability to do all of the things that I want to. (A) true (B) uncertain (C) false

The most important part of competition for me is not to let opponents push me around. (A) agree (B) in between (C) disagree

I rarely share my problems with the coach. (A) true (B) in between (C) false

Very tedious drills cause me to become impatient. (A) often (B) sometimes (C) seldom

I feel that the life of an athlete has too many frustrations and restrictions. (A) sometimes (B) seldom (C) never

When I have competed for a team, I placed the good of the team before my own personal well-being. (A) always (B) often (C) sometimes

It is mainly the fear of a penalty that prevents athletes from breaking the rules of the sport. (A) true (B) uncertain (C) false

Sometimes my mistakes are caused by my fellow athletes’ mistakes. (A) true (B) uncertain (C) false

When I get into an argument I feel like backing down. (A) sometimes (B) seldom (C) never
163. I need the encouragement of the coach (A) very true (B) true (C) somewhat true
164. This country is not the only one which has athletic competition (A) true (B) uncertain (C) false
165. I think an athlete should take it easy on a much inferior competitor (A) sometimes (B) seldom (C) never
166. When things are going badly, I think that I can change them for the better (A) always (B) often (C) sometimes
167. It is not important to me to humiliate my opponent (A) true (B) in between (C) false
168. When there is a team captain or leader, I accept his leadership when the coach is absent (A) always (B) often (C) sometimes
169. After a long, tiring practice, I usually like to go over the mistakes I have made (A) true (B) uncertain (C) false
170. I feel that the coach misunderstands me (A) sometimes (B) seldom (C) never
171. When training rules interfere with my freedom, I feel like breaking them (A) sometimes (B) seldom (C) never
172. I rarely worry about fellow athletes saying bad things about me behind my back (A) very true (B) true (C) somewhat true
173. I believe in the expression "pain, torture, and agony" for a winner (A) strongly agree (B) agree (C) somewhat agree
174. I seem to be in the role of keeping others in line (A) sometimes (B) seldom (C) never
175. I believe there are things happening among my fellow athletes that I don't know about (A) sometimes (B) seldom (C) never
176. I have never made a mistake during competition (A) true (B) uncertain (C) false
177. I usually avoid arguments with my fellow athletes (A) true (B) in between (C) false
178. I keep practicing hard even when others are fooling around (A) always (B) often (C) sometimes
179. I don't speak up in athletic or team meetings because I am afraid I might be criticized (A) sometimes (B) seldom (C) never
180. I don't think that you can be friendly to an opponent and still beat him (A) true (B) uncertain (C) false
181. I believe that the coach is not always right (A) sometimes (B) seldom (C) never
182. I seldom stay after practice to work out (A) true (B) somewhat true (C) false
183. I lose my temper during competition (A) sometimes (B) seldom (C) never
184. There is absolutely no excuse for being late for practice (A) true (B) uncertain (C) false
185. There are usually one or two fellow athletes with whom I can't get along (A) sometimes (B) seldom (C) never
186. When the team loses it is usually my fault (A) true (B) uncertain (C) false
187. I would like the responsibility of being a coach (A) very true (B) true (C) uncertain
188. I perform poorly after being harshly criticized (A) sometimes (B) seldom (C) never
189. Most athletes do not wear uniforms (A) true (B) uncertain (C) false
190. When new athletes join the team or competition (A) try to show them up (B) hope they compete well (C) try to help them
APPENDIX B

INDIVIDUAL DATA QUESTIONNAIRE

Directions: Please circle the appropriate number, or fill in the blank with the appropriate response.

1. Name or code number ________________________________

2. School attended ________________________________

3. Race ________________________________

4. With whom do you live?
   1 father & mother
   2 father & stepmother
   3 mother & stepfather
   4 father only
   5 mother only
   6 relative
   7 other (please explain) ________________________________

5. Educational level achieved by your father.
   0 unknown
   1 less than 8th grade
   2 completed 8th grade
   3 completed high school
   4 two years of college or vocational school
   5 four year college degree
   6 master's degree
   7 doctor's degree or equivalent

6. Educational level achieved by your mother
   0 unknown
   1 less than 8th grade
   2 completed the 8th grade
   3 completed high school
   4 two years of college or vocational school
   5 four year college degree
   6 master's degree
   7 doctor's degree or equivalent

7. How many children are in your family?
   1 6 11
   2 7 12
   3 8 13
   4 9 14
   5 10 15
8. What is your ordinal position in your family?
   1  2  3  4  5  6  7  8  9  10  11  12  13  14  15

9. Employment of father

10. Employment of mother

11. Employment of family's main wage earner if not father or mother

12. What was your father's highest level of athletic achievement?
   0 none
   1 high school
   2 college
   3 professional

13. What was your mother's highest level of athletic achievement?
   0 none
   1 high school
   2 college
   3 professional

14. What are your educational goals?
   1 high school
   2 community college or vocational training
   3 four year college degree
   4 post graduate degree

15. What offices do you hold in school organizations?
   0 none
   1 organization officer
   2 organization president
   3 class or student body officer
   4 class president
   5 student body president

16. How do you feel about school?
   1 dislike it very much
   2 dislike it
   3 no definite feeling
   4 like it
   5 like it very much
17. What are your athletic goals?
   1. high school
   2. amateur
   3. two year college
   4. four year college
   5. professional

18. What was your status in basketball this past season?
   1. starter
   2. substitute

19. What year in school did you begin playing organized basketball?
   1
   2
   3
   4
   5
   6
   7
   8
   9

20. What basketball honors did you win this past season?
   0. none
   1. league
   2. state

21. In which fall sport did you participate this past year?
   0. none
   1. football
   2. gymnastics
   3. cross country
   4. soccer

22. In which spring sport did you participate this past year?
   0. none
   1. baseball
   2. track
   3. tennis
   4. golf