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THE TEMPERAMENT TRAITS OF WOMEN WHO COACH TEAM SPORTS AND INDIVIDUAL SPORTS ON THE INTERCOLLEGIATE LEVEL

by

Sandee L. Hill

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APPROVAL PAGE

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ABSTRACT

HILL, SANDEE LEE. The Temperament Traits of Women Who Coach Team Sports and Individual Sports on the Intercollegiate Level. (1978) Directed by: Dr. Celeste Ulrich. Pp. 241

The purpose of the study was to determine whether there were any significant differences in the temperament traits possessed by women who coached team sports and women who coached individual sports on the intercollegiate level. A second purpose of the study was to determine and compare the temperament traits of these women with regard to the perceptions of themselves as a person and as a coach.

The subjects for this study were 53 women who coached the team sports of basketball and volleyball (N=36) and the individual sports of golf and tennis (N=17) on the intercollegiate level. The subjects coached teams which participated in the 1975-1976 A.I.A.W. Regional Tournaments. The final sample represented Division I and Division II colleges and universities in Regions 2, 3, 5, 6, 7, 8, and 9 of the A.I.A.W. It was determined through the use of an Information Questionnaire that the women in this study had coached on the intercollegiate level for one year or more and had, throughout their professional coaching career, exclusively coached a team or an individual sport.

The Interaction Temperament Model of Buss and Plomin (1975) was used to interpret the results of this study. The research instrument used in this study was a self-report

temperament scale, the EASI III Temperament Survey, constructed by Buss and Plomin.

Differences between the temperament traits of women who coached team sports and individual sports were analyzed using a one-way Multivariate Analysis of Variance (MANOVA) and a one-way Analysis of Variance (ANOVA). The significance level was set at the .05 critical level. The comparison of the perceptions of the coaches of themselves as a person and as a coach with regard to their temperament was analyzed using correlation coefficients. The significance level was set at the .05 critical level.

The identification of the temperament traits of the women who coached team sports and women who coached individual sports revealed that these coaches did not differ significantly in the temperament traits they perceived themselves as possessing. As a group, the team and individual sport coaches were shown to be highly active and sociable. They were also shown to possess an emotionally stable behavioral style and they could delay impulsive responses until such behaviors were deemed appropriate. Furthermore, the comparison of the perceptions of the coaches of their temperament as a person and as a coach yielded significant correlations. Thus, both the team and individual sport coaches viewed their behavioral styles as being similar in a coaching and non-coaching situation.

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CHAPTER I

INTRODUCTION

Theoretical Approach To Studying Personality

In sport psychology, personality has been a frequently studied area because of its relevance to the understanding of behavior. One of the main concerns in the study of personality is determinants or sources of behavior. (Endler and Magnusson, 1976) The actual determinants of behavior, how the determinants develop, and the consistency of behavior across situations are all areas which often are used to distinguish one theory of personality from another.

Endler and Magnusson contended that to study the areas of concern most prevalent in personology, it is useful to distinguish four main models in personality psychology: the trait model; the psychodynamic model; the situationism model; and the interactionism model. The models extend from a construct which assumes that personality is biologically based and inherited to the assumption that behavior is environmentally determined and situationally explicit. It could be assumed that behavior of humans could be plotted on a continuum. At one end of the continuum would be the biologically associated model, namely the trait model, and

at the other extreme of the continuum would be the environmentally sponsored model, the situationism model. Between these two extremes would fall the interactionism and psychodynamic paradigms. To better understand the relationships of the four proposed personality models, it is necessary to look at the focus of each model with regard to its primary facets: the actual determinants of behavior, how the determinants develop, and the consistency of behavior in various situational patterns.

Aetual Determinants of Behavior. The trait and psychodynamic models of personality consider the actual determinants of behavior to be latent, stable traits. Both the traits and psychodynamic models conceptualize the factors that determine behavior as being within the individual and, therefore, behavior is inner-directed.

The trait model emphasizes traits as the prime determinants of behavior. An individual, according to this model, is described in terms of a combination of traits the person possesses. The psychodynamic model assumes a basic personality core serves as the determinant of behavior in different situations. This basic personality core is composed of motives, instincts, and traits and serves as a predispositional basis for behavior in different situations. "In the description of individuals the interest for these two models

lies in the relation between responses in different situations, and between responses and the latent dispositions for which the responses are supposed to be indicators" (Endler and Magnusson, 1976, p. 2). Little emphasis is placed on the influence of situational factors.

Situationism, the antithesis of the trait and psychodynamic models with respect to the actual determinants of behavior, regards situational stimuli as the main determinants of behavior. Psychologists, such as Bandura (1971), Bandura and Walters (1963), and Skinner (1953) contended that the sources of behavior are completely outer-directed because of the influence of the situational factors.

The interactionism model attributes behavior in any situation to the ongoing interaction of the person and situation variables, thus making the actual determinants of behavior inner and outer-directed. "This implies that the individual's behavior is influenced by significant features of the situations, but furthermore the individual chooses the situations in which he performs and selects significant aspects which then serve as cues for his activities in these situations" (Endler and Magnusson, 1976, p. 3).

Therefore, when examining the four models with regard to the actual determinants of behavior, the trait and psychodynamic models suggest behavior is inner-directed from

sources within the person. The situationism model assumes the sources of behavior to be outer-directed or influenced solely by the variables in the situation. Finally, the interactionism model regards the sources of determination to be both inner-and outer-directed implying input into behavior from both the individual and the situation.

Development and Consistency of Behavior. The examination of how an individual's reaction pattern is determined ontogenetically also will be indicative of the consistency of behavior which will appear in various situational patterns. The trait model assumes traits are stable dispositions which are affected to some degree by maturation, but not primarily by environmental factors. Situations are taken into account, but the effects of the situational factors on behavior are not supposed to change the rank order of individuals for any given trait.

According to the psychodynamic model, the latent dispositions determining the actual behavior are formed on the basis of early interpersonal experiences modifying the original inherited instinct. Environmental factors are more influential in the psychodynamic model than in the trait model. However, because it is believed that the individual's personality is stabilized early in life, the adult personality is viewed as being consistent in different situational patterns.

The situationism model assumes that the development of an individual's personality is through social learning and little attention is given to inherited factors. Because the developmental basis for the adult personality is an ongoing learning process, behavior is not conceptualized as being the same with regard to diverse situational patterns.

The interactionism model emphasizes that development is composed of a social learning process involving the interaction of the person and the situation. The person cognitively interprets each situation through the learning which has taken place in previous situations. Through experience, "Not only do situations affect the individual but the person selects and subsequently influences the situations he interacts with" (Endler and Magnusson, 1976, p. 4). Because the psychological meaning of the situation to the individual is an essential determinant of behavior, the individual develops ontogenetically in terms of a social learning process interacting with a given genetic disposition. Consistency or inconsistency of behavior in multifarious situational patterns is a result of the individual's perception of the situation and the behavior he or she interprets as being most appropriate for that situation.

Therefore, when examining the development of behavior and the resulting consistency or inconsistency in behavior,

each of the four models emphasizes a different process. The trait model assumes behavior is consistent because of the biological rather than environmental influences. The psychodynamic models suggests behavior is consistent because the environment is only influential early in life. According to the situationism model, the formation of behavior is an ongoing learning process affected by each situation, and therefore, little consistency is expected in the different situational patterns. As suggested by the interactionism model, an individual's behavior develops through the complex interactions of the person and the situation. Because individuals are an active agent in this interactional process, they interpret and assign meaning to each situation. The consistency or inconsistency of behavior is a result of the psychological meaning the person attaches to the situation.

The trait, psychodynamic, interactionism, and situationism models have been examined with respect to the differences in the actual determinants of behavior, how behavior develops, and the consistency of behavior in various situational patterns. These four models were placed on a continuum designed by the investigator (see Figure 1) to show the relationship among the models with respect to each model's focus on the three aspects of behavior.

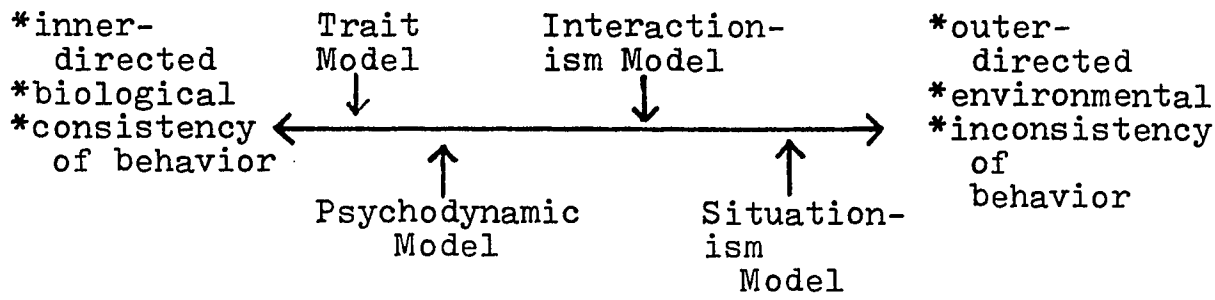


Figure 1. Determinants of behavior of the models of personality psychology.

Interaction Temperament Model

Another model of behavior, the interaction temperament model, is proposed by Buss and Plomin (1975), and supported by this author, as an addition to the four models of personality suggested by Endler and Magnusson. The interaction temperament model, according to Buss and Plomin, suggests that all behavior is a result of the combination of two types of traits--inherited and acquired. Behavior, in the interactional temperament model, is determined by the inherited traits which form the core of personality and by traits which are acquired through learning. Therefore, the total personality is composed of traits from the above two sources--biological and environmental.

The interaction temperament model was chosen as the approach to studying behavior to be used in this study. The concept of temperament, as understood in this study, is the inherited traits of one's personality which are affected by the environment, and, at the same time, affect the environment. What is

inherited is a broad range of each temperament. This initial inherited range is narrowed and molded by life experiences which select the part of the temperament's range most appropriate to such influential factors as family, subculture and roles. However, the range in which the environment has an influence is limited because of the inherited nature of temperament. Furthermore, it must be remembered that the individual is not merely a passive recipient of environmental influences. The temperamental nature of the individual acts as an initiator for making one's environment compatible with one's temperament, as a reinforcer for selectively rewarding or punishing agents in the environment, and as a responder for modifying the impact of the environment on the individual's personality. (Buss and Plomin, 1975)

All behavior, according to the interaction temperament model, is composed of two aspects, content and style. Those traits which are acquired through learning account for the content of behavior. The content of behavior consists of the specific responses an individual makes to the stimuli of the situation. The contents of a person's personality can be quite diverse depending on the extent of the individual's behavioral repertoire. However, temperament is concerned mainly with the style of behavior - how the individual responds rather than what the response is. The determinants of an individual's style of behavior are

inherited traits which remain stable throughout life and in relation to alternative situational patterns.

The trait and psychodynamic models assume that the sources of behavior are relatively stable traits which are stabilized early in life. The interaction temperament model suggests that the temperament or inherited traits of one's personality are relatively stable throughout one's lifetime while the traits which are learned are continually being acquired throughout life.

The interactionism model proposes that behavior is a result of an ongoing interaction of the person's personality and the influences of the specific situation. Both the interactionism model and the interaction temperament model assume that the behavior of an individual involves a reciprocal action. The behavior is affected by the environmental aspects of the situation, but the individual is also an active influence on the environment. The main distinction between the interactionism model and the interaction temperament model is that in the temperament model not all aspects of behavior are affected by the situational patterns. The temperament model suggests that the stylistic aspects of behavior (which are inherited) are relatively unchanged by the person's perception of a specific situation; whereas, the behaviors which are learned are dependent upon the interaction of the person and the situational patterns which the individual perceives. The interactionism model considers both the

style and the content of behavior to be a result of an interaction of the situation and the person's perceptions of that situation. Both models propose that the actual determinants of behavior are inner- and outer-directed.

An interaction view of temperament would be placed on the continuum as proposed by Endler and Magnusson (1976) between the psychodynamic model and the interactionism model (see Figure 2). The position of the interaction temperament model on the continuum is accounted for by the focus of this model with respect to the actual determinants of behavior (inner- and outer-directed), the development of behavior (biological and environmental), and the consistency of behavior.

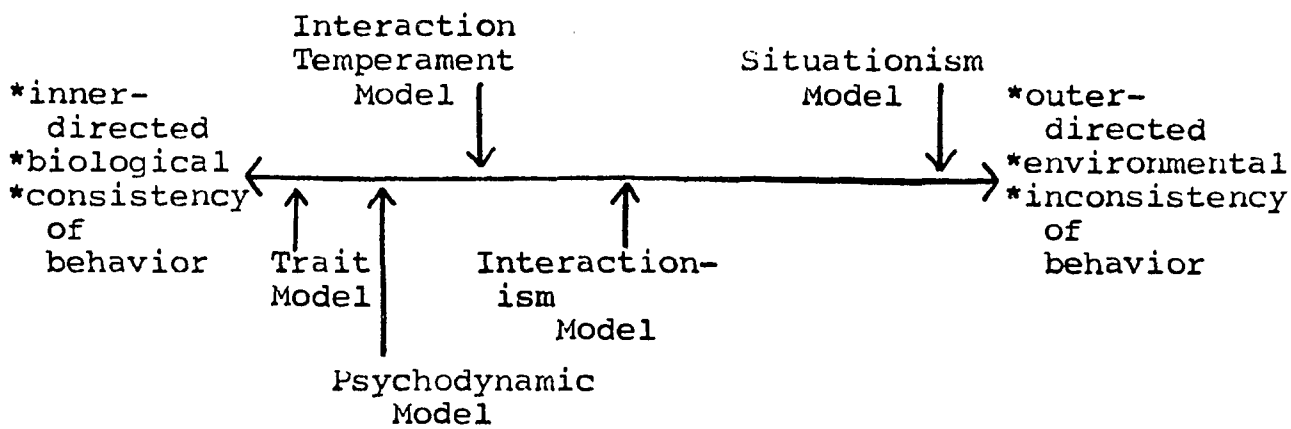


Figure 2. Interaction Temperament Model in relation to the models of personality.

The idea of examining personality from the viewpoint which considers both inherited and acquired traits is not unique to the interaction temperament model. However, models which do consider personality to be influenced by inherited

and acquired traits do not distinguish the inherited traits which designate style from the acquired traits which control the content of behavior. The interaction temperament model contends that the total personality is a combination of genetic and learned dispositions but the concept of temperament is concerned only with the inherited aspects of behavior which will cause an individual's behavioral style to be stable in diverse situational patterns.

Personality Research in Sport

The study of personality is a frequently researched area in sport psychology. The interest, in part, is due to the recognized importance of personality in determining behavior. To be able to explain, describe, and predict an individual's behavior in a sport setting has been a goal of sport psychologists conducting personality research.

To date, the research on personality of the individual in the sport setting has been plagued by conceptual, methodological, and interpretive errors (Martens, 1975, Holtzman, 1976; Fisher, Ryan & Martens, 1976; Smith, 1970; Kroll, 1970). The major conceptual problems deal with the lack of a theoretical or conceptual framework for the personality studies in sport. A theoretical framework on which interpretations can be made is essential if critical decisions are to be made on more than a random basis. In addition, methodologically, personality studies in sport have been weak with

regard to the selection of the instrument. There is a need for a rationale for the selection of the instrument and the acceptance of the theory for which the instrument is constructed. Interpretive problems are encountered when causal relationships are made from correlational evidence. According to Martens (1975), the recognition of such errors is the first step toward their elimination.

The trait model, which assumes personality is relatively stable in various situational patterns, has been extensively used in an attempt to explain, describe, and predict behavior in a sport setting. This approach has been shown to be unsuccessful in the prediction of behavior and has been shown to be erratic in the description of the personality traits of various sport groups. Therefore, the prediction of behavior in a sport setting from the identification of personality traits has not been realized.

Research studies have attempted to identify the differences in the total personality structure of various groups of athletes. Whether the studies have attempted to compare athletes with nonathletes or athletes in various forms of sports, the results to date have tended to show few significant differences. It has been demonstrated that in studies using the trait model, there are experiential and situational variables which influence behavior which are not taken into consideration by this approach (Flanagan, 1951; Johnson, 1969; Lakie, 1962; Malumphy, 1968; Peterson, Weber & Trousdale, 1967).

It may be speculated that another behavioral model could facilitate the location of differences, if indeed any exist.

Although the personality of the athlete has been studied to some degree, the personality of the coach has been a relatively unresearched area. The research on the personality of the coach has dealt mainly with the identification of the personality traits of the male coach and has used the trait model for behavioral interpretations. Attempts to identify the personality traits of the woman coach have been limited. Studies comparing the personalities of women coaches to women physical educators, women educators, and male coaches have shown few significant differences (Tutko, Elliot & Berendson, 1971; Buhrer, 1973; Brown, 1973; Hendry, 1969).

Statement of the Problem

The purpose of this study was to determine whether there were any significant differences in the temperament traits possessed by women who coaches team sports and women who coaches individual sports on the intercollegiate level as they perceived themselves as coaches. A second purpose of the study was to determine and compare the temperament traits of these women with respect to the perceptions of themselves as a person and as a coach.

For the purpose of this study, the interaction temperament model by Buss and Plomin (1975) was used. Buss and Plomin proposed that temperament is composed of four main traits and nine subtraits. The first trait, emotionality, is composed of the subtraits of general emotionality or distress, fear, and anger. The second trait, activity, is determined by the subtraits of tempo and vigor. Sociability is not composed of any subtraits. Finally, impulsivity involves the subtraits of inhibitory control, decision time, persistence, and sensation seeking.

More specifically, an attempt was made to answer the following questions:

1. Do women who coach team sports differ from women who coach individual sports with respect to the four main temperament traits?

2. Do women who coach team sports differ from women who coach individual sports with respect to the nine subtraits?

3. Do women who coach the team sports of basketball and volleyball differ with respect to the four main temperament traits?

4. Do women who coach the team sports of basketball and volleyball differ with respect to the nine subtraits?

5. Do women who coach the individual sports of golf and tennis differ with respect to the four main temperament traits?

6. Do women who coach the individual sports of golf and tennis differ with respect to the nine subtraits?

7. Are the perceptions of the subjects the same or different with respect to how they view themselves as a person and as a coach comparing the four main temperament traits?

8. Are the perceptions of the subjects the same or different with respect to how they view themselves as a person and as a coach comparing the nine subtraits?

Definition of Terms

Activity - Activity refers to the total energy output and is thought of as being on a continuum of behavioral styles from active to lethargic. The main temperament of activity is composed of the subtraits of tempo and vigor.

A.I.A.W. - The A. I. A. W. is the Association of Intercollegiate Athletics for Women.

Anger - Anger is an emotional response brought on by autonomic arousal to a situation which is caused by a strong feeling of displeasure; an attempt to push away a noxious stimulus.

Decision Time - Decision time is the amount of time taken to respond.

Emotionality - Emotionality is best defined by the three terms of arousal, reactivity, and excitability. Emotionality is equivalent to intensity of reaction and is thought of as being on a continuum of behavioral styles from emotional to impassive. The main temperament trait of

emotionality is composed of the subtraits of general emotionality, fear, and anger.

Fear - Fear is an emotional response to a situation perceived as threatening or dangerous with an attempt to give flight.

General Emotionality - General emotionality or distress is an autonomic arousal which causes general emotional excitability.

Impulsivity - Impulsivity involves the tendency to respond quickly rather than inhibiting the response and is thought of as being on a continuum of behavioral styles from impulsive to deliberate. The main temperament trait of impulsivity is composed of the subtraits of inhibitory control, decision time, persistence, and sensation seeking.

Inhibitory Control - Inhibitory control is the ability to delay gratification (antithesis of impulsivity).

Persistence - Persistence is the ability to persevere (antithesis of impulsivity).

Personality - Personality is an individual's patterns of behavior which are determined by the interaction of inherited traits and dispositions which are wholly learned. The behavior exhibited is a result of a genetic blueprint and experiences with which each individual is able to interpret and

act in any given situation.

Sensation Seeking - Sensation seeking is the need to seek new and exciting experiences because of an inability to tolerate boredom.

Sociability - Sociability consists mainly of affiliativeness; a strong desire to be with others. Sociability is thought of as being on a continuum of behavioral styles from gregarious to detached.

Temperament - (Adapted from Allport, 1961, p. 34) Temperament refers to the characteristic phenomena of an individual's nature, including his susceptibility to emotional stimulation, his customary strength and speed of response, the quality of his prevailing mood, and all the peculiarities of fluctuation and intensity of mood, these being phenomena regarded as dependent upon constitutuonal make-up, and therefore largely hereditary in nature.

Tempo - Tempo is the rate of motion or activity; the pace at which an activity is performed.

Vigor - Vigor is the intensity of strength at which an action is performed.

Woman Coach - Any female who is presently employed to coach on the college or university level and has coached one year or more.

Underlying the Research

This study was limited in that it was governed by certain assumptions. The measurement of the women coaches' personality was concerned with the assessment of temperament traits which are inherited and not with the total personality. The total personality for this study was assumed to consist of traits which were inherited and traits which were wholly learned.

Therefore, the concern of this study was centered around the concept of the inherited traits of emotionality, activity, sociability, and impulsivity. It was further assumed that the individual's temperament is influenced by the environment and reciprocally influences the environment. The initial, inherited range of each temperament is somewhat broad, but subsequently through the influence of developmental and environmental factors becomes narrowed, it also affects the environment with which the individual interacts.

The Temperament Theory of Personality Development by Arnold Buss and Robert Plomin was used to interpret the findings of this study. The EASI III Survey was an instrument developed by Buss and Plomin (1975) to measure the four temperament traits of emotionality, activity, sociability, and impulsivity. The EASI III Survey was considered to be a

valid and reliable measure of these four temperament traits.

The four temperament traits of emotionality, activity, sociability, and impulsivity were considered to be behavioral styles which were found in coaching behavior. Furthermore, the subjects' responses to the questions were assumed to be honest and, therefore, true representations of their behavioral styles.

Scope of the Study

The subjects who participated in this study were 53 women who, during the period of 1975 and 1976, coached on the intercollegiate level. The sample was composed of two main groups and four subgroups: 36 women who coached the team sports of basketball (N=20) and volleyball (N=16) and 17 women who coached the individual sports of golf (N=10) and tennis N=7). The subjects were selected from a population of women coaches whose teams participated in the 1975-1976 A.I.A.W. Regional Tournament in Division I and Division II. Division I, or the large college division, were colleges or universities with a student enrollment of 3,000 or more females. Division II, or the small college division, included colleges which had a student enrollment of less than 3,000 female students.

The final selection process for the subjects was based on the criterion that no subject was ever employed in her professional career as a coach of both a team sport and an

individual sport. The final sample of 36 team sport coaches had coached team sports exclusively and the 17 individual sport coaches had coached individual sports exclusively.

Significance of the Study

Cratty (1973) contended that nowhere in sport psychology was more information presently needed than in understanding the coach's behavior. There has been an extensive amount of research completed in an attempt to understand the various behavioral aspects of the athlete. Little research has been completed on the behavior of the coach who is an influential factor on the behavior of the athlete.

The research on the personality of the coach which has been completed has dealt mainly with the personality of the male coach. There is little evidence based upon psychological testing that pertains to the personality of the woman coach. The research which does exist indicates that the personality of the female coach is not distinctive or identifiable with respect to her behavior. In a study designed to identify the meaning of the concept of "woman coach" through the use of semantic differential adjectives, Buhrer (1973) found that the concept of "woman coach" as ascertained by the perceptions of women coaches and women athletes was not distinctive with regard to the coach's behavior or role. The remaining research completed on the personality of the woman coach has also failed to identify

distinctive behaviors which are indicative of the woman coach's personality. The lack of significant findings may in part be due to the conceptual, methodological, and interpretive errors which arise with the use of the trait model or may be due to the fact that women coaches do not possess distinctive personalities which characterize their behavior.

An examination of the research methods used to study personality in sport reveals that the trait model has been extensively used almost to the exclusion of any other model. The psychodynamic model has not been used primarily because of the clinical training needed to use the research methods for measurement of personality. Martens (1976) contended that neither the trait nor the situationism models were appropriate for the study of personality in sport situations. The trait model neglected the effects of the situational variables and the situationism model neglected the effects of the person variables. Martens suggested that the interactionism model was the direction personality research in sport should take.

However, the use of the interactionism model is limited to the measurement of one trait, one subject, and one situation at a time. The ability to explain, describe, and predict behavior in various situational patterns therefore would be limited. The interaction temperament model suggests

that an individual possesses inherited traits which cause an individual's behavioral style to be consistent in diverse situational patterns. The use of the interaction temperament model warrants consideration in an attempt to explain, describe, and predict the behavioral styles in a sport setting. The consistency of behavior caused by the genetic basis of the temperament traits would presuppose that the individual would demonstrate the same behavioral style whether measured in or out of a sport situation.

Therefore, the examination of temperament or behavioral style in a coaching situation warrants consideration. Furthermore, the identification of the temperament traits of the woman coach is a viable area for study because of the lack of knowledge and understanding of the female coach's role in an athletic situation. Knowledge concerning the temperament traits of the woman coach can contribute to the explanation and description of a behavioral style in a coaching situation whether it be in a team or individual sport. In addition, since women's athletics is a visible and prominent aspect of the total sport scene in America today, the use of the interaction temperament model for the purpose of identifying the temperament traits of team and individual sport coaches may eventually aid in the prediction and subsequent advising of women who desire to go into coaching. Therefore, the temperament traits of emotionality, activity,

sociability, and impulsivity as proposed by Buss and Plomin (1975) warrant consideration with regard to the identification of the assumed behavioral style of women who coach team sports and women who coach individual sports.

CHAPTER II

REVIEW OF LITERATURE

Temperament

Historical Background

The concept of temperament as a system for classifying personality types has a complicated background with a short experimental history. Temperament first appeared in the medical writings of Hippocrates in the form of a humoral doctrine. Hippocrates created four types of temperament: irritable (choleric), depressed (melancholic), optimistic (sanguine), or calm and listless (phlegmatic) (Diggins and Huber, 1976). The doctrine of humors stated that an individual possessed these four "humors" which were body fluids. An excess of any of the humors or body fluids caused an individual to possess one of the four temperaments. "An excess of yellow bile would cause a choleric temperament; too much black bile, a melancholic temperament; excessive blood, a sanguine temperament; and an oversupply of phlegm, a phlegmatic temperament" (Diggins and Huber, 1976, p. 74). The doctrine of humors, although having undergone slight modification, persisted until 1628 when the discovery of the circulation of the blood cast

doubt upon the whole humoral doctrine. The ideas regarding temperament have undergone many changes, the most important of which has been the empirical evidence to establish the scientific relevance of temperament to personality and personality development.

Defining Temperament

As with the concept of personality, there has been no one universally accepted definition of temperament. Theorists, whose theory of personality included the concept of temperament, have defined the term in accordance with their conceptualization of personality.

Although the exact definition of temperament varies among theorists, the persisting idea that temperament deals with the constitutional basis of the total personality has been generally accepted. Temperament was the "internal weather in which personality develops: it was the subjective climate provided by native physiological and kinetic endowment" (Sahakian, 1974, p. 402). A disposition which was referred to as being constitutional, or inherited, was most often labeled a temperament.

A precise definition of temperament which stresses the constitutional or hereditary origin of the concept has been set forth by Allport:

> Temperament refers to the characteristic phenomena of an individual's nature, including his susceptibility to emotional stimulation, his customary strength and speed of response, the quality of his prevailing mood, these being phenomena regarded as dependent upon constitutional make-up, and therefore largely hereditary in origin. (1961, p. 34)

There are two important aspects of Allport's definition which distinguish temperament from other aspects of personality.

The first distinguishing aspect of Allport's definition deals with the constitutional make-up or the heritability of temperament. According to Buss and Plomin (1975), the most important criterion for temperament is inheritance. The dispositions which are said to be inherited distinguish temperament from other aspects of one's personality which are acquired through socialization and experience of the developing child. In order for a trait to be called a temperament, there must be some evidence of a genetic origin.

The second aspect of Allport's definition which distinguishes temperament from other aspects of personality deals with the idea of "behavioral style". Behavior can be analyzed in two specific ways: content and style. Allport's referral to an individual's "susceptibility to emotional stimulation, his customary strength and speed of response, the quality of his prevailing mood, and all the peculiarities of fluctuation and intensity of mood" are

characteristics which refer to the style of responding rather than the specific content of the behavior. Stylistic behavior refers to "how" the behavior is exhibited rather than what the behavior is. Buss and Plomin contended that it is in the stylistic aspects of behavior that temperament makes a major contribution to an individual's behavior. Thomas and Chess (1977) contended that one's behavioral style referred to the "how rather than the what (abilities and content) or the why (motivations) of behavior" (p. 9). Temperament, being equated with one's behavioral style, was a phenomenological property of one's behavior. The differences in the behavior of two individuals in the same situation often yield observable differences in behavioral styles. This, then, is one's temperamental nature.

Temperament has been said to be the "core of personality" (Boughman, 1972) and the "raw materials out of which personality is formed" (Allport, 1961). The primary needs and temperamental behaviors are the foundation materials out of which personality is created and developed through a wide variety of experiences. An individual's personality includes temperament traits, but also includes traits which are determined primarily by experiential factors. Thus, while personality is a more inclusive concept than temperaments, it is the individual's temperament which is modified and built upon through experience which yields the more

complex structure of personality (Boughman, 1972).

Theoretical Conceptualizations of Temperament

While there are a limited number of theories which deal directly with temperament, there are theories which include the concept of temperament within the general schema of the total theory of personality. For a better understanding, it is necessary to examine a general overview of selected theoretical concept of temperament and to identify the traits comprising temperament.

For some time the idea has persisted that a relationship existed between people's body size and their personality. Sheldon (1942), studying the body structure of 400 college men, determined that physique consisted of three main components: endomorphy (softness and roundness), mesomorphy (strength and muscle), and ectomorphy (fragility and angularity). He devised a system called somatotyping by which each of the three components was used to describe a person's body structure. Sheldon believed that specific personality characteristics were associated with each body type. To demonstrate this idea, he interviewed 200 college men and rated them according to somatotype and three kinds of temperament: viscertonia, somatotonia, and cerebrotonia. His comparisons yielded a correlation between the following somatotypes and temperaments:

Table 1

Correlations Between Somatotypes and Temperament

(From: The Human Personality by D. Diggins & J. Huber, 1976, p. 76)

SOMATOTYPE	TEMPERAMENT
Endomorph	Viscerotonia
softness and roundness	sociableness, desire for affection, love of comfort
Mesomorph	Somatotonia
strength and muscle	love of muscular activity, assertiveness, vigor
Ectomorph	Cerebrotonia
fragility and angularity	reserve, love of privacy, love of mental activity

Sheldon posed three possible explanations for the existence of the relationship between body structure and the accompanying temperament. He contended that people who share the same kind of physique may have similar experiences and, therefore, similar temperaments; and behavior and physique both may be caused by genetically determined factors. (Diggins and Huber, 1976, p. 26) Although Sheldon's research supported popular notions such as "fat people are jolly and sociable", "muscular people are active", and "thin people are withdrawn", there are many people whose body structure and

personalities defy this classification system.

In studying personality, Diamond (1957) felt that too much attention was given to the experiential and cultural aspects, thereby neglecting the relatively simple beginnings of individual differences. He examined temperament from the viewpoint that constitutional factors determined that individuals in the same situation responded in different ways. Diamond stated that "Temperament included those aspects of individuality which depend on the ease of arousal of innate patterns of responses, always remembering that this ease of arousal is itself subject to modification by experience" (p. 50). Diamond used the comparative approach in his research to learn from the personality dispositions of animals. He formulated four temperaments shared by men and animals close to man: impulsiveness, affiliativeness, aggressiveness, and fearfulness. He felt that these particular temperaments dealt with man's as well as animals' responses to the environment though he recognized that human behavior was more complex. For Diamond, temperament was the total personality, and the temperamental characteristics of an individual were the end products of a developmental process in which heredity, maturation, and learning were entered in important degrees. The main weakness of this approach was that Diamond relied on animal studies for his concept and selection of temperament, thus making this theory speculative

and lacking in confirming data.

Guilford (1959) felt personality should be divided into classes of traits or modalities. He viewed personality as being an integrated whole composed of these modalities: interests, attitudes, temperament, aptitudes, morphology, physiology, and needs (Guilford, 1959, p. 7). Guilford considered temperament to be the most poorly defined modality. He simply defined temperament traits as having to do with the manner in which actions occurred. Guilford has classified temperament into three major groups of dispositions identifiable from the individual's behavior: (1) traits which apply to many kinds of behavior or behavior in general; (2) traits which apply to emotional aspects of behavior; and (3) traits which apply to social behavior. (p. 409) These factors were organized into a matrix, which is depicted in Table 2. The temperament factors have been categorized into three main groups of dispositions: general, emotional, and social. Each temperament factor can be viewed as a bipolar behavior.

Guilford, using the three major groups of temperament factors, devised a scale which led to the identification of thirteen dispositions which were purported to measure temperament. Lovell (1945) did a factor analysis of the thirteen scores of the scale to determine the number of factors which were represented by these variables. Lovell's factoral analysis determined that the thirteen variables

Table 2

A Matrix of Temperament Traits

(From Personality by J. P. Guilford, 1959, p. 409)

Kind of Dimension	Area of Behavior Involved		
	General	Emotional	Social
Positive vs Negative	confidence vs. inferiority	cheerfulness vs depression	ascendence vs timidity
Responsive vs Unresponsive	alertness vs. inattentiveness	immaturity vs vs. maturity	socialization self-sufficiency
Active vs Passive	impulsivity vs deliberateness	nervousness vs. composure	social initiative vs. passivity
Controlled vs Uncontrolled	restraint vs. rhathymia	stability vs. cycloid	friendliness vs. hostility
Objective vs Egocentric	objectivity vs hypersensitivity	poise vs self-consciousness	tolerance vs criticalness

identified by Guilford were not independent factors and could be grouped into four categories: drive-restraint, realism, emotionality, and social adaptability (p. 11). Thurstone (1951) undertook a similar factor analysis of Guilford's thirteen variables and found that there were seven independent factors: reflectiveness, impulsivity, sociability, activity, dominance, vigorousness, and emotional stability (p. 16). The studies of Lovell (1945) and Thurstone (1951) indicated that Guilford's thirteen temperament traits did

not represent independent factors.

Another criticism of Guilford's approach to the identification of temperament traits was the lack of any data to support the inheritance of the traits. Guilford (1959) contended that "The most satisfactory view is that heredity sets limits on development but that the environment can have effects within these limits" (p. 31).

Cattell (1967) conceptualized temperament as being one of the three modalities of personality. He contended that personality was composed of three types and traits: dynamic, ability, and temperament (Cattell, 1950). "Temperament traits explain how a person does things and are probably, because of this function, most representative of personality" (Cattell, 1967, p. 11). For Cattell, temperament was stylistic in the sense that it dealt with tempo, energy, form, persistence, and emotional reactivity. Temperament, therefore, was related to the energetic and emotional behavior patterns in people.

Cattell recognized that hereditary and environmental factors interacted to determine the strength of various source traits. Although Cattell did not list any specific temperament traits, he felt that for some traits, hereditary factors may have a greater influence than environmental factors. Cattell assessed the relative weight of genetic and environmental influences on source traits, using a

method called the Multiple Abstract Variance Analysis (MAVA). MAVA involved gathering data on the resemblance between twins and between siblings reared together or in adopted homes. The data were then analyzed to estimate the proportions of individual variation of each trait on the Cattell 16 PF that was associated with genetic differences, with environmental differences, and the interaction of the two. Initial studies using the MAVA indicated hereditary-environment correlations which were predominantly negative (Cattell, et al, 1955; Cattell, et al, 1957). Cattell interpreted this as evidence for a "law of coercion to the bio-social man--that is the tendency for environmental influences to oppose systematically the expression of genetic variation. . ." (Hall and Lindzey, 1970, p. 400).

Cattell theorized that some source traits, known as temperament traits, have a higher nature-nurture ratio than other traits. The greater contributions of nature to temperament traits made them less responsive to changes in the environment and, therefore, relatively stable and unchanged by learning or changes in the environment.

Eysenck (1970) defined personality as "the more or less stable and enduring organization of a person's character, temperament, intellect, and physique, which determines his unique adjustment to the environment" (p. 2). The concept of temperament, according to Eysenck, was the more or less

enduring aspects of affective behavior ("emotion").

Through research using personality questionnaires (Eysenck, 1956; Eysenck & Prell, 1951; Eysenck & Eysenck, 1963), Eysenck (1956) has shown that certain behavior patterns related to extraversion/introversion have a substantial hereditary basis. However, it was Eysenck's contention that some kind of "structural intermediary" exists between hereditary and observable behavior. "It is clear that behavior as such cannot be inherited and that only structures (i.e., glands, neurons, nerve cells, etc.) can be inherited in any meaningful way" (p. 225).

Eysenck's view of heredity insisted that an individual inherited bodily structures and not specific behaviors. These bodily structures, which were relatively stable throughout life, contributed to the behavior a person exhibited. The contribution made by these bodily structures was greater in relation to specific behaviors such as sociability.

Eysenck viewed behavior as being bio-social--to have both biological and social causes. The following figure represents Eysenck's conception of the relationship of personality phenotype to genotype and environment.

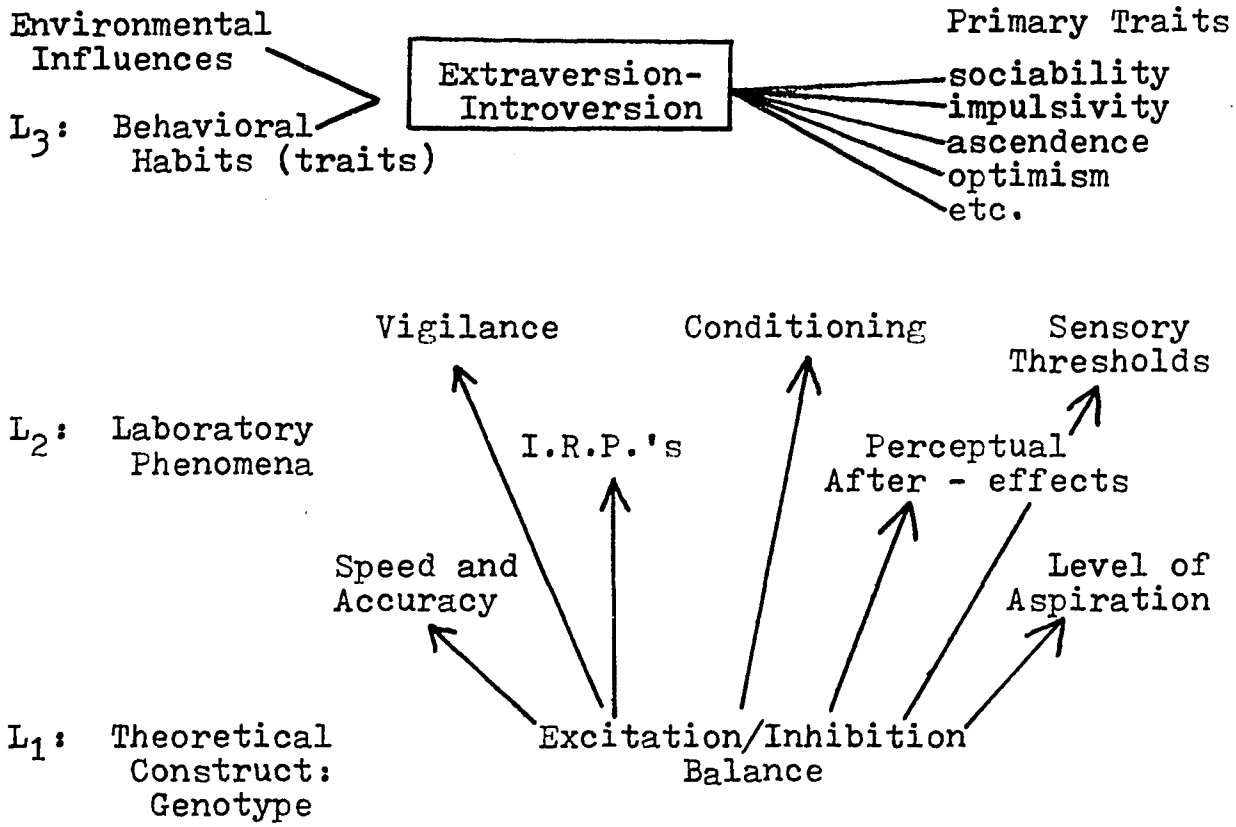


Figure 3. Conception of phenotype to genotype and environment.

(From The Biological Basis of Personality by H.J. Eysenck, 1967, p. 220)

L_1, the theoretical construct of the individual's genotype, deals with the relative predominance of excitatory or inhibitory potential in different people. From this hypothetical construction, certain deductions about various response patterns (i.e., sensory threshold, involuntary rest pauses, etc.) can be observed in different people. L_1 and L_2 represent an individual's genotype. Primary traits (L_3) such as sociability, ascendence, impulsivity, etc., which combine to make up our phenotype, arise through the interaction of the individual's genotype and the environment.

Eysenck (1967) recognized the interaction of heredity and environment and that "no complex pattern of behavior is likely to be exclusively the product of environment or of heredity" (p. 221). There was a further confounding factor in that each individual's inherited bodily structures would vary, causing the combination of hereditary and environmental influences to be different for each individual. Biological causes (i.e., bodily structures) act in such a way as to predispose an individual to respond in certain ways to stimulation. According to Eysenck (1967), "this stimulation may or may not occur, depending on circumstances which are entirely under environmental control" (p. 222).

The development of personality in relation to behavior disorders has been the focus of the temperament theory of Thomas, Chess, and Birch (1968, 1970, 1977). They suggested that there were nine inborn characteristics, present at birth, which were the building blocks of personality. (Thomas and Chess, 1977, p. 21):

1. activity level
2. rhythmicity or regularity of functions (i.e., eating)
3. acceptance or withdrawal from a new stimulus
4. adaptability to new or altered situations
5. threshold of responsiveness to stimuli necessary to evoke a discernible response
6. intensity or energy level of reaction
7. quality of mood
8. distractibility
9. attention span or persistence

Each trait is scored on a three-point scale of high, medium, and low. These nine categories of temperament were

established by an inductive analysis of the parent interview protocols for the infancy period in the first twenty-two children used in the New York Longitudinal Study conducted by Thomas and Chess (1977).

The temperament theory of Thomas et al. (1970) stated that an individual started life with nine tendencies at birth and these same tendencies can be traced throughout development. The New York Longitudinal Study was initiated in 1950 by Thomas et al. (1968) because they felt that environmental influences were given too much credit in determining the growth and development of the child's personality.

Aside from the theoretical issue of environmental versus hereditary influences, Thomas and Chess (1977) had a humanistic concern. They felt that, "from the environmentalist perspective, parents had to take undeserved blame for any deviancy in the behavior of their children" (Thomas and Chess, 1977, VIII). The main thrust of the research conducted suggested that certain children with "difficult temperaments" developed deviant behavior. The responsibility for such deviant behavior cannot be placed on either the parent or the child. "The child cannot be blamed for his or her constitutional uniqueness and the parent cannot be blamed for using socially accepted child-rearing norms which will not work with their particular child" (Thomas and Chess, 1977, X). Thomas et al. (1968) have become

increasingly concerned, as mental health professionals, with their inability to make a direct correlation between environmental influences, such as parental attitudes and practices, and the child's psychological development.

Although the research for the temperament theory of Thomas, Chess, and Birch began as a direct divergence from a strictly environmentalist approach, the theory has been developed as an interactional developmental approach. The interaction of inborn characteristics and the effects of the environment combined to form the personality of an individual. According to Thomas and Chess, temperament has never been considered by itself, as the environment has never been considered by itself. Temperament has always been considered in relation to the individual's abilities and motives and external environmental stresses and experiences.

This theory of temperament and development of personality viewed temperament as being a behavioral style. The theorists, however, have not contended that the nine temperament traits they have identified have a genetic origin. In the New York Longitudinal study done by Thomas et al., results have not warranted the conclusion of a significant genetic component in the temperaments. Thomas and Chess (1977) contended that the origin of temperament must be sought in the factors of genetic, prenatal, and early postnatal parental influences (p. 153). It is their

contention that whatever the role of genetics may be in the origin of temperament, "environmental influences may very well accentuate, modify, or even change temperamental traits over time" (Thomas and Chess, 1977, p. 153). The lack of data establishing the inheritances or genetic origin of the nine temperament traits seriously weakened this theory of temperament.

Buss and Plomin's (1975) Temperament Theory of Personality Development has been the most recent theory concerned with temperament to appear. Buss and Plomin's interaction temperament model assumes that the total personality is comprised of two aspects: the temperament traits which accounted for stylistic, broad personality dispositions and specific acts or behaviors which were totally learned through developmental and experiential processes.

Buss and Plomin established five criteria which had to be met before a personality disposition was labeled a temperament trait. The most crucial criterion was inheritance which was also the central focus of the remaining four criteria. Buss and Plomin contended that "the most important criterion of temperament is inheritance, for this is what distinguishes temperament from other personality dispositions" (p. 9). A theory of temperament must establish the genetic origin of the traits identified as temperament. The criterion of inheritance correlated with Allport's definition of temperament as being dependent on "constitutional

make-up, and therefore largely hereditary in origin." The second criterion for temperament was stability during development. Buss and Plomin contended that if a trait was inherited it would show relative stability during development. If stability of temperament traits could not be observed, the environmental influences would be designated as the single determinant of one's personality. Buss and Plomin expected temperament traits to be flexible, and acknowledged some fluctuation of temperament because of environmental influences. The third criterion applied by Buss and Plomin was presence in adults. "If a personality disposition is inherited and shows at least moderate stability during childhood, it should be present in adults" (Buss and Plomin, 1975, p. 10). A temperamental disposition may have been present in a discernable behavioral style in the behavior of the individual as a child and as an adult. The fourth criterion was adaptiveness. Although the establishment of this criterion was done presumptuously, Buss and Plomin contended that traits which helped the organism to adapt to the environmental circumstances, which have been predominant for that species, would continue to be present. "Thus if a trait is inherited, this is presumptive evidence that it is adaptive" (Buss and Plomin, 1975, p. 10). The last criterion considered by Buss and Plomin was presence in animals. "If a tendency has sufficient adaptive value

to be passed on through the genes, it is likely to be present not only in man but in animals close to man" (Buss and Plomin, 1975, p. 11). Like adaptiveness, presence in animals was a rational criterion and, therefore, not as crucial as the first three criteria which can be supported by empirical evidence.

In a 1973 study done by Buss, Plomin, and Willerman, the authors applied three of the criteria to four traits they contended represented temperament. The three criteria used were adaptive value, presence early in life with some stability during childhood, and evidence that the particular disposition was inherited. On the basis of these three criteria, Buss et al. selected four temperament traits: emotionality, sociability, activity, and impulsivity. The selection of these four traits was partially predicated on previous studies conducted by Scarr (1969), Vandenberg (1967), and Mittler (1971).

Buss et al. (1973) used the twin method which generally has been used when studying the inheritance of personality dispositions. This method relied on the fact that monozygotic twins were identical genetically, whereas dizygotic (fraternal) twins would have only half their genes in common as do siblings born at different times. "If monozygotic twins are significantly more alike in a trait than dizygotic twins, it follows that the characteristic is an inherited component" (Buss et al., 1973, p. 515). This

inference was based on the assumption that families did not treat identical twins more alike than they did fraternal twins. Another consideration in twin studies using a self-report method of data collection has been the halo effect. The raters, usually the parents, knowing the twins to be identical, may have had a tendency to rate them as being more alike than the raters of dizygotic twins.

Buss et al. constructed a questionnaire, the EASI I, which consisted of twenty items, five for each temperament. Each item was answered on a scale of one (a little) to five (a lot). The items on the inventory were intercorrelated and factor analyzed for boys and girls seperately. The factor analysis showed that for each scale, at least three of the five items assigned to the scale a priori loaded highest on the appropriate factor; for some scales four or five items loaded appropriately. (Buss et al., 1973, p. 516) Seventy-eight pairs of monozygotic and 50 pairs of dizygotic twins were used for the study.

The results indicated that correlations were significantly higher for monozygotic twins than for dizygotic twins, and the difference was significant in all but one comparison. The exception was impulsivity for girls. Buss et al. concluded that there was no genetic component for impulsivity for girls as measured in this study. The remaining correlations for girls and boys argued strongly

for a genetic component, and there was a trend for inheritance in boys to be somewhat higher than in girls. Buss et al. attributed this to gender differences which varied from one temperament to the next. The results of this research strongly supported a genetic component in the three temperaments of emotionality, activity, and sociability, but the data also suggested there were environmental influences operating.

The 1973 study of Buss et al. was followed in 1974 by a study done by Plomin using the same four temperament traits. Plomin (1974) attempted to replicate and improve the method of assessment of the 1973 study with convergent evidence using family studies and an adult version of the EASI. Family studies indicated similarities between the personality of the parents and their young children. Plomin proposed this basic model (see Figure 4) which began with inherited personality dispositions and sought to trace their interaction with the environment during development.

A revised form of the EASI was used and both parents were asked to rate their twins. The results indicated that the findings of the 1973 study by Buss et al. were replicated. The family studies, using the adult version of the EASI, yielded evidence consistent with the hypothesis that the traits of emotionality, activity, sociability, and, to a lesser extent, impulsivity were inherited. There again was evidence to indicate that environmental factors were

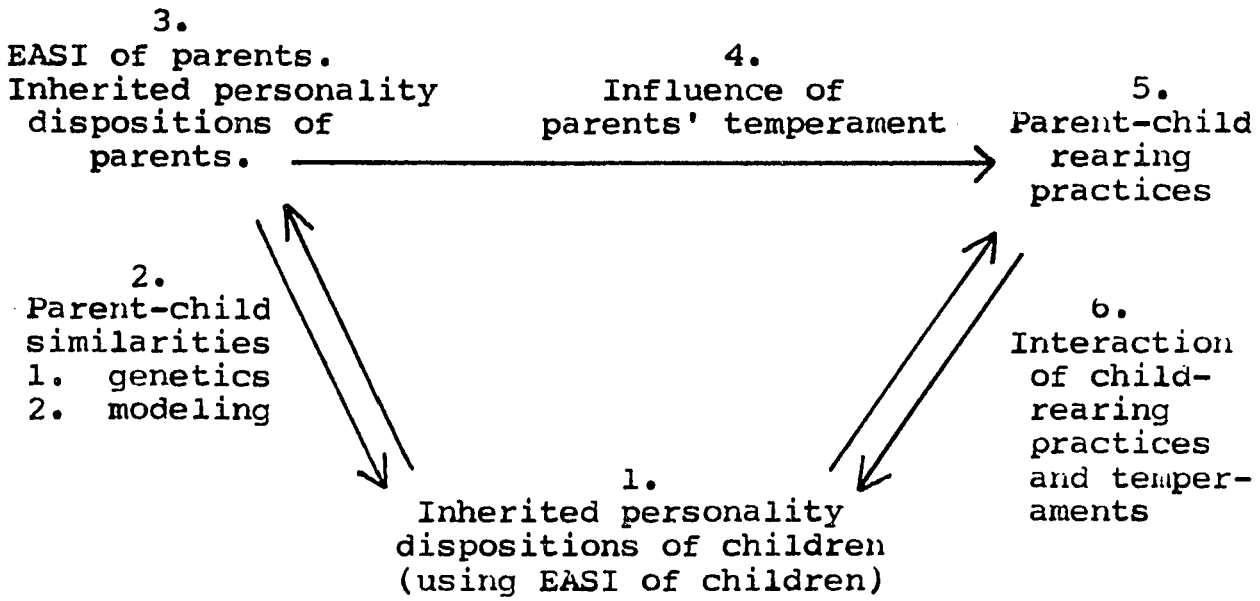


Figure 4. The interaction of temperament and environment.

(From A Temperament Theory of Personality Development: Parent Child Interaction by R. Plomin, 1974, p. 75)

also influential. Loehlin and Nichols (1976) have stated that 60% of a temperament trait was genetically controlled and 40% was attributable to environmental effects which operated almost randomly with respect to behavior related to temperament. "The major consistent, directional factors in personality are the genes, and the important environmental influences are highly variable situational inputs" (Loehlin and Nichols, 1976, p. 152).

Buss and Plomin (1975) have concluded that there are four traits which comprised temperament (See Table 3).

"Emotionality is equivalent to intensity of reaction" (Buss and Plomin, 1975, p. 7). Emotionality, according to Buss and Plomin, was best defined in terms of arousal, re-

Table 3. Buss and Plomin's Temperament Traits

(From A Temperament Theory of Personality Development by A. Buss & R. Plomin, 1975, p. 9)

Temperament	Extremes of the Dimension	Aspect of Behavior
Emotionality	emotional -- impassive	intensity
Activity	active -- lethargic	how much
Sociability	gregarious -- detached	how close to others; proximity seeking
Impulsivity	impulsive -- deliberate	quickness vs inhibition of response

activity, and excitability. A highly emotional person was easily aroused and reacted intensely. The individual possessed a low autonomic threshold for becoming disturbed, and so responded to situations with more intensity than a person who possessed a low emotionality temperament. The temperament of emotionality, according to Buss and Plomin's theory, was composed of the negative emotions of fear and anger.

The second trait identified by Buss and Plomin was activity. "Activity refers to total energy output" (Buss and Plomin, 1975, p. 7). Individuals with a high activity temperament were typically active, with vigor being reflected in most aspects of their behavior. Two subtraits which comprised the temperament of activity were vigor and tempo. Vigor referred to the type of activity selected by the

individual. Activities which involved vigorous activity would be chosen by an individual with a high activity temperament, whereas tempo referred to the pace at which the individual performed a behavior.

The third temperament trait was sociability. "Sociability consists mainly of affiliativeness - a strong desire to be with others" (Buss and Plomin, 1975, p. 7). Sociability was the only temperament which has a directional component. The sociable person sought others out and responded to them. Interaction with others was more rewarding than non social behavior.

The last temperament trait was impulsivity. "Impulsivity involves the tendency to respond quickly rather than inhibiting the response" (Buss and Plomin, 1975, p. 8). The temperament of impulsivity was linked to motivation because of the consequences one considered when deliberating about a course of action. Buss and Plomin contended that if there were no opposing tendencies, the impulse would be expressed in behavior. This delay of impulsive behavior referred to one of the subtraits of impulsivity, inhibitory control. Inhibitory control was concerned with the individual's delay of gratification, which referred to doing what was appropriate according to social standards rather than consenting to one's first impulse. Individuals with low inhibitory control would not be able to ward off

the impulse to do as they please, regardless of the consequences. A second subtrait of impulsivity was decision time. An impulsive person craved spontaneous action and felt thwarted when asked to plan or to put off a decision until alternative courses of action could be considered. The third subtrait of impulsivity was persistence. This component concerned the person who was not impulsive. Impulsive individuals responded with quickness and readily initiated new activities. Deliberate individuals were slower to take action and were more persistent once a behavior was begun. The characteristic of impatience led to the fourth subtrait, boredom or sensation seeking. An impulsive person, according to Buss and Plomin, seemed to suffer more from boredom. They contended that impulsive individuals would be no more bored than less impulsive individuals, but would have more trouble tolerating the boredom.

Buss and Plomin's temperament theory of personality development was an interactional model which was based on four assumptions. The first assumption was that a person started life with a small number of inherited dispositions. These innate tendencies, called temperaments, were broad and underlay a variety of personality traits. The second assumption was that these broad temperament traits accounted for many individual differences in personality because one's temperament affected all behavior regardless of the

situation. The third assumption was that the broad inherited tendencies were modifiable by the environment. "Presumably, what is inherited is a reaction range rather than a precise place on a personality dimension" (Buss and Plomin, 1975, p. 2). The initial range of any of the four temperaments was broad, but the range of the behavior was narrowed during development. The fourth assumption was that temperament also affected or structured the environment by setting the tone for others to respond, by initiating a behavioral style in a situation, and/or by reinforcement of responses given to the individual. "Temperaments may determine which environments are selected" (Buss & Plomin, 1975, p. 5).

Summary of the Conceptualization of Temperament

The presentation of the general concepts of selected theoretical approaches to temperament has been done with the idea of demonstrating similarities and differences in the conceptualization of temperament. The following table (Table 4) summarizes some of the major points of the various theories which were examined.

Table 4

Summary of the Major Points of Temperament

	Sheldon	Diamond	Guilford
Relation of temperament to personality	Temperament is whole personality	Temperament is determinant of all personality	Temperament is one modality of personality
Relation of temperament to environment	No environmental influences	Interactional approach	Interactional approach
Traits	viscertonia (sociableness) somatotonia (vigor) cerebrotonia (reserve)	impulsiveness affiliativeness aggressiveness fearfulness	general emotional social
Inheritance of temperament	Inherited because of body structure	Temperament is inherited	Temperament is inherited
Research supporting inheritance	Observational research of body type and temperament, no empirical data	Comparative studies of man and animals	No empirical research data

	Sheldon	Diamond	Guilford
Significance of the research	No statistical significance; correlation of temperament and body structure by induction	No statistical significance	No statistical significance

	Cattell	Eysenck
Relation of temperament to personality	Temperament is one of the three modalities of personality	Temperament is an aspect of the total personality which deals with affective behavior
Relation of temperament to environment	Interactional approach	Interactional approach
Traits	emotional stability placidity nervous tension serious vs happy-go-lucky expedient vs conscientious uncontrolled vs controlled reserved vs outgoing shy vs venturesome group dependent vs self-sufficient	extraversion/introversion sociability impulsivity ascendence optimism
Inheritance of temperament	Not completely inherited; nurture-nature ratio	Body structures (i.e. glands, neurons) are inherited

	Cattell	Eysenck
Research supporting inheritance	MAVA used to identify nature-nurture ratio	Statistical significance supporting partial hereditary influences in extraversio/introversion
Significance of the research	Significantly higher nature ratio for temperament traits	Hereditary influence greater for some subcomponents (i.e. sociability)

	Thomas, Chess, Birch	Buss and Plomin
Relation of temperament to personality	Temperament is the inherited factors of personality	Temperament is the inherited factors of personality
Relation of temperament to environment	Interactional approach	Interactional approach
Traits	activity level rhythmicity adaptability acceptance or withdrawal threshold of responsiveness intensity of reaction quality of mood distractability persistence	emotionality activity sociability impulsivity
Inheritance of temperament	Temperament is inherited	Temperament is inherited
Research supporting inheritance	Longitudinal studies; twin studies; observational studies	Twin studies; family studies; self-report and observational
Significance of research	No statistical support	Statistical significance for traits; impulsivity weak

Gender Differences in Temperament

Bardwick (1971) contended that some sex differences in the learning behavior and personalities of children appeared to have a genetic origin. Studies (Bridger & Birns, 1963; Dayton, Jones, Aiu, Rawson, Steele & Rose, 1965; Steinschneider, Lipton & Richmond, 1965; Kessen & Hershenson, 1963; Lewis, Kagan, & Kalafat, 1965; Stechler, 1965) have shown that there was an infant response style of approach or withdrawal to stimulation and differences in readiness to perceive and respond to stimuli. Bardwick felt that "while it is true that temperament, which includes the relative ease of arousal of innate or inherited patterns of response, is itself subject to modification by exerpience, behavioral differences in infants imply that constitutional primitive mechanisms exist which are precursors of later adaptive mechanisms" (p. 100).

Bayley (1964) reported behavioral consistencies in one child over a time span in the dimension of active, expressive, and extraverted, versus passive and introverted. He found girls to be more consistent than boys in this dimension. Murphy (1958) found the most consistent traits to be energy or activity level, the intensity of the affective response, the impulse or drive level.

Socialization processes may inhibit direct expression of inappropriate behaviors for both sexes. Bardmick believed that such cultural pressures might force the individual to repress or sublimate such behaviors, but these pressures would not be able to reverse the original genetic behavior

dispositions. "It (culture) can act on the qualities that a child already has, it cannot generate basic qualities that the child does not have" (Bardwick, 1971, p. 104). A girl who was physically active, impulsive, and extroverted would learn substitute activities or repression of these behaviors which would keep her from being labeled a deviant. For example, the girl who was physically active might achieve status through competitive athletics until later in adolescence when peer pressure demanded conformity to the norm for sex patterned behavior. She would have undergone anxious evaluations of herself unless she were able to direct her activities and aggression into other competitive situations.

Buss and Plomin (1975) studied the gender differences of their four temperament traits. Studies (Bronson, 1966; Buss & Plomin, 1975; Harrison, 1941) have shown that there was no difference in the activity levels of boys and girls. Other studies (Goodenough, 1930; Battle & Lacey, 1972; Walker, 1967) have shown that once boys passed a certain age (4 years) they exhibited a higher level of activity. Buss and Plomin (1975) contended that if activity were inherited, gender differences would be found as soon as activity levels could be measured after birth, and not at the age of four. Nor have these gender differences in activity. appeared for the first time around puberty, which meant they were not associated with hormonal changes. Buss and Plomin

concluded that "the timing of the first appearance of gender differences in activity argues against their (gender differences) being inherited" (p. 151).

Women have been generally thought to be more emotional than men. This general assumption, according to Buss and Plomin, was based on the cultural stereotypes in America. Bronson (1966, 1967), using interview data from the Berkeley Guidance Study showed that no difference existed in the emotions of fear and anxiety in males and females ages 5 to 16. However, other studies (Berry & Martin, 1957; Grossberg & Wilson, 1965; Walker, 1967), using an older population, have shown females to be more reactive and have more fears. In a study done by Buss and Durkee (1961), women became as angry as men, but women did not express their anger as frequently in aggression. Buss and Plomin (1975) have concluded that "men and women do not differ in arousability, but women are taught to inhibit expressions of anger, whereas men are allowed to ventilate their anger" (p. 166).

Women have also appeared to be more sociable than men, and the type of interaction women experienced were different. Buss and Plomin contended that of all the temperaments, sociability was most central to masculine and feminine role, because it involved social interaction. Research on preschool children indicated there were no gender differences

in sociability. (Hartup & Keller, 1960; Hatfield, Ferguson & Alpert, 1967; Berne, 1931; Green, 1933) Gender differences in sociability appeared in later childhood and became more stable in adolescence. Girls were found to be friendlier, have more interpersonal interests and needs, and seek more intimacy in friendships. (Tuddenbaum, 1952; Carlson, 1965; Winker, 1949; Dowan & Adelson, 1966; Adams, 1964) By adulthood, the pattern of females being more outwardly sociable was well-established through consistent social and cultural reinforcement (Exline, 1962, 1963; Sermat & Smyth, 1973; Bennett & Cohen, 1959; Spangler & Thomas, 1962; Buss et al. 1973)

Buss and Plomin (1975) have found no evidence for a gender difference in impulsivity. However, they felt that gender differences due to gender-role training were evident in the other three temperaments--at least in Americans. It was Buss and Plomin's contention, like that of Bardwick's, that both sexes inherited similar temperamental characteristics, but through socialization, gender differences in these traits were observable. The original behavior could only be partially submerged so as to fit the appropriate gender stereotype, but the original temperament continued to be demonstrated in the differences in behavioral style within either sex.

Temperament Research on Pre School and School Age Children

An extensive review of the research done on the

temperament of preschool and school-age children has yielded the identification of a number of different temperament traits. (Emmerick, 1964, 1966; Damarian & Cattell, 1968; Cattell & Dreger, 1974; Dignman, 1972; Schaie, 1966; Hundleby & Cattell, 1968) Although some of the identified traits may in fact be similar, no attempt has been made to equate the factors. There were no consistent findings in the identification of temperament traits of preschool and school-age children because of the variety of assessment tools and methods used for collecting the data.

Research conducted on the stability of the child's personality structure has also yielded mixed results. It was most often assumed that childhood was a time of change, and adulthood as the time of stability. There were those who concluded that external conditions may not always have such important effects as has been sometimes assumed (Caldwell, 1964; Stevenson, 1957; Yarrow & Yarrow, 1964). Research has also centered around the effects of a child's temperament on the behavior of others (Bell, 1968, 1971; Harper, 1971; Kohn, 1966; Osofsky, 1971; Waldrop & Bell, 1964, 1966). This research has found that a child's temperamental behavior influenced the behavior of others as much as others influenced him. Dreger (1977) contended that "the child's personality structure may remain the same because he influences the environment to treat him in a manner

that reinforces the same behavior; or the child may change because he requires the external world to reinforce changes in role behavior" (p. 425).

Results of Twin Studies Using Personality Inventories to Assess Temperament

The following table (See Table 5) was compiled by Vandenberg (1967) in an attempt to summarize the findings of twin studies. The studies were an attempt to get estimates of genetic effects on identical (monozygotic-MZ) and same sex fraternal (dizygotic-DZ) twins using personality inventories. Because of the diversity of assessment tools used, there would be difficulty in concluding the inheritance of any specific traits. Thompson and Wilde (1972) also noted a failure of consistent differences to emerge when the two sexes were compared.

This survey of twin studies employing personality inventories suggested moderate inheritance for traits in the personality domain, but inconsistencies were common. However, Canter (1973) felt there were several conclusions which could be reached. First, Canter felt that in order to study the genetic basis of personality there would have to be an examination of the specific components of the broader factors, such as extraversion. The factor of extraversion has subcomponents as sociability and impulsivity (Eysenck, 1953). While research on impulsivity has

Table 5

Summary of Findings From Twin Studies Using Personality Questionnaires

(From "Hereditary Factors in Normal Personality Traits" in J. Wortes (Ed.), Recent Advances in Biological Psychiatry, Vol. 7, New York: Plemun Price, 1967)

Author	Questionnaire	Personality Traits		
		MZ significantly more alike than DZ	MZ & DZ equally alike	DZ more alike than MZ
Canter, 1935	Bernreuter	self-sufficiency dominance self-confidence neuroticism	intro-version sociabi-ity	
Vandenberg 1962	Thurstone	active sociable vigorous impulsive	dominant stable reflect-ive	
Cattell, et al., 1955	HSPQ	neuroticism	dominance	
Vandenberg 1962		surgency	cyclothy-mia	impatient dominance
Gottesman 1963a		will control energetic con-formity cyclothymia vs schizophrenia	tender minded nervous tension	
Gottesman 1963b		social intro-version	paranoia	
Gottesman 1965	MMPI	depression	hysteria	
Reinikorr and Honey-man, 1967		psychasthenia psychonathic deviate	hypochon-driasis hypomania	
Wilde 1964	Amsterdam Biographical Questionnaire	psychoneurotic complaints psychosomatic complaints masculinity-femininity	introver-sion test-tak-ing attitude	

Table 5 cont.

Author	Questionnaire	Personality Traits		
		MZ significantly more alike than DZ	MZ & DZ equally alike	DZ ore alike than MZ
Vandenberg et al., 1966	Myers-Briggs	introversion		thinking-feeling judgement perception sensing
Vandenberg et al., 1966	Stern Activity Index factors	intellect closeness sensuousness self-assertion applied interests orderliness expressiveness-constraint egoism - diffidence educability	audacity motivation submissiveness friendliness	dependency needs
Vandenberg et al., 1966	Comrey	achievement need shyness compulsion religious attitude	dependence self-control empathy welfare state attitude punitive attitude neuroticism	hostility ascendance
Scarr 1966	Gough ACI, FEL Behavior List	need for affiliation friendliness social apprehension likeableness counseling readiness		

Table 5 cont.

Author	Questionnaire	Personality Traits		
		MZ significantly more alike than DZ	MZ & DZ equally alike	DZ more alike than MZ
Gottesman 1966	CPI	dominance sociability self-acceptance originality social presence good impression socialization psychological mindedness	status capacity sense of well-being tolerance communality responsible ach. via independence feminine quality flexible	achievement via conformance
Bruun et al., 1967	Special questionnaire and interview	sociability frequency of drinking average consumption	need ach. neuroticism aggressiveness lack of control	

shown significant differences between MZ and DZ twins, the correlations have generally tended to be low and nonsignificant. (Vandenberg et al., 1962; 1966) However, the correlations for differences between pairs for the trait of sociability have proven to be more significant. (Vandenberg, 1962, 1966; Scarr, 1966; Gottesman, 1966; Bruun et

al., 1967; Cattell et al., 1955) Canter (1973) concluded that the aspects or components of extraversion concerned with sociability were particularly subject to genetic influences, whereas the evidence for the subcomponent of impulsivity was less convincing.

The second conclusion reached by Canter (1973) was that the contributions of factors operating within the twin situation may have an effect on the similarities and differences found in twins. The effect of such factors as close contact and influences of parents may have weakened the study methodologically. Depending on the characteristic studied, the role of heredity might be overestimated or underestimated. Canter suggested that it would seem most logical to seek heritability estimates in twins who were living apart.

Buss and Plomin (1975) investigated the child-parent situation with regard to temperamental and environmental factors. They proposed that "temperaments predispose an individual to a limited range of a phenotype, but the interaction between temperament and the environment, especially during the critical developmental years, determines where the phenotype falls within this range" (Buss and Plomin, 1975, p. 209). They suggested that three factors operated to determine where the phenotype falls. The first was the effect of parental practices as modified by the child's temperament. The second was concerned with the

impact of the child's temperament on the parents. Finally, the modeling effects of the parents on the child were considered. Buss and Plomin represented this interaction in the following model (see Figure 5).

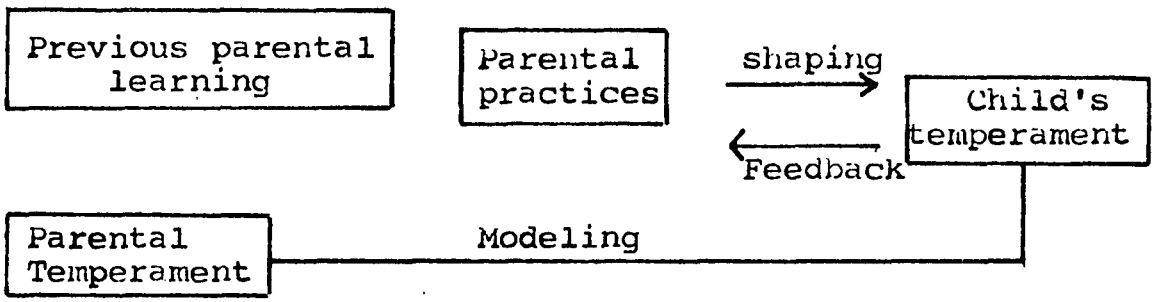


Figure 5. Parent-Child Interaction

(From A Temperament Theory of Personality Development by A. Buss & R. Plomin, 1975, p. 219. Copyright).

The child's temperament would elicit new parental behaviors and subsequent changes in child-rearing practices. Likewise, the effects of parental practices during child raising were especially influential. The child-rearing practices used by parents were a result of the parents' temperament traits. Plomin (1974) found that the sociability of the parents was positively related to the love dimension used in child-rearing practices. Activity was related to the control dimension of child-rearing practices. Vigorously active mothers exercised more control over their children. The last factor determining the phenotype was the child's modeling of the parent. Buss and Plomin (1975) contended that "a child will already be predisposed to behave

like a parent" because temperamental traits were inherited (p. 219).

Buss and Plomin have concluded through an analysis of their research on parent-child interaction that child-rearing practices have not had a strong influence in the development of temperament. Rather that the environment operated in a random fashion to affect the limits of the range of a phenotype. There was no doubt that parental input into the child's personality had an influence, but psychologists have yet to discover the relevant identifiable variables of parental influence.

Career Interests and Temperament

A recent article by Grotevant, Scarr, and Weinberg (1978) suggested that an individual could inherit "interest styles" and thus be attracted to some occupations more than others. In order to separate genetic factors from environmental influences on interest, 870 parents and children of natural and adoptive (biologically unrelated) families were studied. The results from this study suggested that "we don't inherit genes for certain careers, but there does seem to be a genetic influence on more broadly defined styles of interacting and coping with the world, such as sociability, activity level, and emotionality" (Grotevant et al, 1978, p. 88). The extent to which each trait was possessed has been said to predispose an individual to be more attracted

to certain activities and occupations. The implications of social modeling by the parents was examined. The results showed that there was a low correlation between the interests of adoptive parents and their genetically unrelated children. Nor did the social-learning hypothesis hold true for adopted siblings (biologically unrelated) reared in the same home, as adopted siblings showed very little interest similarities. Using a variety of interest and personality measures, a consistently moderate, but statistically significant, degree of similarity between biological parents and their children in interest and personality was found. Further support for the genetic hypothesis of interest similarity was found between siblings.

Grotevant et al. found that "biological sibling pairs were more similar to each other than they were to their parents" (p. 90). They attributed this finding to the fact that genes shared by siblings were generally the same as those they shared with their parents. They also concluded that siblings may have more similar interests because they sought out certain types of environments that were compatible with their genes. Although the adopted siblings were reared in the same home environment, they did not always have similar interests because they sought environments that matched their genetic predispositions.

The idea of interest compatibility with genes was proposed by Grotevant et al. and Buss and Plomin (1975).

Interest compatibility maintained that given a choice, most people would look for settings that provided a good match for their personalities. Buss and Plomin contended that through reinforcement individuals would make their own environment within certain limits. They contended that an individual could do this by setting the tone for social interaction; stimulating others or programing the environment; and rewarding or not rewarding the efforts of others (p. 4). But the environment and other individuals in the environment were acting in a reciprocal manner in precisely the same three ways. Grotevant et al. (1978) used the example that a very sociable person with a high level of activity would probably not be satisfied working at a solitary, sedentary occupation. Buss and Plomin (1975) contended that if a person who was sociable and active was placed in a solitary and sedentary occupation the individual would experience strain from existing in a fashion which was alien to him. (p. 5) Both Buss and Plomin and Grotevant et al. realized that styles of interacting, such as sociability and activity, can be influenced by the environment. It was the contention of Buss and Plomin that the environment would only modify a temperament within its limits and even intense pressure cannot radically alter a temperamental disposition.

Summary

To say that some behaviors were controlled solely through genes which were inherited would be erroneous. Researchers (Buss & Plomin, 1975; Loehlin & Nichols, 1977; Eysenck, 1967; Thomas & Chess, 1977; Cattell, 1966) have determined that the relative importance of heredity and environment and the interaction between the two were experimental problems which could not be solved on any *a priori* basis. Behavior was too complex to be exclusively a product of the environment or of hereditary. Eysenck (1956) and Loehlin and Nichols (1977) have stated that specific aspects of behavior (i.e. sociability) possessed a 60:40 ratio of hereditary to environmental influences.

A survey of the research dealing with the genetic contribution of certain behaviors has yielded conflicting results. The conflicting results could have been due to two reasons. The first reason dealt with methodological problems. The use of personality inventories which were not designed to distinguish between hereditary and environmental influences have been used. For example, the California Personality Inventory (CPI) has been used in twin studies by Gottesman (1966), Plomin et al. (1976), and Nichols (1965) to determine the heritability of the 18 traits. Only 82 of the 480 items on the inventory were genetic items. The

CPI was constructed without any consideration given to the genetic contribution to the particular trait. Another methodological problem which has contributed to the instability of the results was the possible rater bias found in twin studies. When parental ratings and evaluations of twins were involved, there was present the possibility of bias on the part of the parents to rate the twins too much alike or too different.

The second major problem which has contributed to the inconsistencies in the findings was the randomness with which environmental influences operated in determining behavior. The environmental influences an individual experienced during development were so varied that there was no way to know the exact affected personality in sufficiently complex, contingent, and subtle ways so that any attempt to analyze environmental contributions showed a random variance. Loehlin and Nichols (1976) contended that "The major consistent directional factors in personality were the genes, and that the important environmental influences were highly variable situational inputs" (p. 189).

In a summary of twin studies by Scarr (1969), the trait of sociability as it related to introversion/extraversion has been found to be highly heritable. Sociability was defined as a basic disposition of responsiveness to the environment. Longitudinal studies (Kagan & Moss, 1972; Schaefer &

Bayley, 1963; McKee & Turner, 1961; Tuddenbaum, 1959) have shown sociability to be stable from infancy through adulthood. Twin studies (Scarr, 1966; Eysenck, 1956; Freedman & Keller, 1963; Gottesman, 1963, 1966; Bruun et al. 1966; Loehlin, 1976; Vandenberg, 1967; Horn et al., 1976) have shown sociability to have a moderate-to-high hereditary index.

Scarr's study, although substantiating the genetic contribution of sociability, did not deal with the genetic origin of other traits. A review of the traits identified by various ehtorists in this review and in twin studies has identified other traits which have been consistently shown to have a substantial genetic contribution. Two other traits, activity level and emotional control, have been consistently found to have a moderate-to-high genetic contribution (Buss & Plomin, 1975; Thomas & Chess, 1977; Cattell, 1966; Vandenberg, 1962; Guilford, 1959). Buss and Plomin's (1975) identification of impulsivity as one of the four temperament traits has been shown to have questionable genetic origin. They have suggested that impulsivity be combined with sociability.

Although the identification of specific traits with a moderate-to-high genetic contribution has been inconsistent, there has been agreement that temperament traits have been concerned with behaviors which were representative of

responsiveness to the environment (Scarr, 1969). This responsiveness was a temperamental style of behavior, produced by the genotype that predisposed the individual to react in a certain style to environmental stimulation.

The manner in which development proceeded in a given individual was determined by particular genes and by particular environments, and by the interaction of both. Buss and Plomin (1975) suggested that what was inherited was a tendency to occupy one part of the dimension of one of the temperament traits. They illustrated the development and modification of temperament in the following figure. (See Figure 6) The initial range of any individual's temperament would be somewhat broad, but because of environmental influences, such as gender-role training, the original temperament would be narrowed. "The initial inherited potential was molded by life experiences that select the part of the range most appropriate to family, subculture, peer, etc." (Buss & Plomin, 1975, p. 236). Although the origin of the temperament was inheritance, its final outcome as projected in behavioral style, depended on modification by the environment.

Buss and Plomin contended that the child going through the developmental processes was not merely a passive recipient of the environmental influences. The individual, through all stages of development, was an "initiator,

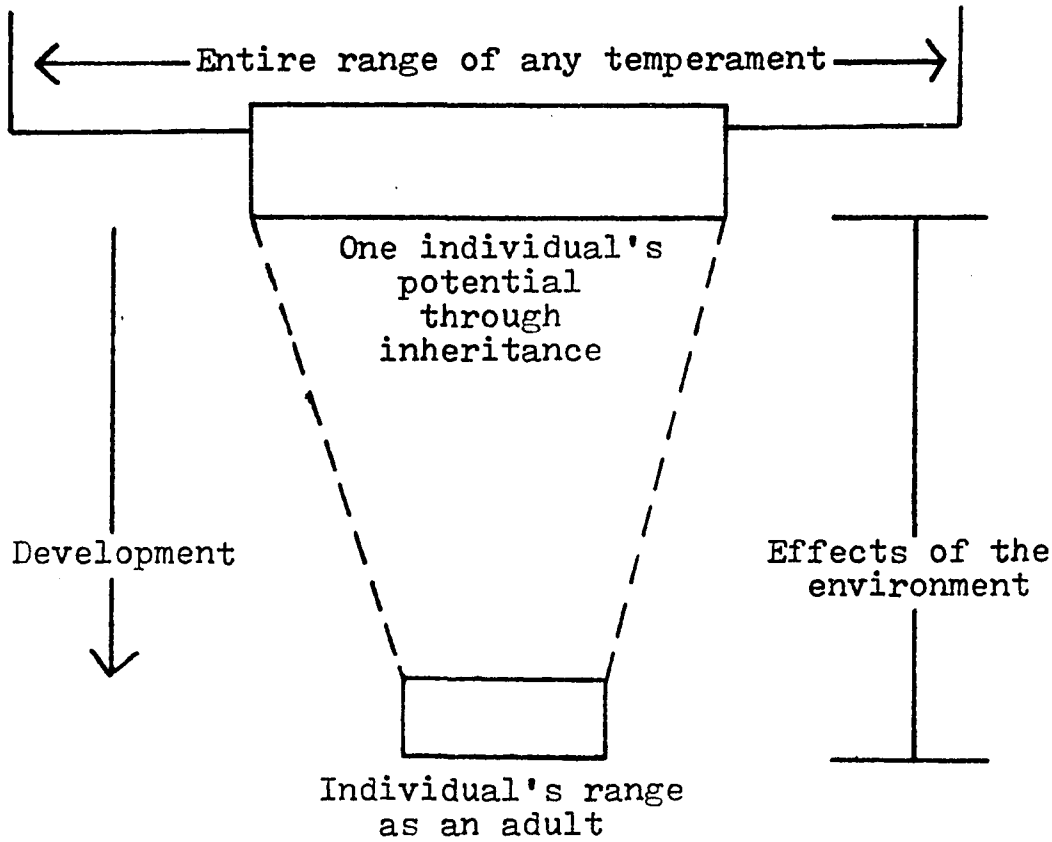


Figure 6. Development and modification of temperament. (From A Temperament Theory of Personality Development by A. Buss and R. Plomin, 1975, 237)

reinforcer, and a responder" to the influence of the environment.

Personality Research in Sport Psychology

Introduction

In the psychological study of personality, there have been four models which have been prevalent in the theorizing of personality. The four models have been distinguish-

able according to the sources which determine behavior. The first two models were: (1) the trait model, which emphasized stable dispositions; and (2) the psychodynamic model, which assumed a basic inner personality score. These two models regarded personal factors, which were the sole causes of behavior, as being latent and stable dispositions. The third and fourth models were intermediary and antithesis positions, respectively, of the first two models. The third model, interactionism, attributed behavioral differences to the ongoing interaction of personal dispositions and of situational variables. The interaction model recognized that significant features of the situation influence the perceptions of the situation. (Endler and Magnusson, 1976) The fourth model, situationism, regarded situational factors as the main determinants of behavior. According to the situationism model, behavior was extremely changeable because the varying aspects of the situation were the determinants of behavior.

Another model, also an interactional model, could be proposed. An interaction temperament model assumes that an individual inherits designated traits in addition to acquiring, through learning, other aspects of one's personality. Whereas the specific situation has influence on the behavior exhibited, inherited traits, which are said to be one's behavioral style rather than specific acts, remained

relatively stable across all situations. In this respect, only the individual's behavioral style is being measured and not specific behaviors. The main determinants of behavior are, therefore, the inherited traits and the style in which these traits are exhibited in a given situation.

These five models of personality, when placed on a continuum will show the diversity of personality theory with respect to the determinants or sources of behavior (see Figure 7).

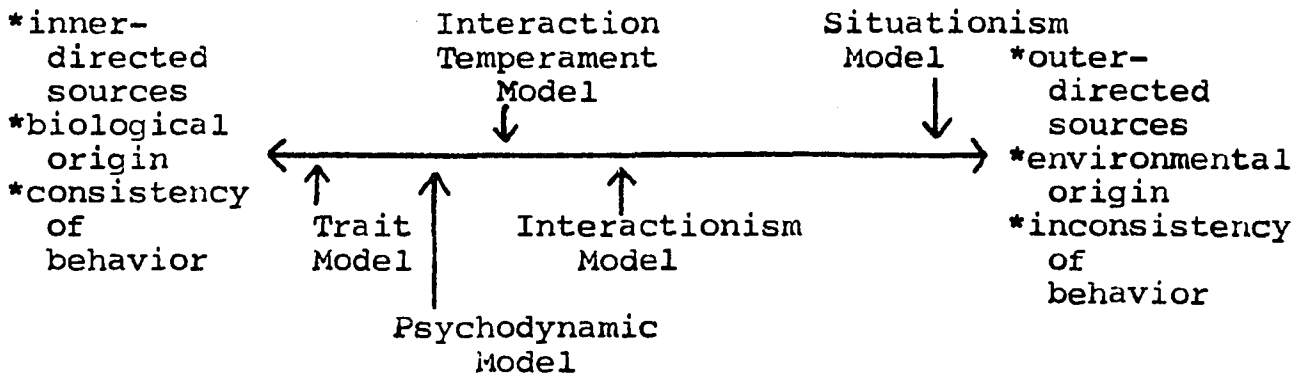


Figure 7. Models of personality theories.

Sport Personology

Sport psychologists' use of personality theory and instruments originated because of attempts to describe, explain, and predict behavior in a sport situation. Alderman (1974) contended that the major thrust of research in sport personology has been concerned with the personality of the

athlete and has been aimed at the identification of athlete's personality traits.

Martens (1975) identified two goals or purposes of sport personality. The first was to determine the role sport plays in personality development of change. The second was to determine the influence of personality on sport behavior and performance. Under the first goal were studies which have attempted to identify unique characteristics of the "superior athlete". It was Kroll's (1970) contention that, based on little objective evidence, it had become a belief that "Personality is rather universally proclaimed an important and essential prerequisite for successful athletic performance" (p. 350). Support of this position was based upon the idea that personality could be the main contributing factor for success when two athletes of equal physical ability and skill are compared. If the personality attributes of a successful athlete could be found, Kroll felt there were two advantages that could be gained. First, there could be a screening process through the use of personality techniques which would lead to a procedure by which aspiring athletes could be evaluated for outstanding characteristics. Secondly, if the prerequisites for success in terms of personality attributes were established, training procedures could be modified to promote optimum cultivation of these attributes. The second goal

of Martens (1976) included such areas of research as comparison of the personality traits of various sport groups (i.e., individual vs. team) and subclassifications of positions within a sport (i.e., linebackers in football). The research in the two areas identified by Martens would be done with the idea of developing screening techniques for potential athletes or to channel a perspective athlete to a sport for which he or she might be best suited.

Trends in Sport Personology Research

A number of reviews have appeared in the physical education literature summarizing current research concerned with the relationship of personality to the athlete. (Cofer & Johnson, 1960; Cooper, 1969; Husman, 1969; Kane, 1964; Kroll, 1970; Layman, 1972; Morgan, 1969; Singer, 1967; Smith, 1970) Within the last twenty years considerable research attention has been directed toward an examination of the relationship of personality dynamics to sport.

There were several broad areas which have been investigated. One prevalent area of investigation has been the identification of the personality traits of a variety of sport participants, both team and individual sports. Results of some of the studies by Kane and Callaghan (1965), Lakie (1962), Johnson (1972), Gold (1955), Kroll and Carlson (1967), Booth (1958), Bosco (1962), Flanagan (1951), Malumphy (1968), Knapp (1965), and Peterson et al. (1967)

were for the most part, contradictory and inconclusive. A partial reason for such contradictory results has been attributed to two factors. The first was that a variety of instruments were used. Although the majority of instruments used measured stable traits, each instrument measured traits which were not always comparable across instruments. The second factor which has caused contradictory results has been the differing skill levels and the variance in the athlete populations that were used. One of the few replicated facts has been that team sport participants were more extraverted and sociable than individual sport participants (Ogilvie & Tutko, 1965; Kane, 1964). Kane (1964) felt the following conclusions could be made from the current literature on the personality of various sport groups: (1) outstanding athletic ability was associated with the personality factors supporting stable extraversion; (2) successful participants in team and individual sports were associated with different personality type structure; and (3) women athletes in general exhibited less personality variance than men.

Another area in sport personology which has been researched was the personality of the athlete vs. the non-athlete. Studies by Lakie (1964), Slusher (1964), Kerome (1969), Behrman (1967), Merriman (1960), Schendel (1965), and Seymour (1956) have compared the personality traits

of various athletic populations to non-participants. Although not completely conclusive, the results in the area of athlete vs. nonathlete were somewhat more coherent. Cooper's (1969) review of these studies suggested that the athlete as compared to the nonathlete was: (1) more outgoing and socially confident; (2) more socially dominant and leading; (3) less anxious; (4) less compulsive; (5) more emotionally stable; and (6) more tolerant of physical pain.

Research studies (Ogilvie et al., 1966; Ogilvie & Tutko, 1965; Kane, 1969; Johnson et al., 1954) which have attempted to identify the personality traits of champion or superior athletes have isolated several characteristics. According to Ogilvie and Tutko, the male superior athlete: (1) was more extroverted; (2) had a greater need for achievement, dominance, and aggression; (3) had a greater tendency for abstract reasoning; (4) was more venturesome, bold, tough-minded, and self-assured; (5) had low anxiety; and (6) had high leadership ability.

The research concerning the coach has been limited and has dealt mainly with the male coach. Tutko et al., 1971; Hendry, 1968, 1969, 1972; Ogilvie, 1965; Ogilvie & Tutko, 1970; Percival, 1971; Sage, 1975; Loy, 1968; Buhrer, 1973; Brown, 1973). Sage (1975) contended "that most of the popular notions about the coach's personality have come from essays and impressionistic observations" (p. 409)

of what the coach was like rather than from the few psychological studies which have been done. Of the few studies which have been done, "the majority are small, unrepresentative samples (such as a group of coaches enrolled in the investigator's class), and in some cases the validity of the assessment instrument has not been fully confirmed" (Sage, 1975, p. 409).

The trait model has been extensively used to assess the personality of the individual involved in sport. A survey of physical education research on personality done by Smith (1970) revealed that the overwhelming majority of researchers used profile inventories, thereby consciously or unconsciously supporting the trait theory of personality" (p. 77). Smith found that the Cattell 16 PF was used in the vast majority of these studies. Ryan (1969) attributed the extensive use of the trait approach to the "shotgun" variety of research which has been conducted. "The investigator grabs the nearest and most convenient personality test, and the closest sport group, and with little or no theoretical basis for their selection fires into the air to see what they can bring down" (Ryan, 1969, p. 99).

The results of the studies using the trait approach have been contradictory and confusing. Researchers expecting to identify consistent traits across athletes in the same sport have found that such a comparison has not been

possible. Fisher (1976) contended that "with the possible exception of intelligence, highly generalized behavioral consistencies have not been demonstrated, and the concept of personality traits as broad response predispositions is thus untenable" (p. 411).

Problems in Personality Research

Husman's (1969) statement". . . since we cannot agree or do not really know what personality is, how do we establish scientific instruments for assessing something we do not fully understand" (p. 67) described the problem many investigators were faced with when attempting to measure personality. Fiske (1974) contended that the "conventional science of personality is close to its limits" (p. 395). There has been a lack of consensus among theory, terminology, and assessment in psychology. Such a consensus was needed to unify the field so that the research would be more conclusive.

Assessment of personality has never been as exacting as assessment in a physical science. Each personality theory involved a set of constructs which were defined by the theorist's set of propositions. These propositions described the behavioral characteristics of the constructs. Theorists have ascribed their own set of propositions to each construct resulting in a lack of universal understanding. Fiske (1974) contributed many of the problems in

personality assessment to the "reliance on words". Even when the investigators used the same label for a concept, their definitions were not identical and their operational procedures yielded results which only approximated each other. The term personality has many flexible meanings. The uncertainty as to how personality was formed, how it worked, and the components and their relationships further complicated the study of personality. Among assessment methods there has been found a diversity of opinions on the part of psychologists. According to Husman (1969), "Theoretically, paper-and-pencil and projective tests tap conscious and unconscious aspects of personality respectively; therefore, we would not expect the behavior measured by these two types of instruments to be alike" (p. 57).

Fiske (1974) listed several problems in personality measurement. The first problem he identified was the inadequacy of definitions. The variables of personality were not as "intuitively obvious" nor tied to "specific operations" as those in other sciences. Many of the variables related to personality were words from everyday usage, leaving the meanings too broad and vague. The same response would have different interpretations. Other theorists have taken the opposite approach and "coin" a word to describe specific variables. Fiske has identified two consequences from inadequacy of definition which plague measurement. First, a

personality variable broadly labeled and defined was not likely to be measured by any single technique because of the diversity of behaviors attributable to the label. Second, the investigator would not be able to determine in any systematic manner the degree to which the measurement operations comprehended the variable.

The second problem Fiske identified was the "probabilistic nature of response tendencies". The dispositions which comprise personality were tendencies to respond, not all-or-none, present-or-absent matters. Two persons would have the same dispositions, and even the same strength of the disposition, but the responses given by each individual would manifest themselves differently because of the differences in the strengths of one or more other variables. Also contributing to these differences were the situational variables and the environmental modifications which would cause the person to perceive the situation differently from anyone else. Fiske contended that to cope with this problem the investigator would have to "look for sets of stimuli (items) and for testing conditions that will yield scores of appropriate stability" (p. 461).

A third problem identified by Fiske was "the specificity of personality measurements". The agreement between tests purporting to measure the same concepts or variables was usually well below .50 and thus unsatisfactory. This

lack of consensus was attributable to method variance. Several sources of method variance included the person providing the data, the type of item content, format of the items, the instructions and setting, and the meaning of the situation for the subject. These sources of variance have made it certain that "no one instrument can be expected to provide adequate assessments of a variable unless that variable is otherwise defined very narrowly" (Fiske, 1963, p. 463). Fiske contended that when an investigator was able to reach similar findings using different ways of measuring the variable, then the core of the concept would be understood and they would not be interpreting systematic method variance as trait variance.

The fourth problem was that of "distortion resulting from individuality". Individual interpretation of test situations and items was another source of distortion of measurement. The next problem concerned the "particular situation in which personality is measured". The situations or conditions for personality testing were often ambiguous with respect to what was expected. Adelson (1969) showed that studies delineating the effects of social desirability and acquiescence have suggested that such response sets could have equivocal and pervasive effects upon the desired scores from many personality inventories.

The last problem involved the question of "representativeness". The situations and implications presented in

the questionnaire items might not have been applicable and meaningful to the particular individual. Because most questionnaires were forced-choice responses, the individual had to give an answer which might have been unrepresentative of his actual behavior.

The problems which have plagued the measurement of personality in the field of psychology have also extended to the research involving personality assessment of athletes. But sport personologists have created additional problems.

The abundance of personality theories and available assessment tools have confounded the selection of an appropriate theory and tool. The technique of assessment was often chosen because it was convenient and easily analyzed. Selection of an instrument must be based on the theoretical conceptualization the author of the instrument had in mind. Berlin (1970) contended that a "Theory provides a device for systematically ordering the obtained data and directing how it might be interpreted. . ." (p. 57).

Another problem concerned with selection of an instrument for assessment of sport personality was that of using a psychiatric test, such as the Minnesota Multiphasic Personality Inventory (MMPI), rather than a test which assessed the "normal" personality. According to Kroll (1970) "An inventory such as the MMPI was developed for identification of psychiatric populations and its empirically constructed clinical scales were poorly suited to dimensional analysis

of personality structure in normals" (p. 354).

Martens (1975) has identified three methodological problems associated with sport personality measurement. The first was the inability to clearly operationalize important variables. The defining of an "athlete" or the determination of a "superior" athlete were examples. The second problem was concerned with poor sampling procedures. Martens identified the most common problem as being "the sampling of many athletes from one or two teams and then generalizing across all teams" (p. 423). The third problem was that of inappropriate statistical procedures. He identified the two most common errors as the use of multiple "t" tests when analysis of variance or discriminant function analysis was needed and the use of univariate instead of multivariate analysis.

Interpretive errors have also caused sport personality research to seem significant when often no significance existed. One such problem was the casual relationship given to trait labels.

New Directions

Researchers concerned with the area of personality in sport concluded that new directions must be taken. Rushall (1972) felt that sports personality research has a long way to go and that "new directions, utilizing new techniques and designs, adapting theoretically sound bases

for each work, and avoiding all the errors of the past" (p. 23) was needed.

One of the biggest thrusts for a new direction has been away from the use of the trait approach, which considered behavior to be stable and unchanging across situations, toward an interactional approach which proposed that the study of personality accounts for human behavior in terms of both the person and the situation in which the behavior occurred. Martens (1976) rejected the use of both the trait and situational approaches. He felt that situationism was an overreaction to trait psychology and the trait approach ignored the effects of the environment. Whereas the interactional approach considered situation and person variables as codeterminants of behavior without specifying either as primary or subsidiary. Hunt (1965) noted that in personality-performance studies, the majority of explained variance was not attributable to either the specific personality traits or to situational factors, but rather to their interaction.

The initial interest in the personality of the individual in sport centered around the attempt to describe, explain, and predict behavior. The attempt to predict behavior, according to some researchers (Fisher, 1976; Kane, 1977) will never be realized. Fisher (1976) contended that sport personology was almost entirely a descriptive dis-

cipline. Kane (1973) felt that the sport personality information at best allowed us to describe and not predict but if "we could explain 20% of the variance in sports performance by virtue of personal information, then I think that the effort would be well worthwhile--and as a matter of fact, I think this is about the level we can expect" (p. 407). There are too many contributing factors to behavior in sports to believe that personality can give a complete predictability index.

Summary

The concern of sport psychologists with the personality of the individual involved in sport was fostered by a desire to identify the variance in behavior accounted for by the individual's personality. The researcher's attempts to describe, explain, and predict behavior in a sport setting have been aimed mainly at the personality of the athlete.

The results of the studies have, however, often shown contradictory and confusing results. Several problems have been identified which were assumed to be caused by theoretical, methodological, and interpretive errors. One of the most often identified problems has dealt with the use of the trait model for studying the personality of the athlete. The trait model has been criticized because this approach has been insensitive to the situational factors which influence one's behavior.

New directions have been suggested for researchers to follow. The interactionism model which considers the interaction of person and situation variables has been proposed as the approach sport personology should follow. However, sport psychologists who suggested that the interactionism model should be used also contended that the research on the personality of the individual involved in sport will never be able to predict behavior. They concluded that the most the identification of personality traits can hope to accomplish is the description and explanation of behavior in sport.

Personality of the Coach

Introduction

Cratty (1973) contended that nowhere in sport psychology has more information been presently needed than in the area of the coach's personality. A great deal of research has been generated in an attempt to describe, explain, and predict the behavior of the athlete with the hope of increasing the athlete's performance. Most athletes, at one time or another, have been under the guidance of a coach whose purpose has also been to help athletes reach their performance potential. Although much importance has been attached to the role of good coaching, there has not been a great deal of research dealing with the personality of the coach.

Sage (1975) contended that "while there have been

numerous essays and impressionistic observations of what coaches are like, there have been fewer psychological studies concerned with the coaches' personality structure" (p. 409). The few studies which have been done have used small, unrepresentative samples dealing mostly with the male coach. The findings of the research on the personality of the coach have, in general, been inconsistent and not generalizable to any particular population of coaches.

Although there has been no empirical evidence supporting a stereotype of the coach, Svoboda and Stansky (1967) have identified three general types of coaches--the authoritarian, the democratic coach, and the advisor. Authoritarian coaches have focused on discipline and perceived their roles as dictators, and must, therefore, accept the blame if the team performance was poor. Democratic coaches have served as intimate friends, offering encouragement and inspiring self-discipline. Advisor-type coaches gave advice and help, but frequently encouraged an excess of dependent behavior on the part of the athletes. The results of Svoboda and Stransky's study have indicated that the more successful coaches have "adapted a democratic approach and yet have behaved in a flexible manner, exerting authority when needed and extending advice when it is appropriate to the athlete who may need it" (p. 13).

Hendry and Whiting (1968) proposed a closed conceptual system where the admired figure, the coach served as a

model for those aspiring to be coaches who could identify with and imitate him, thereby perpetuating the system. The coaches in this study, a large number under the age of 40, indicated that they had been successful competitors themselves. "The mechanisms of social control are a rigid reinforcement by sanctions of achievement and success so that the outstanding performers perpetuate the system" (Hendry, 1972b, p. 40). Although conclusive evidence is lacking, Singer (1972) hypothesized that some athletes in turn become coaches and, therefore, the coaches in various sports will mirror to some extent the characteristics of the athletes in that sport.

Research on the Personality of the Male Coach

Ogilvie and Tutko (1966) measured the personality traits seen in observable, everyday moods and behaviors and found that a sample of top American coaches were intelligent but inflexible, highly organized, conscientious, emotionally stable, sociable, dominant, trusting, could feely express aggression, yet had a low interest in the dependency needs of others. The top American coaches used in Ogilvie and Tutko's study were 64 team sport coaches. They concluded that the profiles of the coaches were almost identical to that of the outstanding athletes they have researched.

Ogilvie and Tutko (1968) asked a group of 132 high school coaches to make a personal projection on their

personality profile. The sample of coaches perceived themselves as higher achievers, more autonomous, more dominant, more changeable, more aggressive, more affiliative than the actual test scores indicated. The results showed that the coaches scored high on traits which determine getting ahead and succeeding, but which do not necessitate personal involvement (i.e., dominance, achievement, aggressiveness, inflexibility). They scored low on traits which contribute to being sensitive and support a close interpersonal relationship (i.e., affiliative, succorant).

A study by Hendry (1968) measured the source traits of swimming coaches. He found these coaches to be bright, driving, aggressive individuals, but also anxious and insecure, especially the older coach.

Hendry (1969) conducted a study to compare the subject's perceptions of the "ideal" coach as compared with the personality traits of highly successful coaches. Using Cattell's 16 PF traits, he had coaches subjectively construct the "ideal" coaches' personality. The results showed that the profiles of the ideal and the successful coach were significantly different. Hendry concluded that "the ideal personality for coaches exists in the minds of both coaches and athletes, but it is probably that success in coaching is highly dependent upon the knowledge the coach brings to his sport and team" (p. 304).

Hendry (1972a, 1974) compared the personalities of 57 male coaches and 6 female coaches to the personalities of 48 male physical educators using the Dynamic Personality Inventory (D.P.I). The group of male coaches was broken down into criterion groups of team sports, combat sports, individual sports, and racket sports. The results yielded several significant findings. These differences were as follows (Hendry, 1974, p. 44):

1. similarity in high authoritarianism of coaches and teachers was found;

2. similarity of coaches and teachers as compared to the general population in their enjoyment of admiration and organizational abilities was found;

3. physical education teachers were impulsive, aggressive, and self-assertive;

4. combat sport coaches lacked aggression and drive;

5. team sport coaches also lacked aggression and drive, but were fairly sociable, highly conscientious, exhuberant, and inflexible;

6. individual sport coaches were conventional and inflexible;

7. racket sport coaches shared the most commonalities with the physical educators, but revealed mistrust and low achievement drive;

8. the more individualized the sport, the greater the psychological difference from team and combat sport coaches;

9. the female coaches were found to be extremely self-contained, conventional, and rather coldly controlled.

Hendry concluded that "while certain coaches were rather like teachers and some teachers clustered within the nucleus of coaches' personality formation, the areas of concentration suggested two separate, but clearly defined clusters where over 60% of the coaches and 60% of the teachers lay within the boundaries of their respective personality clusterings" (p. 48). The most noticeable trait difference appeared in the teachers' greater overt sociability and high aspirations, whereas coaches were more controlled individuals with restricted ideas but with extremely high organizational abilities.

From the findings, Hendry hypothesized that because of the teachers' higher level of sociability, they may be better suited to function in large group situations. The coaches' control, calmness, and ability to hide emotions. . .may be more helpful to small elitest groups of athletes.

Research on the Personality of the Female Coach

The previous section dealt with the personality of the male coach. The research on the female coach has been sparse and unrepresentative of the female coach as a unique entity. A number of studies on the personality of the woman coach have tended to combine the teacher/coach on all levels and across all sports.

Cratty (1973), in reviewing research on personality, found little evidence about the female coach which was based

on psychological testing. Loy (1967) reported that women coaches tended to disply intellectual and emotional behavior, including tough-mindedness, similar to that of the male coach. Neal (1969) has recommended that prerequisites of the woman coach should be the same as those required of men (i.e., emotional stability, ability to handle people well, and knowledge of their particular sport).

Tutko, Elliot and Berendson (1971) tested over 194 high school and college women physical educators and coaches using the Jackson Personality Inventory. They found that women in athletics, as compared to the average college woman, showed a "greater breadth of interest, have more energy, are more innovative, are better organized, assume responsibility more readily, take fewer risks, and, in fact, avoid those behaviors involving an element of danger, and have a greater confidence in themselves" (Neal and Tutko, 1975, p. 134). There were limiting factors concerned with the results which made the study rather nebulous. The physical educators were not separated from the coaches, nor were they separated according to high school and college occupations.

Buhrer (1973) conducted a study on the perceptions of woman coach by women athletes and women coaches. The perceptions by the women athletes of a woman coach showed no extreme meanings on the semantic differential scale.

When the women coaches were asked how they perceived themselves, the results again showed a neutral or undifferentiated meaning for the concept of woman coach. These results demonstrated a lack of clarity for the meaning of the concept of woman coach as held by both women coaches and women athletes. The neutral responses indicated that the perceptions of these subjects were generalized rather than connotative of a distinctive meaning. Buhrer suggested that the concept of woman coach might lack clarity because of the changing roles of women in the area of athletics and in society (p. 80).

Brown (1973), using Cattell's 16 PF, compared women educators, physical educators, and women coaches. The results indicated that women coaches, as compared to women educators, were less outgoing, more intelligent, more emotionally stable, less sensitive, more confident, and more exacting. Women coaches, as compared to physical educators who were noncoaches, were less venturesome, less imaginitive, more enthusiastic, less confident, and less outgoing.

The review of studies relating to the personality of the woman coach indicated that the area has been greatly ignored. There were no consistent findings which could be generalized to a particular population of women coaches. Furthermore, the nature of the woman coach seemed to be speculative to researchers and the woman coach, herself, as

indicated in Buhrer's study.

Neal and Tutko (1975) have projected some possible explanations for the uncertainty of the concept of the woman coach. The impression a woman coach has of herself may not be similar to the one others have of her. A more serious consideration for the woman involved in coaching was that females may "wear masks". The female coach, as many females in any traditionally masculine achievement setting, has had to contend with the role expectations of a female. The female coach has often portrayed a different role to her athletes, to her colleagues, to male coaches, and to the outside world. "At times she may find herself wondering which of these roles is, in fact, her" (Neal & Tutko, 1975, p. 137).

Research on the Female in Professional Roles

If the traditional attitudes of coaching being a male-oriented achievement situation still exists, there are implications with regard to the female's psychological make-up and her ability to coach which must be considered. The female, as a coach in a traditionally masculine competitive achievement situation, may be faced with an additional burden besides winning.

Horner's (1968) pioneering study on the motive of females to avoid success, concluded that in a competitive situation, females showed a greater motive to avoid success

than males. A second conclusion reached by Horner indicated that a female who had a high need to achieve and was capable of achieving in a particular situation experienced a greater motive to avoid success and experienced more anxiety than a female who did not have a high need to achieve or the capabilities to succeed. Horner's results seemed plausible and intuitively sound at the time. Studies by Sorrentino and Short (1974), Hoffman (1974), Peplau (1976), and Levine and Crumrine (1975) attempted to replicate Horner's findings. None of these studies totally supported Horner's results. In the studies which attempted to replicate Horner's hypothesis about the motive to avoid success, males and females showed an equitable fear of success. Zuckerman and Wheeler (1975) have questioned Horner's conceptualization of fear of success as being a stable, latent disposition acquired early in life. There seemed, then, to be little empirical support for Horner's theory.

Researchers, because of the inability to replicate and accept Horner's theory, have investigated the female achievement motive from different approaches. Some of these studies have found significant reasons for the female's achievement motive.

Peplau (1976) identified Horner's failure to determine the sex-role attitudes of the female subjects as contributing to the lack of replicable results. Peplau contended

that a female with traditional sex-role attitudes performed with less anxiety in a noncompetitive situation or a team competition where her individual score would not be known. Whereas a female with liberal sex-role attitudes performed better in individual competitive situations, a female with traditional sex-role attitudes when placed in an individual competitive situation, especially against a male, has avoided success.

A traditional belief has been that females possess a greater need for affiliation than for achievement. Two studies have indicated this assumption has been incorrect. Lunnenborg and Rosewood (1972) concluded from their research that there were declining sex differences between supposedly achievement-oriented males and affiliatively-oriented females. They suggested that it is now more accurate to describe men and women as possessing both achievement and affiliative needs. Stein and Bailey (1973) suggested that female achievement strivings have been misinterpreted. They concluded that females' achievement orientations were more likely to be manifested in areas which represent culturally defined sex-appropriate activities.

Block (1973) investigated the complex nature of sex-role socialization. He used the variables of sex-appropriate behavior, socialized sex-role definitions, and parental influence in concluding the following description of the

less stereotyped female. She has

> . . . developed from a different pattern of identification--androgynous to describe a parental pair in which neither mother nor father exemplified the typical cultural sex role stereotypes, but rather where both parents are salient and provide for their children models of competence, tolerance, consideration of others, and a sharing of familial responsibilities. (p. 524)

Another approach to the achievement orientations of females has been to focus on children. Lunnenborg and Rosewood (1973) concluded that boys' performance in competitive situations has been seen as a person-orientation as opposed to a social-orientation for girls. The authors contended that "boys' achievement motivation needs the ego-challenging conditions of competition while the girls' does not seem to need stimulation" (p. 162).

The final approach for examining achievement strivings in women has been to examine the family background. Epstein (1974) concluded that there are two characteristics which were important. First, successful women tended to come from higher-income families in which the mother held a professional work role. Secondly, the successful woman has been characterized by a lack of long-range career goals. Epstein contended this fact might be due to females attempting to please others and their fear of challenging self-doubt.

Based on the literature on achievement orientations of females, the results seemed to indicate that a female's

achievement motivation does not have a paramount negative consequence on her performance in a competitive situation. But much of the females' motive for success in a competitive situation seemed still to be somewhat regulated by the culturally defined sex-appropriate attitudes she held toward the specific situation.

Summary

The research on the personality of the coach has been limited. Much of the literature on the personality and behavior of the coach has arisen from impressionistic essays and stereotypic speculations. The few studies which have been completed have often used small, unrepresentative samples which have combined the coaches of different sports into one sample.

The majority of research on the personality of the coach has concentrated on the male coach. The results of these studies have been as contradictory and confusing as the results on the personality of the athlete.

As sparse as the research has been on the personality of the male coach, the personality of the female coach has been almost negligible. The research completed on the female in professional roles has been somewhat more prevalent, but often has been contradictory and has not shed much light on the personality of the woman coach.

CHAPTER III

PROCEDURES

The methods utilized in the investigation of the temperament traits of women who coached team sports and women who coached individual sports involved the selection of subjects, the measuring instrument, the pilot study, data collection, and the analysis patterns. Each will be discussed.

Selection of Subjects

The subjects for this study were drawn from a population of 179 women coaches. The original population of subjects mandated that each subject must have coached a team which participated in the 1975-1976 A.I.A.W. Regional Tournament (Division I and Division II) in the sports of basketball, volleyball, golf or tennis.

The A.I.A.W. Office in Washington, D.C. was contacted for permission to write to the A.I.A.W. Regional Representatives for the names of the coaches whose teams participated in the 1975-1976 A.I.A.W. Regional Tournaments in their respective regions. The A.I.A.W. Regional Representatives for all nine A.I.A.W. regions were contacted for the names and addresses of these coaches. Of the nine

Regional Representatives contacted, seven regions responded (Regions 2,3,5,6,7,8,9) furnishing the information which was requested (see map and Regional Representatives in Appendix A).

From the list of coaches sent by the Regional Representatives, only those coaches who were males were excluded from the first mailing to the original population of 179 women coaches. Each of these coaches was written an introductory letter informing her of the purpose of the study, requesting that she fill out an Information Questionnaire, and advising her of the obligations involved for the remainder of the study (see Appendix B). The Information Questionnaire was included for the purpose of obtaining descriptive information for the selection of the final sample.

The final selection of 53 subjects was made using the following criteria:

1. All subjects must have coached on the intercollegiate level for one year or more.

2. All subjects must have coached either a team sport solely or an individual sport solely throughout their entire professional coaching career.

3. For any subject in the team sport sample who coached both the basketball and volleyball teams at her institution, the subject was included in the volleyball sample since the volleyball regional tournament was held first in the academic year.

Of the final sample of 53 subjects, 20 or 38% were basketball coaches; 16 or 30% were volleyball coaches; 10 or 19% were golf coaches; and 7 or 13% were tennis coaches. The sample represented Regions 2, 3, 5, 6, 7, 8, and 9 of the A.I.A.W. (see map in Appendix F for Regional percentages). Of the final sample, 41 coaches were employed at institutions which were members of the large college division having 3,000 or more female students enrolled. Twelve coaches coached teams which were members of the small college division having fewer than 3,000 female students enrolled.

The Measuring Instrument

Permission to use the EASI III Temperament Survey was granted by Dr. Arnold Buss, the author of the instrument (see Appendix C). The selection of the EASI III Survey was based on several criteria relevant to the psychological literature. A review of the literature concerning temperament indicated that the traits of emotionality, activity, sociability, and impulsivity have been shown through the use of behavior genetic methods (twin studies) to be inherited traits. Secondly, the EASI III has been shown to be a valid and reliable self-report instrument for the measurement of the four temperament traits of emotionality, activity, sociability, and impulsivity and the nine subtraits which compose the four main traits (Buss & Plomin, 1975; Plomin, 1974).

The selection of the EASI III as the instrument to be used in this study was based on the concern for conceptual and methodological problems which have been prevalent in personality research in sport. Because the EASI III was derived from Buss and Plomin's Temperament Theory of Personality Development, the interpretations of the results of this study will be based on the theoretical framework from which the instrument was derived. An acceptance of the instrument predisposed the acceptance of interpretations made in accordance with this specific theory.

Because the subjects received two administrations of the same test questions, two copies of the test were required. One of the copies contained the directions which asked the subject to rate herself as she evaluated herself as a coach. The second copy presented the questions in a different order and the directions requested that the individual rate herself as a person.

The EASI III Survey was composed of 50 questions--five questions for each of the nine subtraits and the main trait of sociability. The respondent was to select an answer from five possible responses: rarely, seldom, sometimes, frequently, almost always (see Appendix C).

Pilot Study

A pilot study was conducted on ten women who had at one time coached either a team or individual sport and were

attending the University of North Carolina at Greensboro in 1975-1976 as graduate students. Each subject was administered the Information Questionnaire to test the clarity of the questions for obtaining information relative to the selection of subjects. The next procedure required that five of the ten subjects be given the EASI III Survey which requested that they respond with reference to how they saw themselves as a coach. The remaining five subjects were asked to respond to the EASI III with reference to how they saw themselves as a person. After a two-week period had elapsed, a second administration of the EASI III Survey was given. The order for the two groups of five subjects was reversed. Consequently, both groups responded as a coach and as a person.

Each respondent was requested to estimate the time of completion and to comment on the format of the Information Questionnaire and the two EASI III Surveys. The subjects' opinions were also solicited as to the feasibility of the two-week time period between the two tests. The clarity, format, and administration of the Information Questionnaire and the EASI III were judged to be acceptable with only a few minor changes and, therefore, were adopted.

Data Collection

An Information Questionnaire was used to obtain background information relevant to the selection of subjects

and to provide biographical data for a description of the subjects. The questions on the Information Questionnaire were developed for obtaining information on each subject which was relevant to her past participation in athletics, her past and present coaching responsibilities, and her present professional duties.

The initial mailing to the original population of 179 women coaches included an introductory letter and an Information Questionnaire (see Appendix B). The coaches were requested to return the completed Questionnaire in the stamped, self-addressed envelope. The letter was sent on March 27, 1977 and returns were accepted until April 30, 1977.

Of the 179 Information Questionnaires mailed, 129 or 72% were returned. Of the original 52 basketball coaches sampled, 39 or 75% responded. Of the original 52 volleyball coaches sampled, 42 or 81% responded. Of the original 43 golf coaches sampled, 25 or 58% responded. Finally, of the original 32 tennis coaches sampled, 23 or 72% responded.

Of the 129 coaches who returned the Information Questionnaire, 80 coaches had coached for one or more years on the collegiate level and had solely coached a team sport or solely coached an individual sport. Of the 80 coaches, 28 or 35% were basketball coaches: 21 or 26% were volleyball

coaches; 18 or 23% were golf coaches; and 13 or 16% were tennis coaches.

The final sample of 80 coaches was mailed a letter explaining the procedure for selection of the final sample from the information on the Questionnaire and was given a further explanation of the purpose of the study. The letter requested that if the coaches wished to participate in the study that they should fill out the attached EASI III Survey and return it in the stamped, self-addressed envelope. If they did not wish to participate in the study they were asked to sign the Survey and return it unanswered. The letter and the EASI III were mailed on May 1, 1977 (see Appendix D).

The final sample of 80 women coaches was randomly divided into two groups. One half of the sample was sent the EASI III which requested that they respond to the questions as they thought of themselves as a coach. The other half was sent the EASI III which requested that they respond to the questions as they thought of themselves as a person. Returns were accepted until June 30, 1977.

Of the 80 coaches sampled, 53 or 66% returned the completed EASI III Survey. Nine Surveys or 11% were returned signed but not completed which indicated they did not wish to be a part of the study. Of the nine Surveys returned imcompleted, seven indicated that they would not be available during the summer for completion of the second Survey.

After the mailing of the first Survey, 53 subjects remained. Of the 53 subjects, 20 or 38% were basketball coaches; 16 or 30% were volleyball coaches; 10 or 19% were golf coaches; and 7 or 13% were tennis coaches.

The first EASI III of each respondent was dated upon receipt so that exactly a two-week period elapsed before the mailing of the second Survey. After a two week period, each respondent was sent a letter indicating that the completion of the second EASI III would be the terminus of her responsibility. This letter also thanked the coach for her cooperation (see Appendix E). Those individuals who were asked to describe themselves as a person on the first EASI III were then sent a second Survey which asked them to describe themselves as a coach. Those individuals who were asked to describe themselves as a coach on the first EASI III were then sent a second Survey which asked them to respond with reference to themselves as a person.

Of the 53 coaches who were mailed the second EASI III, 53 or 100% responded. All data were collected by August 13, 1977. See Appendix F for the number and percentages of the subjects from the A.I.A.W. Regions for each sport.

Analysis of the Data

The analysis of the Information Questionnaire was done using frequencies and percentages for each question for the team sport coaches and the individual sport coaches. The

frequencies and percentages were also computed for basketball, volleyball, golf, and tennis coaches.

Each EASI III Survey was scored and each trait's score was recorded on the subject's score card. Each subject's card contained 26 scores. There were 13 scores for the Survey in which she responded as a person and 13 scores for the Survey in which the subject responded as a coach. The 13 scores were as follows: general emotionality, fear, anger, emotionality total, tempo, vigor, activity total, sociability, decision time, persistence, inhibitory control, sensation seeking, and impulsivity total. See Appendix G for the subject's scores.

Following the scoring procedure, the data were punched on IBM cards and then put on a magnetic file for future analysis. The computer center at the University of Rochester, Rochester, New York was the site for the computer. analysis.

The University of Rochester Weighted ANOVA System (URWAS) program was used for the statistical analysis of the first purpose of the study. The following statistical analyses were produced for the first purpose of the study which was to compare the temperament traits of women who coached team sports and women who coached individual sports.

1. Summary statistics for the four main traits of emotionality, activity, sociability, and impulsivity and for the nine subtraits of general emotionality, fear, anger, tempo, vigor, inhibitory control, decision time, persistence, and sensation seeking.

2. One-way Analysis of Variance (ANOVA) and one-way Multivariate Analysis of Variance (MANOVA) for the four main traits for the groups of team sport coaches and individual sport coaches; for basketball and volleyball coaches; and for tennis and golf coaches.

3. One-way ANOVA and a one-way MANOVA for the nine subtraits for the groups of team sport coaches and individual sport coaches; for basketball and volleyball coaches; and for golf and tennis coaches.

The Statistical Analysis System (SAS '76) was used for the second purpose of this study. The following statistical analyses were produced to determine the relationship between perceptions of these women as they viewed themselves as a person and as a coach.

1. Summary statistics for the four main traits as the subjects viewed themselves as a coach and as a person and for the nine subtraits as they viewed themselves as a coach and as a person.

2. The correlation coefficients for all 53 subjects on the four main traits and the nine subtraits as they viewed themselves as a person and as a coach.

3. The correlation coefficients for the 36 team sport coaches on the four main traits and the nine subtraits as they viewed themselves as a person and as a coach.

4. The correlation coefficients for the 17 individual sport coaches on the four main traits and the subtraits as they viewed themselves as a person and as a coach.

CHAPTER IV

ANALYSIS AND DISCUSSION OF DATA

The data which have been analyzed will be presented and discussed in order to answer the questions posed in the statement of the problem. The subjects for this study were 36 female team sport coaches and 17 female individual sport coaches currently coaching in institutions of higher learning in the United States. The sample was drawn from an original population of women who coached teams which participated in the 1975-1976 A.I.A.W. Regional Tournaments in the sports of basketball, volleyball, golf, and tennis. The final sample of 53 coaches was representative of A.I.A.W. Regions 2, 3, 5, 6, 7, 8, and 9. The sample included only those coaches who had exclusively coached a team sport or an individual sport.

The subjects were administered two forms of the EASI III Survey. The final sample of 53 subjects was randomly divided in half. Half of the subjects were directed to answer the questions as they viewed themselves as a coach, while the other half of the subjects responded as they saw themselves as a person. The second administration reversed the directive to view themselves as a person or as a coach. A two-week period elapsed between the administration of the

two EASI III Surveys.

The University of Rochester Weighted ANOVA System (URWAS) program was used for the statistical analysis to determine any significant differences in the temperament traits possessed by women who coached team sports and women who coached individual sports. A one-way ANOVA and MANOVA were computed on the four main traits and the nine subtraits for the groups of team sport coaches and individual sport coaches; for volleyball and basketball coaches; and for golf and tennis coaches. The Statistical Analysis System (SAS '76) was used to determine the correlation coefficients for the comparison of the perceptions of the coaches as they viewed themselves as a person and as a coach.

Assumptions To Be Satisfied In an Analysis of Variance

The use of an analysis of variance technique involves certain assumptions which should be met in order to derive significant table values for the test. According to Kirk (1968, p. 43), hypothesis testing based on the F distribution involves the following assumptions:

1. Observations are drawn from normally distributed populations.
2. Observations represent random samples from populations.
3. Variances of populations are equal.

Cochran (1947) has pointed out that it is impossible to be certain that all required assumptions were exactly satisfied by a set of data. Thus, analysis of variance must be regarded as approximate rather than exact.

The assumption of a normally distributed population is equivalent to the assumption of normally distributed scores. An examination of the frequency distribution and the standard deviations of the scores in each of the independent variables revealed that the scores were normally distributed around the group mean.

The original population of 179 coaches was composed of women who coached teams who participated in the 1975-76 A.I.A.W. Regional Tournaments in the sports of basketball, volleyball, golf, and tennis. Based on the results of the IQ sent to this 179 coaches, 80 coaches were selected on the criterion that these coaches exclusively coached either a team sport or exclusively an individual sport. All 80 coaches were asked to participate in the study. Fifty-three of these responded with willingness to participate as the final sample. However, the sample was limited in the fact only A.I.A.W. institutions and female coaches were used. The study was further limited by the use of only two team sports, basketball and volleyball, and two individual sports, golf and tennis.

The assumption of homogeneity of variance, that the two samples were randomly drawn from populations having the same

variance, was tested for using the Cochran C Test. This particular test of homogeneity of variance was used because the sample sizes were unequal. The Cochran C Test showed that the criterion scores on the whole were drawn from populations having the same variance (see Appendix H).

Descriptive Statistics - The Information Questionnaire

The subjects for this study were asked to fill out an Information Questionnaire which provided a biographical description of this particular sample. Table 6 provides a summary of the percentages of subjects from the two main groups of team and individual sport coaches and the four subgroups of basketball, volleyball, golf, and tennis for each question.

Age. The team sport coaches, on the whole, tended to be younger. Eighty percent of the team sport coaches were between the ages of 20 and 40 with the basketball coaches having the higher percentage of older coaches, while 51% of the individual sport coaches were between the ages of 20 and 40. Seventeen percent of the individual sport coaches were over 50 years of age with the golf coaches being the oldest.

Degree Held. The team sport coaches tended to hold higher terminal degrees. Twelve percent held a BS or BA degree, 73% held a MS or MA degree, and 16% held an Ed.D. or Ph.D. degree. Among the individual sport coaches, 36%

Table 6

Summary of the Information Questionnaire

Team Sport - percentages based on N=36
Basketball - percentages based on N=20
Volleyball - percentages based on N=16
Individual Sport - percentages based on N=17
Golf - percentages based on N=10
Tennis - percentages based on N=7

	TEAM	Basketball	Volleyball	INDIVIDUAL	Golf	Tennis
1. Age: 20 - 30	.45	.38	.54	.17	.11	.27
31 - 40	.35	.31	.41	.34	.33	.37
41 - 50	.16	.24	.05	.32	.28	.36
over 50	.04	.07		.17	.28	
2. Highest degree presently earned:						
B.S./B.A.	.12	.08	.18	.36	.44	.28
M.S./M.A.	.72	.75	.68	.46	.39	.54
Ed.D./Ph.D.	.16	.07	.14	.18	.17	.18
other						
3. Present rank held:						
professor	.04	.07		.15	.17	.10
associate professor	.09	.10	.05	.12	.23	.27
assistant professor	.41	.39	.38	.23	.23	.18
instructor	.25	.17	.31	.35	.34	.27
graduate assistant	.04	.07				
other: head coach	.17	.20	.26	.15	.23	.18
4. Duties include:						
coaching only	.19	.17	.31	.24	.23	.27
coaching and administration	.18	.31	.05	.07	.05	.10
coaching and teaching	.49	.51	.57	.45	.49	.36
coaching, adminstration, and teaching	.14	.21	.07	.24	.23	.27
5. Number of years coaching on collegiate level:						
1 - 4	.42	.45	.41	.38	.44	.27
5 - 9	.23	.13	.32	.34	.33	.36
10 - 14	.28	.35	.26	.14	.14	.18
15 - 19	.06	.05	.01	.10	.05	.19
over 20	.01	.02		.04	.05	

Table 6 cont.

	TEAM	Basketball	Volleyball	INDIVIDUAL	Golf	Tennis
6. Number of organizations you belong to:	4.9	5.1	4.7	4.9	5.1	4.7
7. Employed to coach at another level:						
No	.80	.87	.72	.77	.83	.64
Yes	.20	.13	.28	.23	.17	.36
8. Participated in inter-scholastic athletics:						
No	.42	.46	.32	.38	.44	.27
Yes	.47	.14	.63	.62	.56	.73
There weren't any	.11	.40	.05			
9. Participated in inter-collegiate athletics:						
No	.22	.26	.18	.45	.56	.27
Yes	.76	.64	.78	.55	.44	.73
There weren't any	.02	.10	.04			
Sports days	.04	.06				
AAU	.02	.04				
Didn't participate in sport now coaching if participated:			.18		.17	.10
10. Sport currently coaching: Elected to coach:						
No	.10		.13	.07	.05	.10
Yes	.90	1.0	.87	.93	.95	.90
11. Happy and satisfied with your coaching assignment:						
No	.12	.11	.14	.10	.17	.18
Yes	.85	.85	.82	.80	.78	.82
Would rather not answer	.03	.04	.04	.10	.05	
12. Preference for coaching a team or individual sport:						
No	.17	.23	.26	.14	.17	.10
Yes	.83	.89	.74	.86	.83	.90

held a BS or BA degree, 46% held a MS or MA degree, and 18% held a Ed.D. or Ph.D. degree.

Rank and Duties. The present rank of the majority of team sport coaches was assistant professor (41%) and the majority of these team sport coaches performed coaching and teaching duties (49%). Of the team sport coaches, 19% performed only coaching duties while 18% performed duties as coaches and administrators. The range of rank for the individual sport coaches was quite diverse. Fifteen percent held the rank of professor while 35% held a rank of instructor. Again, the majority of duties for the individual sport coaches included coaching and teaching (45%).

Number of Years Coaching. Both groups of coaches have been coaching for approximately the same number of years. Of the team sport coaches, the basketball coaches had coached from 17 to 2 years and the volleyball coaches had coached from 12 years to 1 year. Among the individual sport coaches, the tennis coaches had coached from 15 to 2 years, while the golf coaches had coached from 25 to 2 year.

Number of Organizations. The subjects were asked to indicate the number of organizations, related and unrelated to their profession, they belonged to. This question was designed with the idea of reflecting their level of sociability. The average number of organizations both groups belonged to was five.

Employed to Coach on Another Level. The majority of coaches in both groups had coached only on the intercollegiate level. Those who had coached at another level had done so mainly at the senior high level.

Participation in Athletics. On the interscholastic level, 86% of the individual sport coaches had participated in interscholastic competition while only 47% of the team sport coaches had participated. Eleven percent of the team sport coaches indicated they had not participated because there were not any interscholastic athletics.

Of the team sport coaches, 70% indicated they had participated in intercollegiate athletics. All of the basketball coaches who participated in intercollegiate athletics had done so in basketball, but four of the volleyball coaches who had participated in athletics had not played volleyball. Among the individual sport coaches, 55% participated in intercollegiate athletics. One of the tennis coaches and three of the golf coaches who had competed had not participated in their respective sports.

Elected to Coach. Ninety-one percent of the team sport coaches indicated they would elect to coach the sport they were coaching given the freedom to choose. Eight-four percent of these coaches indicated they were happy and satisfied with their coaching assignment. Of the individual sport coaches, 93% elected to coach their sport and 80% were happy

and satisfied with their job.

Statistical Analysis

The first purpose of this study was to determine any significant differences in the temperament traits possessed by women who coached team sports and women who coached individual sports as they viewed themselves as a coach. All analyses were performed on the two main independent variables of team sport coaches and individual sport coaches and also on the subgroups within each of these two variables. The subgroups for team sport coaches were basketball and volleyball coaches; and for the individual sport coaches, the subgroups were golf and tennis coaches. All analyses included the dependent variable of temperament traits which consisted of the four main traits of emotionality, activity, sociability, and impulsivity and the nine subtraits of general emotionality, fear, anger, tempo, vigor, inhibitory control, decision time, persistence, and sensation seeking.

The statistical methods of multivariate analysis of variance (MANOVA) and analysis of variance (ANOVA) were used to ascertain if there were significant differences among the coaches. The use of the MANOVA was applicable because of the existence of multiple measures on each subject. The MANOVA considered the analysis of the temperament traits as a whole, rather than isolating the individual temperament traits. The

ANOVA was used to determine the relationship between the individual traits and the groups being compared. The ANOVA compared the variability among the means of the team sport coaches and the individual sport coaches with the average variability found within each temperament trait.

The means for the four main traits and the nine subtraits for the two main groups of team and individual sport coaches and the subgroups of basketball, volleyball, golf, and tennis were examined first to provide a profile and description of the traits which the subjects in this study perceived themselves as possessing. The statistical results of the MANOVA and ANOVA were then scrutinized for any significant differences between the groups. Finally, the correlational analyses was investigated to determine the relationship of the perceptions of the subjects as a person and as a coach.

Means

When interpreting the results of this study, it is important to be aware that each trait may be thought of as being on a continuum of behaviors. Buss and Plomin (1975) have identified the ends of the continuum as being representative of extreme behaviors of each trait (see Table 7).

When analyzing the scores of an individual or group on the four main traits, the higher the score the more representative that individual or group is of the end of the continuum

Table 7

Extreme Behaviors of Each Trait

Trait	Extremes of the trait
Emotionality	Impassive to Emotional
Activity	Lethargic to Active
Sociability	Detached to Gregarious
Impulsivity	Deliberate to Impulsive

labeled by the particular trait name used by Buss and Plomin --namely, emotionality, activity, sociability, and impulsivity. For example, the trait of activity has a possible extreme score of 50 which indicates an individual would represent the extreme end of the continuum labeled active. A subject scoring 25 on the trait of activity would, therefore, be exactly at the mean of the continuum of behaviors for the trait of activity.

Buss and Plomin intended that the subtraits represent or correlate with the extreme of the continuum which is represented by the names of the four main traits (see Figure 8).

All subtraits have a maximum score of 25. Therefore, a high score on the subtraits of tempo and vigor would indicate that the individual performs a behavior at a rapid pace and with vigor. High scores on the subtraits of general emotionality, fear, and anger would be indicative of a person who shows excessive distress, fear, or anger in an emotional situation. The trait of impulsivity is composed of four

	Activity	
Lethargic		Active Tempo Vigor
	Emotionality	
Impassive		Emotional General Emotionality Fear Anger
	Sociability	
Detached		Gregarious
	Impulsivity	
Deliberate		Impulsive Inhibitory Control Decision Time Persistence Sensation Seeking

Figure 8. Subtraits of the four main temperament traits

subtraits which correlate with the extreme behavior of impulsive. A high score for the subtrait of inhibitory control signifies an inability to delay a response. An individual who scores high on the subtrait of decision time would make decisions quickly. A high score for the subtraits of persistence and sensation seeking would reveal that the individual lacks persistence in finishing a task, and, therefore, often seeks new and exciting behavior styles.

Buss and Plomin have identified the area long the continuum between the two extremes as a gray area in which the behavioral style exhibited is adaptive to the situations of everyday life. They, however, do not define or clarify any of the behaviors which occupy the middle range of each continuum except to say that such behaviors are adaptive as

opposed to being extreme or maladaptive. The lack of delineation of the behaviors between the extremes of the continuum has made it difficult to describe the behavioral traits of the subjects of this study. As will be seen in the following profile and description, most of the subjects' scores fell within this gray area.

Team and Individual Sport Coaches. The means of the team sport coaches as a group and the individual sport coaches as a group have been examined first to provide a profile and description of the two main groups of this study. Figure 9 represents a graphic representation of the profile of the team and individual sport coaches. Table 8 presents the means for the two groups and the means of the two groups combined for the four main traits and the nine subtraits. Each of the subtraits has a maximum score of 25 and a mean of 12.5. The trait of emotionality has a maximum score of 75 and a mean of 37.5; activity, a maximum score of 50 and a mean of 25; sociability, a maximum score of 25 and a mean of 12.5; and impulsivity, a maximum score of 100 and a mean of 50.

The means for the team sport and individual sport coaches on the four main traits and the nine subtraits were similar. The means (Table 8) and the profile (Figure 9) have enabled the investigator to explain and describe the temperament traits possessed by the team and individual sport coaches as they perceived themselves as a coach.

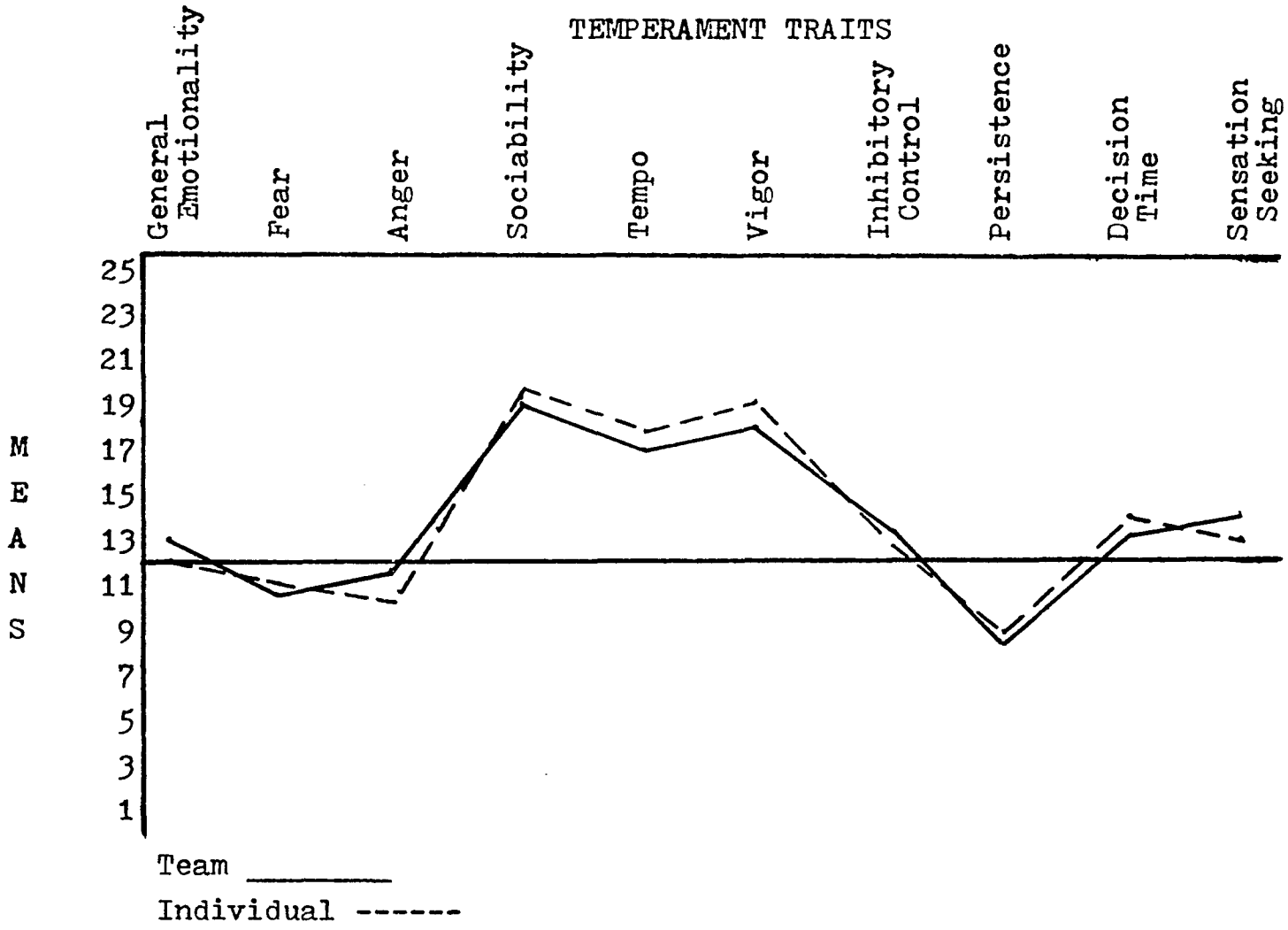


Figure 9. Profiles of the temperament traits of team and individual sport coaches.

Table 8

Means for the Team Sport Coaches, the Individual Sport Coaches, and the Combined Group

Traits	High Score	Mean	Groups		
			Team	Individual	Combined
EMOTIONALITY	75	37.50	35.93	33.76	34.76
General Emotionality	25	12.50	13.00	12.53	12.76
Fear	25	12.50	10.61	10.94	10.77
Anger	25	12.50	11.97	10.29	11.13
ACTIVITY	50	25.00	34.19	35.59	34.89
Tempo	25	12.50	16.75	17.24	16.99
Vigor	25	12.50	17.44	18.35	17.89
SOCIABILITY	25	12.50	18.89	18.94	18.91
IMPULSIVITY	100	50.00	49.30	48.65	48.97
Inhibitory Control	25	12.50	13.64	13.00	13.32
Persistence	25	12.50	8.41	8.58	8.49
Decision Time	25	12.50	13.33	13.94	13.63
Sensation Seeking	25	12.50	13.92	13.12	13.52

The means for the team (35.58) and the individual (33.76) sport coaches on the trait of emotionality approximated the mean (37.5) for that trait. This finding indicated that these women perceived their behavioral style to be between the extreme behaviors of emotional to impassive. This middle or adaptive range of the trait of emotionality indicated that in an emotional situation, such as a game situation, these women coaches viewed themselves as not becoming overly emotional, showing an excess of unwarranted fear, or becoming excessively angry. The number and intensity of the emotional outbursts for these coaches should be within the normal range of behavior. The level of fear possessed by these subjects was indicative of an average to below average level of anxiety.

Although the means for the subtraits and the main trait of emotionality were not statistically different, it was interesting to note that there was some disparity in the means. The team sport coaches scored higher on the subtraits of general emotionality and anger whereas the means for the subtrait of fear closely approximated each other. The mean of the subtrait of anger for the team sport coaches (11.97) as compared to the mean for the individual coaches (10.29) suggested that the team sport coaches perceived themselves as becoming more annoyed in a coaching situation than the individual coaches would. Anger, for the purpose of this

study, has been defined as an emotional response brought on by autonomic arousal to a situation which was perceived as being displeasing; an attempt to push away a noxious stimulus. Unlike individual sports, the play in a basketball or volleyball game is governed by an official. This official somewhat sets the tone for the intensity of play, within the rules and spirit of the game, which will be allowed. The officials are never a controllable factor and therefore might be viewed as a noxious stimulus.

Overall, the team sport coaches perceived themselves as being more emotional than the individual sport coaches. However, both groups possessed an adaptive range of behavior with regard to their emotional style of behaving. This would seem to be a desirable quality in the behavioral style of a coach since frequent and unwarranted emotional outbursts would have an aversive affect on the players. Conversely, a low level of emotional style (impassive) in a coach's behavior might be interpreted as a lack of motivation or concern especially in an emotionally charged situation.

The means of the team sport and individual sport coaches signified that both groups were highly sociable. The sociable person, according to Buss and Plomin, tended to seek the presence of others, preferred their presence, and responded to others easily. They also described the sociable person as a joiner.

Buss and Plomin contended that the sociable person preferred the social interaction involved in sport. They further proposed that the interactive aspect of sport has two components, competition and cooperation. The first aspect, competition, can be found in both team and individual sports, but the component of cooperation occurs "only in team sports". Buss and Plomin concluded that "Other things being equal, we expect the social person to prefer team sports to individual sports because team sports are doubly social through the give-and-take of competition and the comaraderie and group feeling of cooperation" (p. 89). This statement was unsubstantiated by the results of this study. This finding may be attributable to the fact that these women coaches have demonstrated their need for social interaction by entering the realm of sports which Buss and Plomin have identified as a social situation. These coaches have undoubtedly had contact with both types of sports, team and individual, and have selected one or the other by virtue of past opportunity and experience. The biographical data indicated that the majority of these women were coaching their particular sport because of knowledge and experience. However, the team sport coaches also indicated they enjoyed the coordinating of team members as a unit, whereas the individual sport coaches indicated they liked the one-on-one and small group atmosphere of their sport. But, as a whole, both team

sport and individual sport coaches were shown to be of a similar temperamental nature with respect to sociability.

The means of the team and individual sport coaches for the trait of activity were also similar. The means demonstrated that women coaches were shown to be above average for the trait of activity. Thus on a continuum of behaviors from active to lethargic, the subjects were in the middle, adaptive range of the trait, yet tended toward being more active than lethargic.

The above average means for the subtraits of tempo and vigor suggested that the behavioral styles of these coaches were performed with vigor and at a quick pace. A cursory examination of the subtraits of activity indicated that the individual sport coaches scored higher on both subtraits. This suggested that there was a difference, although not statistically significant, in the perceptions of the individual and team sport coaches with respect to the pace and vigor with which behaviors were performed.

The means of the fourth temperament, impulsivity, indicated that the team sport (49.30) and the individual (48.65) sport coaches were similar. On the continuum of behavioral styles of impulsive to deliberate, these women were in the middle, adaptive range of this trait. In essence this suggested that these women were able to delay gratification of a particular need or incentive if the particular behavioral

style was perceived as inappropriate at that time. The level of impulsiveness did not, however, indicate that these responses would always be delayed.

Although the means for the main trait of impulsivity were similar for both groups, an examination of the subtraits of impulsivity indicated some specific directions with regard to the coaches' over-all impulsive behavior. The means for the subtrait of inhibitory control suggested that these women were able to delay but not suppress an impulse indefinitely. With regard to decision time, the means of the groups indicated that these coaches were not overly deliberate in making a decision, but tended more toward making decisions with a slightly above average level of deliberation. The level of sensation seeking or the need for new and exciting situations for these women was again average. Finally, an examination of the subtrait of persistence showed that these coaches were below the average for this trait. The level of persistence suggested that the coaches tended to be persistent in their pursuit of a specific goal.

The team sport and individual sport coaches in this study perceived themselves as possessing traits which were found to be in the middle, adaptive range of behavioral styles for the four main traits and the nine subtraits. Buss and Plomin have defined the middle range of behaviors as being the adaptive level of each trait which allowed the

individual to cope with a variety of situations. However, within this middle, adaptive range, these women tended to be highly sociable and active in their perceptions of their behavioral styles.

Subgroups of Coaches. When investigating the means of the subgroups of basketball, volleyball, golf, and tennis coaches some interesting comparisons can be made. Figures 10 through 15 graphically represent the profiles of the subgroups of coaches on the nine subtraits. The means of the subgroups (see Table 9) revealed that between the subgroups some differences did exist although only one trait, decision time, was statistically significant for the golf and tennis coaches. All of the subgroups of coaches, like the two main groups, perceived themselves as possessing temperament traits which were in the middle, adaptive range of the continuum of behaviors for each main trait.

The basketball coaches perceived themselves as being the most emotional group with the tennis coaches second, and the golf coaches as being the least emotional. These means may be indicative of the stereotyped role which has been projected by participants in these sports. Basketball coaches have often been seen to vocally and physically express their emotions while a golf coach remains relatively obscure with respect to her emotional behavior. The stereotype of a golfer as projected by the media is also one of reserve.

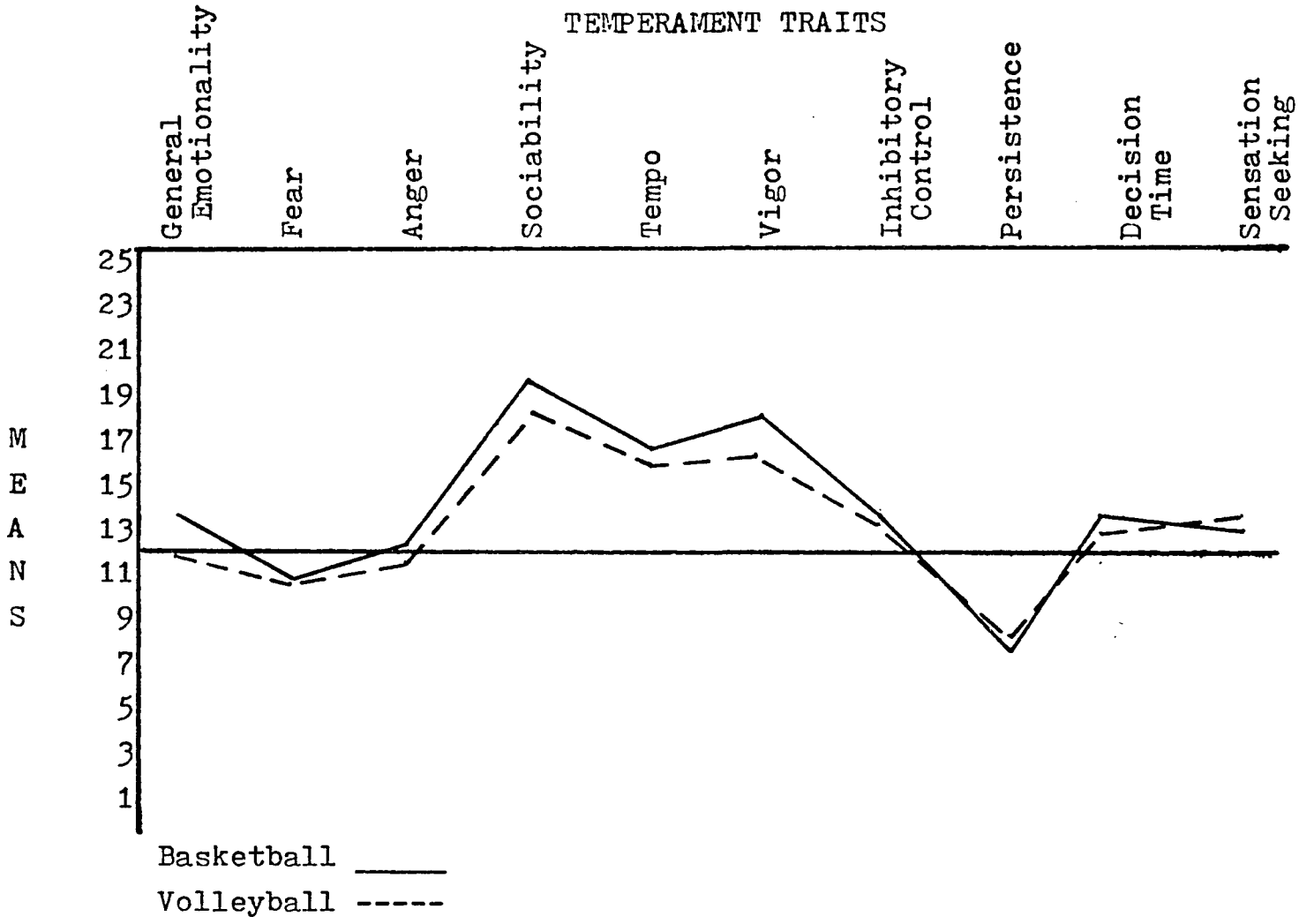


Figure 10. Profiles of the temperament traits of basketball and volleyball coaches.

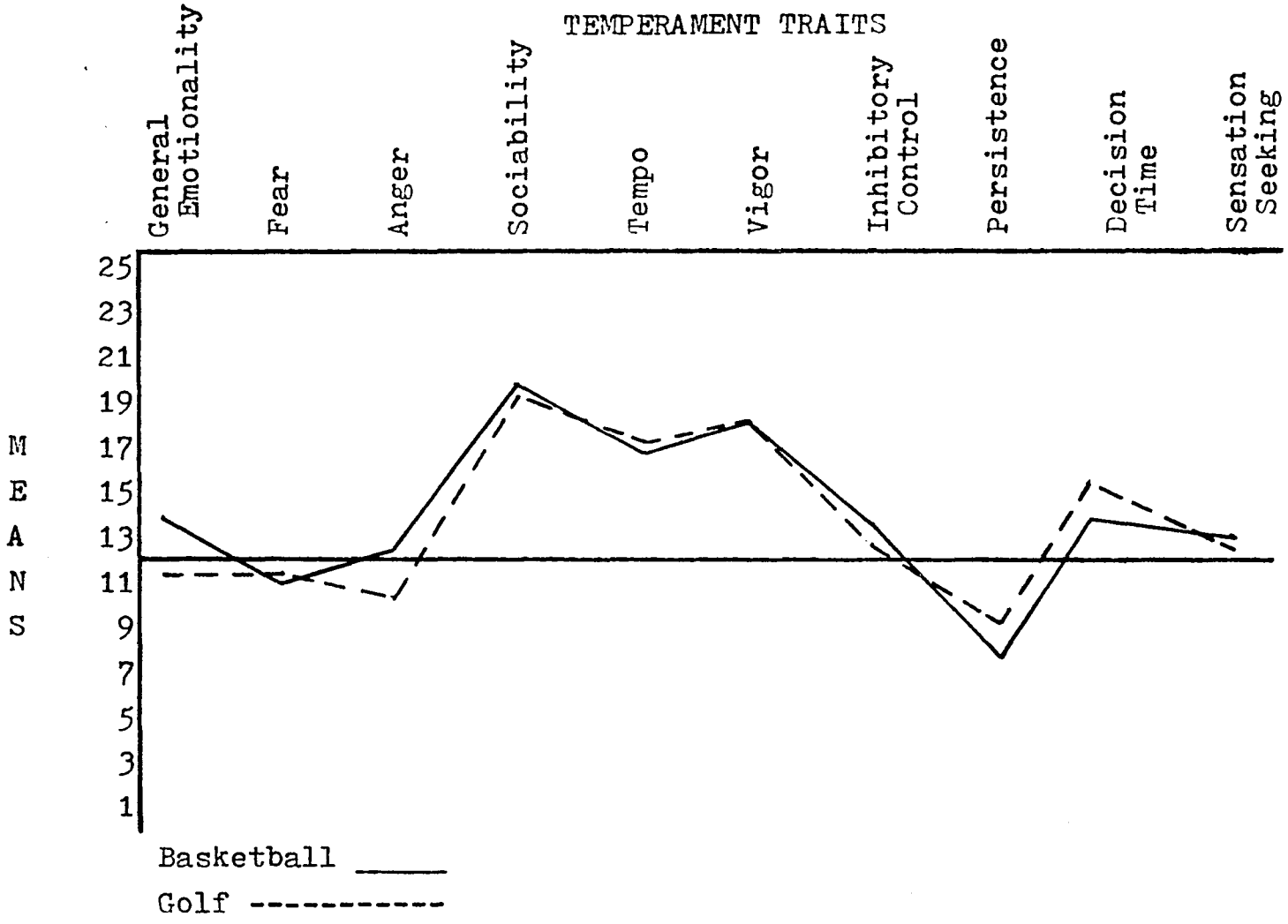


Figure 11. Profiles of the temperament traits of basketball and golf coaches.

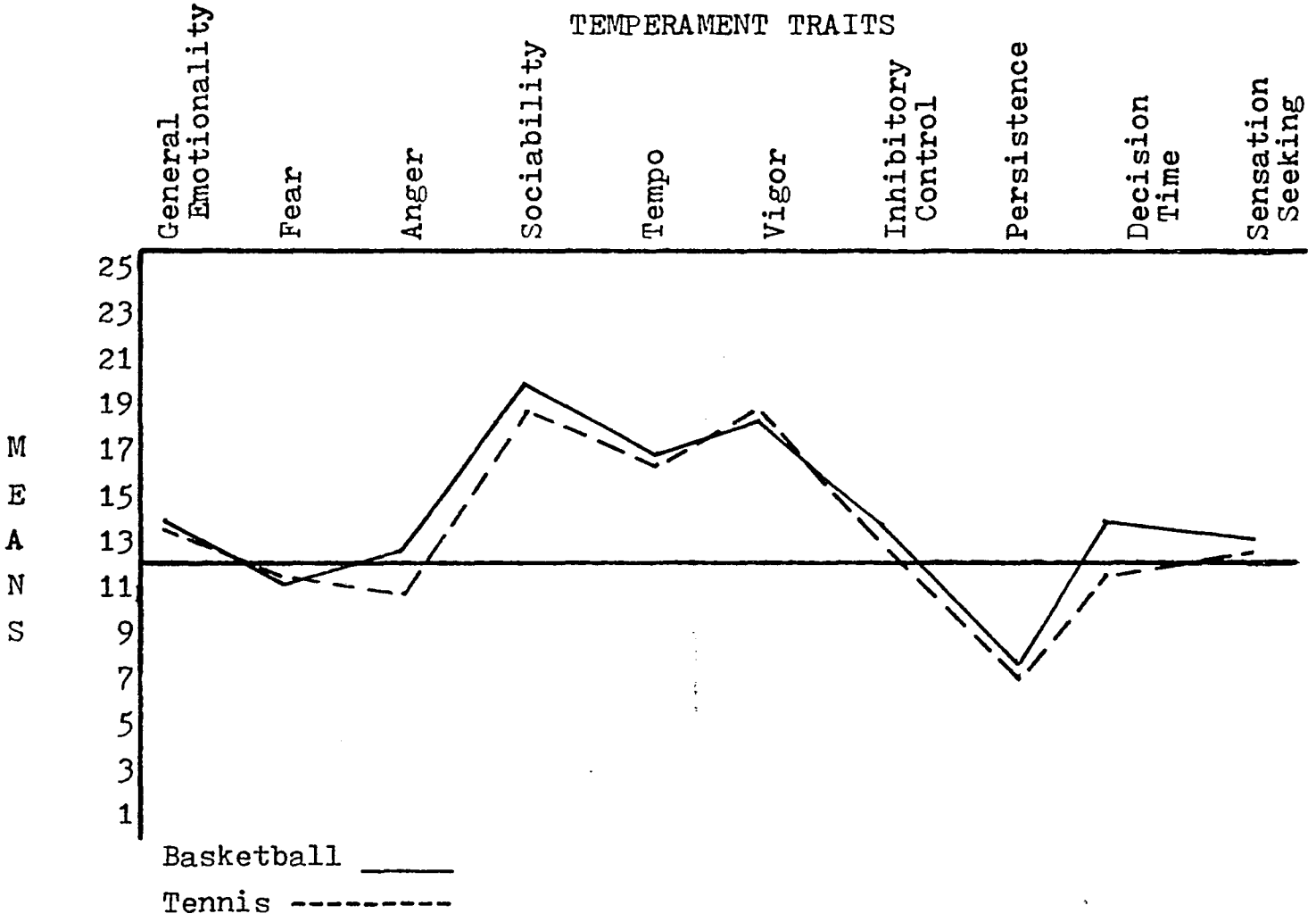


Figure 12. Profiles of the temperament traits of basketball and tennis coaches.

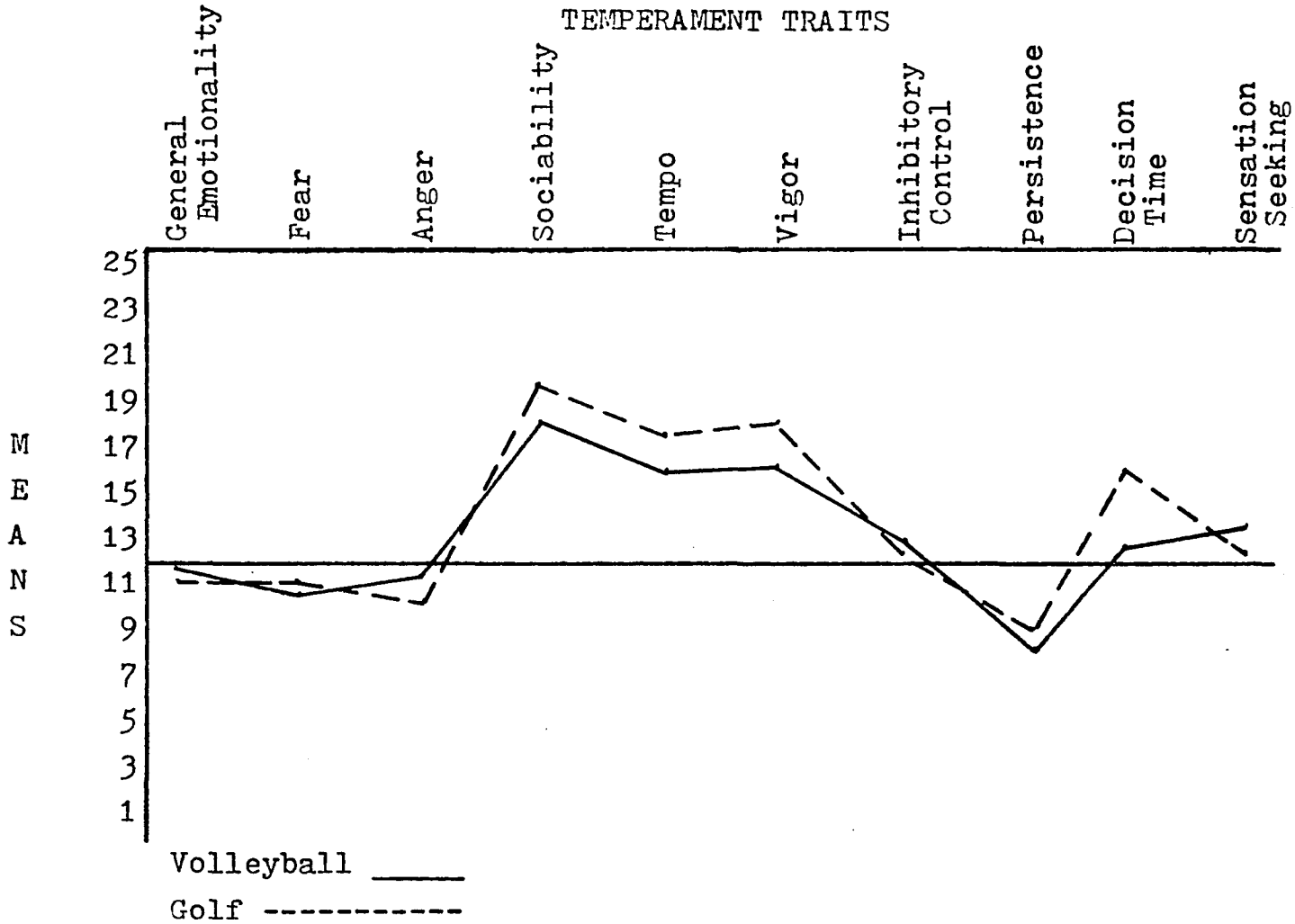


Figure 13. Profiles of the temperament traits of volleyball and golf coaches.

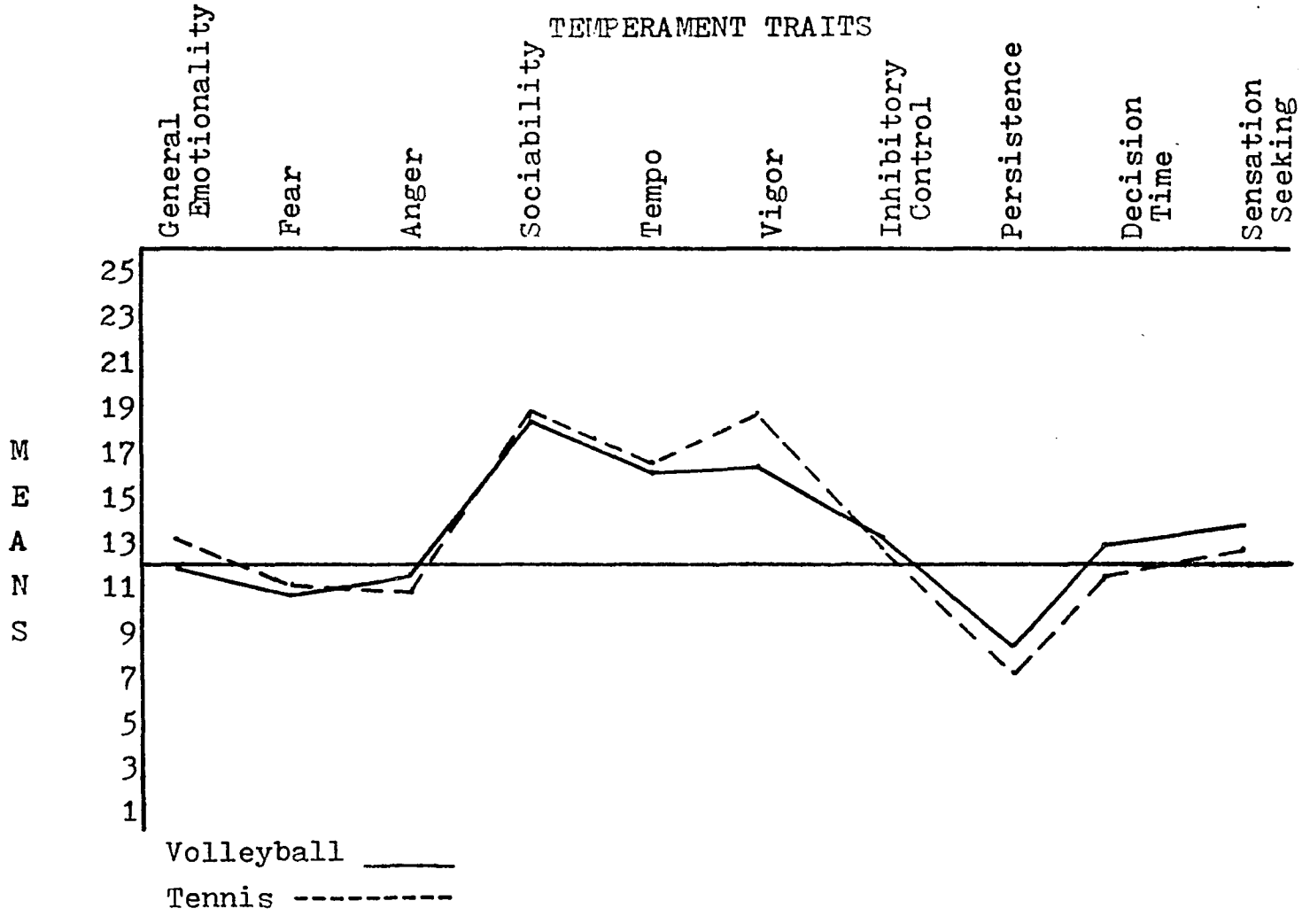


Figure 14. Profiles of the temperament traits of volleyball and tennis coaches.

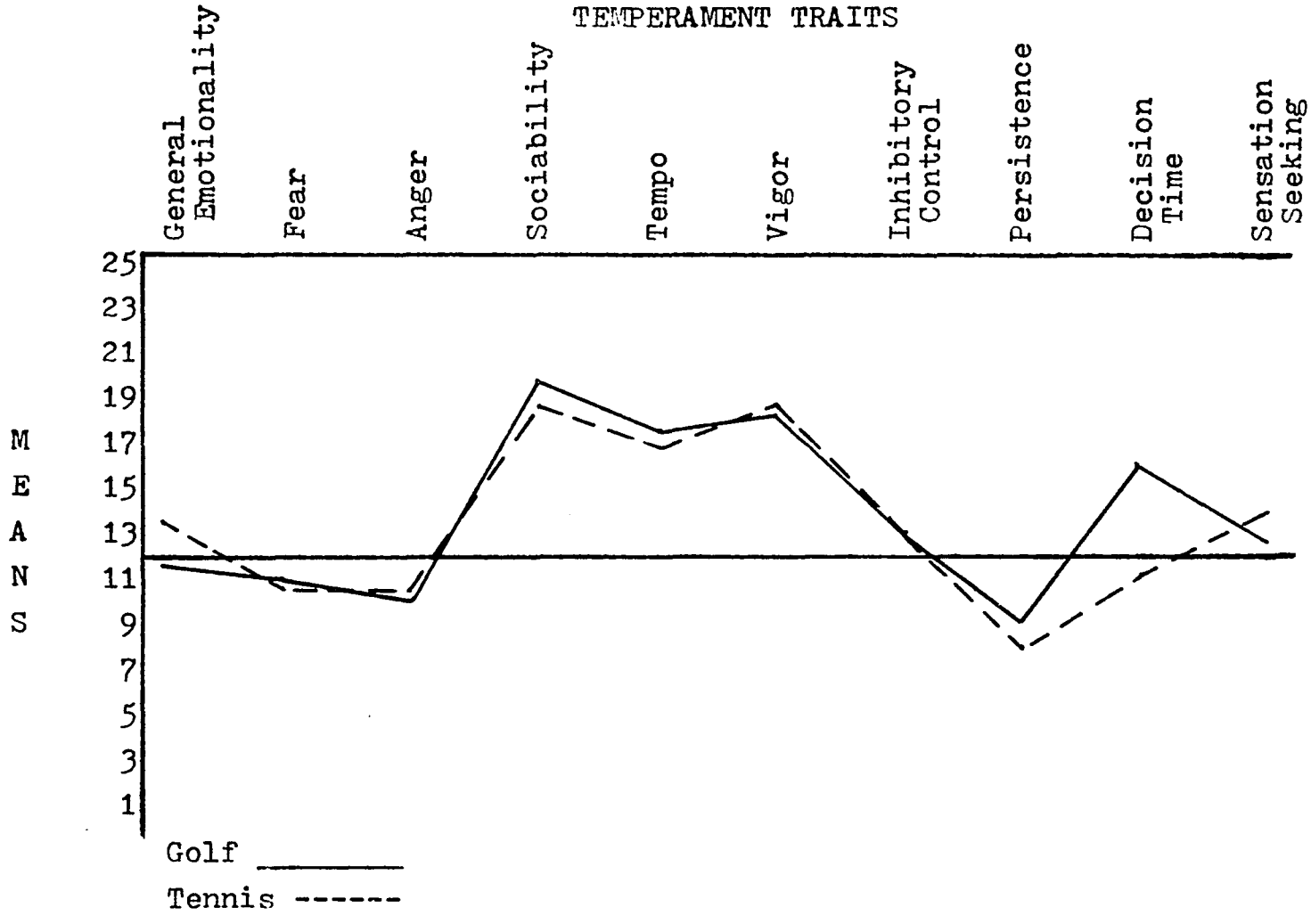


Figure 15. Profiles of the temperament traits of golf and tennis coaches.

Table 9

Trait Means for the Subgroups of Coaches

Trait	High Score	Mean	Subgroups			
			Basketball	Volleyball	Golf	Tennis
EMOTIONALITY	75	37.5	36.90	33.93	32.80	35.14
General Emotionality	25	12.5	13.76	12.37	11.60	13.56
Fear	25	12.5	10.70	10.50	11.00	10.86
Anger	25	12.5	12.70	11.06	10.20	10.43
ACTIVITY	50	25	35.00	33.19	35.50	35.73
Tempo	25	12.5	17.00	16.44	17.50	16.86
Vigor	25	12.5	18.00	16.75	18.00	18.86
SOCIABILITY	25	12.5	19.45	18.19	19.20	18.57
IMPULSIVITY	100	50.0	49.30	49.31	50.70	45.71
Inhibitory Control	25	12.5	13.90	13.31	13.00	13.00
Persistence	25	12.5	8.05	8.87	9.20	7.71
Decision Time	25	12.5	13.65	12.94	15.60	11.57
Sensation Seeking	25	12.5	13.70	14.19	12.90	13.43

The means of the subtrait of general emotionality or distress further reinforced this hypothesis with the basketball coaches scoring highest. The means of the subtrait of fear were all similar with no differentiation being made. However on the subtrait of anger, basketball coaches perceived themselves to possess the most displeasure with a noxious stimulus. It might be interesting to determine the factors which anger a coach in her particular sport. As previously mentioned, the officials might be an instigating stimulus in the case of the team sports and, as the means revealed, especially for the basketball coaches.

The means of the trait of activity were approximately the same and showed these groups to perceive themselves as highly active. The volleyball coaches regarded themselves as being the least active of all the subgroups of coaches. The mean of the subtrait of tempo revealed that the golf coaches perceived their behavioral styles as being the most fast-paced, while the tennis coaches perceived themselves to be the most vigorous. The mean of the tennis coaches on the subtrait of vigor supported the hypothesis of Buss and Plomin that an individual's need for a pulsating activity with a driving tempo was reflected in the choice of sports. They contended that an individual with a high activity temperament liked "tennis, handball, and squash the best; these were followed by football, basketball, and volleyball . . ." (p. 31).

Buss and Plomin suggested that the best-liked sports for the person with a high activity temperament "involve not only a huge energy output but also a vigorous exertion" (p. 31). However, the fact that the golf coaches had the highest mean for the subtrait of tempo did not support Buss and Plomin's hypothesis.

All of the subgroups perceived themselves as being highly sociable. The differences in the means for the subgroups was almost negligble. The means of the two main groups of coaches (team and individual) on the trait of sociability revealed that the individual sport coaches viewed themselves as more sociable. But an examination of the subgroups revealed that of the four subgroups, the basketball coaches regarded themselves as being the most sociable while the volleyball coaches perceived themselves as being the least sociable of the four groups. Although not overwhelmingly supportive of the hypothesis of Buss and Plomin that team sports are "doubly" social because of the competitive and cooperative nature of team sports as opposed to individual sports, the mean of the subgroup of basketball coaches indicated that a team sport group was the most sociable.

For the trait of impulsivity, the subgroup of golf coaches viewed themselves as being the most impulsive. For this main trait, the mean of the golf coaches were most removed from the mean of the tennis coaches and similar to the

basketball and volleyball coaches.

The means of the subtraits of impulsivity for the basketball and volleyball coaches approximated each other for all the subtraits. The team sport subgroups perceived themselves as being able to delay a response when deemed necessary. These coaches viewed themselves as being more persistent than the golf coaches but not as persistent as the tennis coaches. Similarily, the team sport coaches viewed themselves as making their decisions more quickly than tennis coaches, but not as quickly as golf coaches. On the whole, both the basketball and volleyball coaches regarded themselves as seeking more new and exciting situations than did the tennis coaches and especially the golf coaches.

The golf and tennis coaches were similar on the subtraits of inhibitory control and sensation seeking. These coaches were able to delay an inappropriate response, like the team sport coaches, but did not seek new and different behavior styles as often as the team sport coaches did. The tennis coaches considered themselves to be more persistent in the pursuit of a goal than did the golf coaches.

The means of the golf and tennis coaches for the subtrait of decision time were statistically different. This significant difference indicated that the golf coaches made decisions more quickly than did tennis coaches. Buss and Plomin described the more deliberate person as wanting to "explore all possibilities and forsee all consequences..."

(p. 125). The nature of the game of golf might be seen to warrant more of a need and offer more of an opportunity to make deliberate decisions than would the immediate reaction time needed during a game of tennis. However, the golf coaches in this study made their decisions more impulsively than did the tennis coaches.

The statistically significant difference for the trait of decision time for the tennis and golf coaches must be interpreted with some caution. The low number of subjects in these two groups (i.e., golf - N=10 and tennis - N=7) might have had an affect on the significant difference found between the tennis and golf coaches for the subtrait of decision time. Therefore, this significant difference has been interpreted with reservation throughout this study.

Summary. The examination of the means has provided a profile of the temperament traits possessed by women who coached the sports of basketball, volleyball, golf, and tennis. These women perceived themselves as being in the middle, adaptive range of behaviors for the four main traits and the nine subtraits. However, these coaches tended to be highly sociable and active. They regarded themselves as being average on the continuum of behaviors for the traits of emotionality and impulsivity.

The next section will present the results of the statistical analyses which were computed to investigate any

significant differences between the team sport and individual sport coaches.

MANOVA

This statistical approach gives simultaneous consideration to two or more dependent variables and two or more independent varaibles. MANOVA determines group differences by considering the dependent variables simultaneously as one measure. This means that the multiple dependent variables are converted into a single composite variable by means of linear transformation of the dependent variables.

The results of the MANOVA are presented in Table 10. The MANOVA was computed on the differences between the two main groups of team and individual coaches and among either the four main traits or the nine subtraits. The computed F values were compared with the level of probability and the needed table value at the .05 level.

As can be seen in Table 10, there were no significant differences between any of the groups of coaches and the respective temperament traits when the traits were combined as a single variable. Because there were no significant differences between the temperament traits of team and individual sport coaches, the null hypothesis of no difference was accepted as tenable. Also the null hypothesis of no difference between the temperament traits of basketball and volleyball coaches was accepted. Finally, the null hypothesis of no difference between the golf and tennis coaches was accepted.

Table 10

MANOVA Results for all Comparisons

Group of Coaches	Traits	Degrees Freedom	Computed F	Probability Significance	F Value of .05
Team and Individual	4 main	4,48	0.751	0.562	2.58
Team and Individual	9 sub-traits	10,42	0.688	0.729	2.66
Basketball and Volleyball	4 main	4,31	0.697	0.599	2.68
Basketball and Volleyball	9 sub-triats	10,25	0.511	0.866	2.24
Golf and Tennis	4 main	4.12	0.894	0.496	3.49
Golf and Tennis	9 sub-traits	10,6	2.087	0.190	4.06

While none of the MANOVA comparisons showed statistical differences between the team and individual sport coaches, it must be remembered that the MANOVA converted the four main traits into one dependent variable and the nine subtraits into one dependent variable. Theoretically, there would be no further need to examine the individual ANOVA analyses for significant differences. A significant F for the MANOVA on the other hand would have indicated that there were significant differences in one or several of the multiple variables which had been combined. However, an examination of the individual ANOVA analyses revealed one significant difference. When the individual sport coaches were compared on the nine subtraits, there was a significant difference for the trait of decision time. However, some caution must be exerted when interpreting this difference as the number of subjects in groups of tennis and golf coaches was small. The analysis of variance for the golf and tennis coaches on the trait of decision time was significant even though the MANOVA for the comparison of the golf and tennis coaches on the nine subtraits was not significant. This was attributable to the fact that the MANOVA combined all nine subtraits and the significant difference on the subtrait of decision time was not powerful enough to influence the other eight traits when all traits were combined.

The following analyses have been presented in order to examine the variance between the basketball and volleyball

coaches, between the tennis and golf coaches, and finally, between the team and individual sport coaches. Although the .05 level of statistical significance was used when interpreting differences between the groups of coaches, some limited discussion in the following sections addresses temperamental patterns which might be of interest to subsequent researchers.

The temperament traits possessed by these women coaches have been compared to the results of previous studies on the personality of the coach. However, it is important to remember that the number of studies completed on the personality of the woman coach have been limited. Furthermore, there have been no studies conducted which have measured the temperament traits of coaches.

ANOVA

Basketball and Volleyball Coaches. The team sport groups of basketball and volleyball coaches were compared to determine if any significant differences existed on the four main traits and the nine subtraits. In Table 11, the computed F values were compared with the table values.

When the basketball and volleyball coaches were compared, there were no significant differences on any of the four main traits or the nine subtraits. Therefore, the null hypothesis of no difference between basketball and volleyball coaches was accepted as tenable.

As determined by the means of the basketball and volleyball coaches, team sport coaches were highly sociable and

Table 11

Values of F for Basketball and Volleyball Coaches

Source of Variance	Sum of Squares	Mean Square	Computed F	Probability Significance	F Value of .05
EMOTIONALITY	106.56	59.16	1.801	.188	4.13
General Emotionality	11.25	9.90	1.136	.294	
Fear	.35	8.24	.043	.836	
Anger	28.83	16.73	1.424	.241	
ACTIVITY	29.20	26.18	1.115	.298	
Tempo	2.81	8.52	.330	.596	
Vigor	13.88	8.91	1.558	.220	
SOCIABILITY	14.16	11.62	1.218	.277	
IMPULSIVITY	11.00	51.19	.215	.645	
Inhibitory Control	3.06	9.74	.315	.578	
Persistence	6.05	6.19	.976	.330	
Decision Time	4.51	6.10	.739	.396	
Sensation Seeking	2.11	6.48	.326	.572	

*P .05 level
df = 1,34

active. They were also shown to be on the average, adaptive range for the traits of emotionality and impulsivity.

Ogilvie and Tutko (1966) studied the personality of 64 "top" American male coaches who coached the team sports of basketball, track, football, and baseball. Using the Athletic Motivational Inventory (A.M.I), they determined that these male coaches, like the women coaches in this study, were emotionally stable and sociable. Hendry (1974) compared the personalities of 48 male coaches, broken down into the criterion groups of team, combat, individual, and racket sports, to a group of male physical educators. Hendry, using the Dynamic Personality Inventory, concluded that the male team sport coaches were only "fairly" sociable.

The studies completed on the personality of women coaches have not separated the sample into sport groups. The team sport coaches of this study were the first to be identified as being a distinctive subsample of women who exclusively coached team sports. In conclusion, the coaches of the team sports of basketball and volleyball were found to perceive themselves as being highly sociable and active and possessing behaviors in the adaptive range of emotional and impulsive behavioral styles.

Tennis and Golf Coaches. The individual sport group of golf and tennis coaches were compared to determine if any significant differences existed on the four main traits and

the nine subtraits. In Table 12 the computed F values were compared to the table values.

As can be seen in Table 12, there existed a significant difference between the tennis and golf coaches for the trait of decision time. An examination of the means indicated that the golf coaches made decisions more quickly than tennis coaches. The mean of the golf coaches for the subtrait of decision time was also higher than either the basketball or volleyball coaches.

Hendry (1966), when comparing the personality traits of male coaches and male physical educators found that the personalities of the individual sport coaches were similar to the personalities of the physical educators as measured by the Dynamic Personality Inventory. The results suggested that the physical education teachers and the individual sport coaches were more impulsive than the team sport coaches. However, upon further differentiation, Hendry concluded that racket sport coaches were most similar in their personality traits with physical educators and, therefore, the most impulsive of all the groups of coaches. The results of Hendry's findings do not correlate with the findings of this study in that the tennis coaches of this study were the least impulsive of all groups of coaches. This contradiction might be attributed to several factors.

First, the conceptualization of the trait of impulsivity may differ between the Dynamic Personality Inventory and the

Table 12

Values of F for Golf and Tennis Coaches

Source of Variance	Sum of Squares	Mean Square	Computed F	Probability Significance	F Value of .05
EMOTIONALITY	22.60	45.09	.501	.489	4.54
General Emotionality	20.97	9.55	2.197	.159	
Fear	.84	7.52	.011	.917	
Anger	.21	8.35	.026	.874	
ACTIVITY	.19	29.61	.006	.937	
Tempo	1.70	9.15	.186	.672	
Vigor	3.02	11.79	.257	.619	
SOCIABILITY	1.62	11.15	.146	.707	
IMPULSIVITY	102.35	51.03	2.013	.177	
Inhibitory Control	.62	12.26	.000	1.000	
Persistence	9.08	5.40	1.683	.214	
Decision Time	66.82	8.00	8.345*	.011	
Sensation Seeking	1.15	4.84	.238	.632	

*P .05 level
df = 1,15

EASI III Survey. The similarity of the trait names does not insure the same types of behaviors were being measured. Secondly, there may be a distinction in the impulsive behavior of males and females although Buss and Plomin contended that no gender differences exist for the trait of impulsivity.

There have not been any research studies completed on the personalities of women who coached individual sports. It can be concluded from this study that the women who coached the individual sports of golf and tennis were highly sociable and active, more emotionally stable in their behavioral styles than the team sport coaches of this study. They also perceived themselves as being in the middle, adaptive range for impulsivity. With the exception of the trait of decision time, the null hypothesis of no difference was accepted for the remaining temperament traits for the tennis and golf coaches.

Team and Individual Sport Coaches. The major proposal of this study has been to determine if the temperament traits of women who coached team sports differed from the temperament traits of women who coached individual sports. An examination of the subgroups revealed that the team sport groups of basketball and volleyball coaches did not differ significantly in the temperament traits they perceived themselves as possessing. The individual sport subgroups of tennis and golf coaches were significantly the same with the exception of the subtrait of decision time.

An analysis of variance was computed on the differences between the team sport coaches and the individual sport coaches on the four main traits and the nine subtraits. In Table 13 the computed F values were compared with the table value.

Table 13 revealed that the F values did not approach the level of significance needed. Therefore, the null hypothesis of no difference between women who coached team sports and women who coached individual sports was accepted as tenable.

The results of this study have indicated that both the team and individual sport coaches viewed themselves as being highly sociable and active. The trait of sociability was highly similar for both groups while the individual sport coaches as a group tended to be more active than the team sport coaches as a group especially with regard to the subtrait of vigor. The level of emotionality for both groups showed them to perceive their behavioral styles to be adaptive to the situation. However, a discrepancy does exist for the subtrait of anger. The team sport coaches regarded themselves as being more susceptible to being aroused by noxious stimuli. The main trait of impulsivity was determined to be similar for both groups. The women coaches of this study viewed themselves as being able to delay a response until the behavioral style was appropriate. The

Table 13

Values of F for Team and Individual Sport Coaches

Source of Variance	Sum of Squares	Mean Square	Computed F	Probability Significance	F Value of .05
EMOTIONALITY	50.74	55.24	.919	.560	4.04
General Emotionality	2.55	10.04	.255	.616	
Fear	1.25	7.71	.163	.688	
Anger	32.50	14.08	2.308	.134	
ACTIVITY	22.43	26.81	.836	.364	
Tempo	2.71	11.34	.321	.573	
Vigor	9.53	9.74	.978	.327	
SOCIABILITY	.32	11.34	.003	.958	
IMPULSIVITY	5.00	5.36	.097	.756	
Inhibitory Control	4.71	10.16	.464	.498	
Persistence	.33	6.01	.056	.813	
Decision Time	4.26	7.82	.545	.463	
Sensation Seeking	7.37	5.81	1.268	.264	

*P .05 level
df = 1,51

subjects, while possessing an adaptive impulsive behavioral style, were shown to be persistent in their behavior. However, the variance for the subtrait of sensation seeking revealed that the team sport coaches were more apt to seek new and exciting experiences than the individual sport coaches.

Hendry (1974) compared the personality traits of male coaches, using the criterion groups of team, combat, individual, and racket sports. The results yielded the finding that the more individualized the sport, the greater the psychological difference was from team sport coaches.

Studies by Ogilvie and Tutko (1966; 1968) and Hendry (1972) concluded that the male coaches used in their studies tended to be sociable when compared to the norms of the instrument, but less sociable than physical education teachers. Hendry (1960) found that when comparing male swimming coaches' perceptions of the personality of the "ideal" coach with the profiles of their own personalities, they perceived the "ideal" coach to be more sociable than they were.

Tutko, Elliot, and Berendson (1971) tested over 194 high school and college women physical educators, coaches, and educators using the Jackson Personality Inventory. They found that women in athletics, as compared to the average college woman educator, were more energetic. The limiting factor of this study when comparing the results to the findings of this study was that the women coaches were not

separated from the women physical educators. However, the women coaches of this study were also determined to be a highly active group like the women in Tutko's et al. study.

Brown (1973), using Cattell's 16 PF, compared the personality traits of women coaches, physical educators, and educators. She found that women coaches were less outgoing but more emotionally stable than women educators. When the women coaches were compared to women physical educators, Brown found that the teachers were more outgoing than the coaches. These results correlated with the findings of Hendry's (1974) study using males. The results of this study have shown that women who coached the sports of basketball, volleyball, golf, and tennis were highly sociable and had an average, adaptive level of emotionality.

A comparison of the temperament traits of the team and individual sport coaches has shown them to be similar in the traits they perceived themselves as possessing. The women coaches in this study were shown to be at the mean on the behavioral continuum of impassive to emotional, and thus indicative of an adaptive emotional style when faced with an emotional situation. These subjects were above average for the continuum of behaviors from lethargic to active. Therefore, these coaches perceived themselves as being fast paced and performing their behaviors in a coaching situation with

vigor. On the continuum of behaviors from detached to gregarious, both the team and the individual sport coaches viewed themselves as being highly sociable. Both the team and individual sport coaches approximated the mean on the continuum of behaviors of deliberate to impulsive. The coaches in this study regarded their behavioral style in a coaching situation to be adaptive and, therefore, they would be able to delay an inappropriate response.

Coorelation Coefficients

The second purpose of the study was to compare the temperament traits of the team sport and individual sport coaches with respect to the perceptions of themselves as a person and as a coach. The correlations for each trait were derived from two administrations of the EASI III Survey. The directions of one of the EASI III Surveys instructed the subject to select the answer which she felt was most descriptive of herself as a coach. The other administration directed her to select an answer which she felt was most descriptive of herself as a person.

The purpose of this analysis was to determine the consistency of the perceptions of the subjects as a person and as a coach. For example, when examining the correlation of the team and individual sport coaches on the trait of emotionality, a significant correlation indicated that the subjects viewed themselves the same or used a similar behavioral

style whether they were perceiving themselves as a person or a coach with respect to the trait of emotionality.

Buss and Plomin (1975) have defined temperament as being the inherited aspects of one's personality which are modified to a certain extent by the environment but remained relatively unchanged throughout life. Furthermore, because of the inherited nature of temperament, Buss and Plomin suggested that the behavioral style exhibited as a result of these traits remains relatively stable in different situational patterns. The behavioral style an individual exhibits will be stable and become a characteristic or stylistic way of behaving regardless of the person's perceptions of the situation. Whereas the content of an individual's behavior will change from situation to situation depending on the responses the individual deems appropriate. Buss and Plomin contended that an individual's behavior style varies only when a certain style would be inappropriate. But "In the long run, even intense environmental pressure cannot radically alter a temperament disposition" (Buss and Plomin, 1975, p. 4). The behavioral style can be elevated or depressed but individuals will drift back toward their natural behavioral style.

Therefore, a lack of significance between the views of themselves as a person and as a coach would have indicated that the subjects used a different behavioral style when in

a coaching situation as opposed to a nonccaching situation. Such a conclusion would have suggested possible flaws in the Interaction Temperament Model for behavior.

The correlations for the perceptions of the women coaches as a person and as a coach all reached the .05 level of significance which had been set as the level of acceptance. The correlational matrices will be presented for the correlations of the four main traits and the nine subtraits for the basketball and volleyball coaches, for the golf and tennis coaches, and finally, for the team and individual sport coaches.

Basketball and Volleyball Coaches. The following correlational matrices represented the perceptions of the behavioral styles of the basketball and volleyball coaches as a person and as a coach for the four main traits (Table 14) and the nine subtraits (Table 15).

As indicated in Table 14, the correlation coefficients for the basketball and volleyball subjects on the four main traits were significant at the 105 level. The subjects viewed their behavioral styles to have the highest correlations for the traits of emotionality and sociability. This suggested that with respect to the emotional behavior of the team sport coaches, their level of arousal,

reactivity, and excitability was related in a coaching and non-coaching situation. They were equally outgoing and sought similar affiliative encounters in both types of situations.

The trait of impulsivity was the most diverse although still correlated at the .05 level. The subjects' scores indicated that they were more impulsive in situations in which they perceived themselves as a person.

The correlations in Table 15 revealed that for the nine subtraits, the perceptions of the basketball and volleyball coaches of themselves as a person and as a coach were significant at the .05 level. This group of subjects was most related on their viewpoint of the trait of anger. The behavioral style these coaches exhibited when faced with a noxious stimulus was perceived to be similar whether in a coaching or non-coaching situation. This might suggest that the team sport coaches viewed their manner of displaying displeasure toward a noxious stimulus as being equally appropriate in both types of situations.

The subtrait of decision time resulted in the lowest correlation of team sport coaches' perceptions of themselves as a person and as a coach. An examination of the basketball coaches' and volleyball coaches' scores revealed that they made decisions more quickly when they viewed themselves as a person than as a coach. This finding suggested that the team sport coaches deliberated and considered the

Table 14

Correlations of Basketball and Volleyball Coaches Between Perceptions of Themselves as a Person and as a Coach on the Four Main Traits

N=36	C-Emotionality	C-Sociability	C-Activity	C-Impulsivity	P-Emotionality	P-Sociability	P-Activity	P-Impulsivity
C-Emotionality					84*			
C-Sociability						84*		
C-Activity							76*	
C-Impulsivity								73*
P-Emotionality								
P-Sociability								
P-Activity								
P-Impulsivity								

*Significant .05 level
C = view as coach
P = view as person

consequences more in a coaching situation. The results of this correlational analysis suggested that team sport coaches regarded themselves as less impulsive and taking more time to make a decision in a coaching situation than in a noncoaching situation. See Table 16 for the summary of the subjects' scores on each trait as they perceived their behavioral styles in a coaching and noncoaching situation.

Golf and Tennis Coaches. The following correlation matrices related the correlations for the perceptions of golf and tennis coaches as a person and as a coach on the four main traits (Table 17) and the nine subtraits (Table 18).

Table 17 revealed that the golf and tennis coaches showed significant correlations between their views of themselves as a person and as a coach on the four main traits. All correlations were significant at the .05 level. The golf and tennis coaches were most similar on the trait of activity. These coaches perceived themselves as being vigorous and moving at a similar pace in a coaching and non-coaching situation.

The individual coaches perceived themselves as being the most diverse, yet still significantly related, on the trait of emotionality. Both the tennis and golf coaches saw themselves as displaying a more emotional behavioral style in a coaching situation.

Table 15

Correlations of Basketball and Volleyball Coaches Between Perceptions of Themselves as a Person and as a Coach on the Nine Subtraits

	C-Gnem	C-Fear	C-Anger	C-Sciabty	C-Tempo	C-Vigor	C-Inhbcrt	C-Prsist	C-Dctime	C-Sneek	P-Gnem	P-Fear	P-Anger	P-Sciabty	P-Tempo	P-Vigor	P-Inhbcrt	P-Prsist	P-Dctime	P-Sneek
C-Gnem											80*									
C-Fear												64*								
C-Anger													86*							
C-Sciabty														84*						
C-Tempo															71*					
C-Vigor																72*				
C-Inhbcrt																	73*			
C-Prsist																		73*		
C-Dctime																			60*	
C-Sneek																				63*
P-Gnem																				
P-Fear																				
P-Anger																				
P-Sciabty																				
P-Tempo																				
P-Vigor																				
P-Inhbcrt																				
P-Prsist																				
P-Dctime																				
P-Sneek																				

*Significant .05 level C = view as coach P = view as person

Table 16

Summary of Means for the Perceptions of Basketball and Volleyball Coaches as a Coach and as a Person

Trait	Mean of Trait	Groups			
		Basketball		Volleyball	
		Coach	Person	Coach	Person
EMOTIONALITY	37.5	36.90	37.90	33.93	33.93
General Emotionality	12.5	13.76	14.00	12.37	12.62
Fear	12.5	10.70	11.65	10.51	10.75
Anger	12.5	12.70	12.25	11.06	10.56
ACTIVITY	25.0	35.00	35.30	33.19	33.12
Tempo	12.5	17.00	17.00	16.44	15.81
Vigor	12.5	18.00	18.20	16.75	17.31
SOCIABILITY	12.5	19.45	19.15	18.19	18.00
IMPULSIVITY	50.0	49.30	51.20	49.31	50.00
Inhibitory Control	12.5	13.90	14.50	13.31	13.00
Persistence	12.5	8.05	8.45	8.87	10.06
Decision Time	12.5	13.65	14.40	12.94	13.62
Sensation Seeking	12.5	13.70	13.85	14.19	13.31

Table 17

Correlations of Golf and Tennis Coaches Between Perceptions of Themselves as a Person and as a Coach on the Four Main Traits

N=17	C-Emotionality	C-Sociability	C-Activity	C-Impulsivity	P-Emotionality	P-Sociability	P-Activity	P-Impulsivity
C-Emotionality					83*			
C-Sociability						88*		
C-Activity							90*	
C-Impulsivity								83*
P-Emotionality								
P-Sociability								
P-Activity								
P-Impulsivity								

*Significant .05 level
C = view as coach
P = view as person

An examination of Table 18 indicated that the correlation coefficients for the golf and tennis coaches on the nine subtraits were statistically significant. All of the traits were significantly interrelated at the .05 level. The perceptions of the golf and tennis coaches of their behavioral styles were most similar with respect to the traits of vigor and decision time. The correlation for the subtrait of vigor correlated with the correlation for the main trait of activity. They perceived themselves as performing with the same intensity in both situations. Unlike the team sport coaches, the golf and tennis coaches perceived themselves as planning with the same amount of deliberation in both types of situations.

The matrix of the nine subtraits (see Table 18) showed these individual sport coaches to be most diverse in their perceptions of themselves as a person and a coach on the subtraits of fear and sensation seeking. The means of these coaches revealed that while the golf coaches exhibited a more fearful behavioral style in a coaching situation, tennis coaches showed a more apprehensive style in a non-coaching situation. With regard to sensation seeking, golf coaches sought new and exciting behavioral styles in a non-coaching situation as opposed to tennis coaches who sought this type of behavioral style in a coaching situation.

Overall, the tennis and golf coaches exhibited similar behavioral styles in both a coaching and non-coaching situa-

Table 18

Correlations of Golf and Tennis Coaches Between Perceptions of Themselves as a Person and as a Coach on the Nine Subtraits

	C-Gnem	C-Fear	C-Anger	C-Sciabty	C-Tempo	C-Vigor	C-Inhbcrt	C-Prsist	C-Dctime	C-Sneek	P-Gnem	P-Fear	P-Anger	P-Sciabty	P-Tempo	P-Vigor	P-Inhbcrt	P-Prsist	P-Dctime	P-Sneek
C-Gnem											83*									
C-Fear												62*								
C-Anger													65*							
C-Sciabty														88*						
C-Tempo															86*					
C-Vigor																92*				
C-Inhbcrt																	78*			
C-Prsist																		83*		
C-Dctime																			92*	
C-Sneek																				62*
P-Gnem																				
P-Fear																				
P-Anger																				
P-Sciabty																				
P-Tempo																				
P-Vigor																				
P-Inhbcrt																				
P-Prsist																				
P-Dctime																				
P-Sneek																				

*Significant .05 level
C = view as coach

tion. Golf coaches perceived themselves as most often displaying a fearful behavioral style in a coaching situation than did tennis coaches. Golf coaches viewed themselves as more readily accepting a new behavioral style in a noncoaching situation than tennis coaches who would do so in a coaching situation. See Table 19 for a summary of the means of the golf and tennis coaches as they viewed themselves as a person and as a coach.

Team and Individual Sport Coaches. The following correlation matrices reflected the correlations for the team sport coaches and the individual sport coaches combined as they perceived themselves as a person and as a coach on the four main traits (Table 20) and the nine subtraits (Table 21).

Table 20 revealed that the correlation coefficients for the women coaches in this study were significant when comparing the four main traits. All four traits were significantly correlated at the .05 level. These subjects found their behavioral styles to have the highest correlation for the trait of sociability. This finding suggested that these women perceived themselves as being a sociable group regardless if coaching a team sport or an indivdual sport or in a coaching or noncoaching situation. They seek out other individuals and prefer to interact with others as opposed to isolating themselves.

Although still significantly interrelated, this group of subjects was most diverse on the trait of impulsivity.

Table 19

Summary of Means for the Perceptions of Golf and Tennis Coaches as a Coach and as a Person

Trait	Mean of Trait	Groups			
		Tennis		Golf	
		Coach	Person	Coach	Person
EMOTIONALITY	37.5	35.14	33.14	32.60	31.60
General Emotionality	12.5	13.57	13.14	11.70	11.90
Fear	12.5	10.86	11.14	10.70	10.30
Anger	12.5	10.43	8.85	10.20	9.40
ACTIVITY	25.0	35.72	37.14	35.50	35.80
Tempo	12.5	16.86	17.57	17.60	17.20
Vigor	12.5	18.86	19.57	17.90	18.60
SOCIABILITY	12.5	18.57	18.28	19.20	19.60
IMPULSIVITY	50.0	45.71	45.00	50.20	51.70
Inhibitory Control	12.5	13.00	12.00	12.90	13.10
Persistence	12.5	7.71	8.00	9.20	9.50
Decision Time	12.5	11.57	11.85	15.40	15.10
Sensation Seeking	12.5	13.43	13.14	13.00	14.00

Table 20

Correlations of Team and Individual Sport Coaches Between Perceptions of Themselves as a Person and as a Coach on the Four Main Traits

	C-Emotionality	C-Sociability	C-Activity	C-Impulsivity	P-Emotionality	P-Sociability	P-Activity	P-Impulsivity
C-Emotionality					84*			
C-Sociability						85*		
C-Activity							81*	
C-Impulsivity								76*
P-Emotionality								
P-Sociability								
P-Activity								
P-Impulsivity								

*Significant .05 level
C = view as coach
P = view as person

An examination of the scores indicated that the basketball, volleyball, and golf coaches viewed themselves as being more impulsive in a noncoaching situation, whereas tennis coaches regarded themselves as more impulsive in a non-coaching situation.

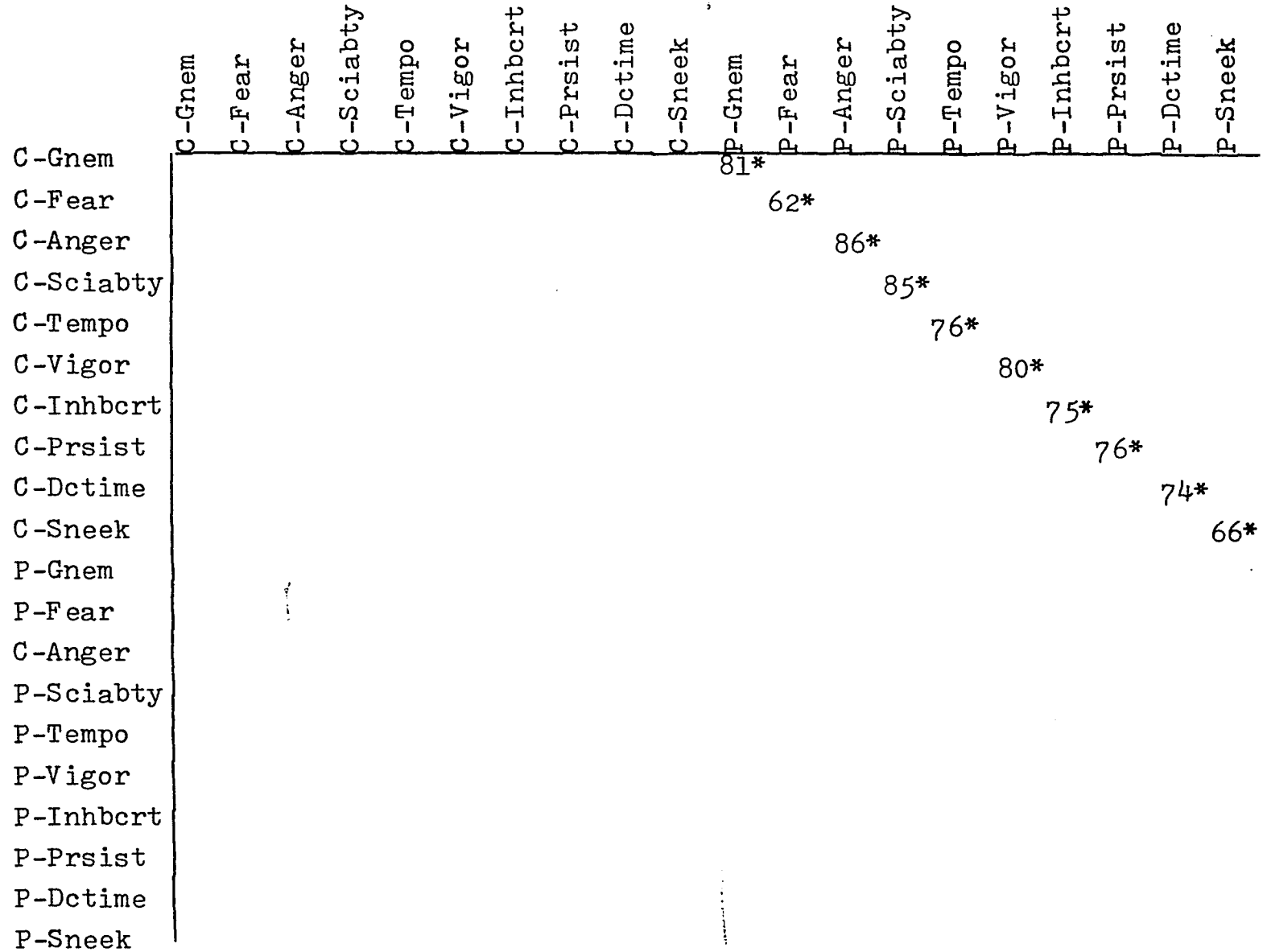
Table 21 revealed that the correlations coefficients for the team and individual sport subjects on the nine subtraits were all significant. The subtrait of anger had the highest correlation. The behavioral styles of these women were similar when faced with a noxious stimulus in either a coaching or noncoaching situation. The subtrait of sensation seeking proved to be the most diverse of the nine subtraits for these subjects. However, as indicated by the subjects' scores, a divergence is indicated among the subgroups of coaches. The basketball and tennis coaches were more adventuresome in their behavioral styles in a coaching situation while golf coaches perceived themselves as seeking new and exciting behavioral styles in a noncoaching situation. Volleyball coaches perceived themselves as displaying a new behavioral style equally as often in a coaching as a noncoaching situation. See Table 22 for a summary of the scores of the team and individual sport coaches as they viewed themselves as a person and as a coach.

Summary

In summary, the results of this analysis revealed that there were no significant differences in the temperament

Table 20

Correlations of Team and Individual Sport Coaches Between Perceptions of Themselves as a Person and as a Coach on the Nine Subtraits



*Significant .05 level C = view as coach P = view as person

Table 22

Summary of Means for the Perceptions of the Team and Individual Sport Coaches as a Coach and as a Person

Trait	Mean of Trait	Groups			
		Team		Individual	
		Coach	Person	Coach	Person
EMOTIONALITY	37.5	35.58	36.13	33.76	32.32
General Emotionality	12.5	13.00	13.38	12.53	12.41
Fear	12.5	10.61	11.25	10.94	10.64
Anger	12.5	11.97	11.50	10.29	9.17
ACTIVITY	25.0	34.19	34.33	35.59	36.35
Tempo	12.5	16.75	16.47	17.24	17.35
Vigor	12.5	17.44	17.86	18.35	19.00
SOCIABILITY	12.5	18.89	18.63	18.94	19.05
IMPULSIVITY	50.0	49.30	50.66	48.65	48.94
Inhibitory Control	12.5	13.64	13.83	13.00	12.64
Persistence	12.5	8.41	9.16	8.58	8.88
Decision Time	12.5	13.33	14.05	13.94	13.76
Sensation Seeking	12.5	13.92	13.61	13.12	13.64

traits of women who coached the team sports of basketball and volleyball and the individual sports of golf and tennis. However, the data did reveal that the individual sport coaches did differ significantly with respect to the subtrait of decision time. But this significant difference was interpreted with some reservation because of the small number of subjects in the groups of tennis and golf coaches.

The findings of this study have determined that the temperament traits of the team and individual sport coaches mirrored each other. The behavioral styles of these women with respect to the temperament traits of emotionality, activity, sociability, and impulsivity indicated that these coaches could be described as one population because of the similarities found.

Buss and Plomin (1975) have contended that individuals select environments with which they were temperamentally matched because a mismatch could lead to strain. They suggested that "temperament may determine which environments are selected" (Buss and Plomin, 1975, p. 5). It might be hypothesized that the women in this study have chosen to be in a coaching environment, and because the differences in the environments of a team sport and an individual sport were not diverse enough to cause a difference in the behavioral styles, the temperament profiles of team and individual sport coaches were similar.

The correlational analysis for the perceptions of the subjects of themselves as a person and as a coach indicated

that on all of the traits these women viewed themselves as having similar behavioral styles in a coaching and non-coaching situation. The temperament of an individual is conceptualized as being similar regardless of the situation. Therefore, the perceptions of these women whether they were viewing themselves as a person or as a coach should have been highly correlated. A lack of relationship would have indicated that they projected a different behavioral style in a coaching than in a noncoaching situation.

Temperament, according to Buss and Plomin, is only limitedly affected by the environment or stimuli of any situation. Therefore, a lack of relationship between the perceptions of the subjects as a person and as a coach would have indicated that the environment of a particular situation was, in fact, influencing the subjects' behavioral styles. The results of this correlational analysis supported Buss' and Plomin's conception that the environment only minimally affected the perceptions of these coaches when they regarded themselves as a person and as a coach.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to determine any significant differences in the temperament traits possessed by women who coached team sports and women who coached individual sports as they viewed themselves as a coach. A second purpose of the study was to determine and compare the temperament traits of the women coaches with regard to perceptions of themselves as a person and as a coach. The basis for investigation and interpretation of the temperament traits of these women coaches was determined by the Temperament Theory of Personality Development by Buss and Plomin (1975).

The subjects for this study were 53 women who coached the team sports of basketball (N=20) and volleyball (N=16) and the individual sports of golf (N=10) and tennis (N=7) on the intercollegiate level. The subjects coached teams which participated in the 1975-1976 A.I.A.W. Regional Tournament. The final sample represented Division I and Division II in Regions 2, 3, 5, 6, 7, 8, and 9 of the A.I.A.W.. The women in this study had coached on the intercollegiate level for one year or more and had, throughout

their professional coaching career, exclusively coached a team sport or an individual sport.

The research instrument used in this study was a self-report temperament scale, the EASI III Temperament Survey, constructed by Buss and Plomin. The EASI III was composed of 50 items with a 5-point response scale of "rarely" to "almost always". Two forms of the EASI III were used. The two surveys differed only in the order in which the statements appeared. Along with an introductory letter, an Information Questionnaire was sent to be filled out by each subject. The purpose of the Information Questionnaire was to gather biographical data for selection of the final sample. This Questionnaire was also used as a tool to provide descriptive data for the sample.

The University of Rochester Weighted ANOVA System (URWAS) program was used for the statistical analysis to determine any significant differences in the temperament traits possessed by women who coached team sports and women who coached individual sports. A one-way ANOVA and MANOVA were computed on the four main temperament traits and on the nine subtraits for the groups of team sport coaches and individual sport coaches; for volleyball and basketball coaches; and for golf and tennis coaches. The Statistical Analysis System (SAS '76) was used to determine the correlation coefficients for the comparison of the perceptions

of the coaches as they viewed themselves as a person and as a coach.

The Temperaments. The temperament traits, as determined by Buss and Plomin, were the criterion measures by which the various groups of coaches were measured and compared. The Interaction Temperament Model by Buss and Plomin suggested that the total personality was comprised of two aspects: the temperament traits which accounted for stylistic, broad personality dispositions and specific behaviors or responses which were totally learned through developmental and experiential processes. The style of one's behavior is determined by the inherited temperament traits, whereas the content or specific responses of one's behavior are acquired traits. According to Buss and Plomin, an individual's temperament or behavioral style will remain relatively stable in diverse situational patterns and throughout life, but the content of behavior is diverse because the individual is continually acquiring new behaviors and perceives various responses as being most appropriate in different situational patterns.

Temperament is thought of as an inherited range of behavior for a particular trait which is affected by development, but only within the limited range which is inherited. Because of the constitutional nature of temperament, the behavioral style of an individual is relatively stable.

The individual's temperament may be somewhat affected by the particular environment or situation, but temperament also affects or structures the perceptions and reactions of the individual to that particular situation.

The temperament traits of emotionality, activity, sociability, and impulsivity were the four main traits used for the analysis. The trait of emotionality is equivalent to intensity of reaction. The emotional person is easily aroused and reacts intensely. The person high in this temperament has a low threshold for an emotional response and so has more such responses. Also, the amplitude of the response is greater and extends to a wider variety of situations. The trait of emotionality is composed of the subtraits of general emotionality (distress), fear, and anger. Thus, a person labeled emotional is likely to show an excess of these aspects.

The trait of activity is defined as energy output. Individuals who score high on the temperament of activity are typically busy and in a hurry. They like to keep moving and seem tireless in their behavior. Their speech and actions are vigorous. The trait of activity is composed of the subtraits of vigor and tempo. A very active person expends energy in vigorous activity and maintains a quicker tempo. The very active person is likely to open a door with more force and to move through it quickly.

The third temperament, sociability, consists mainly of affiliativeness or the strong desire to be with others. Sociability is the only trait which has a directional component: seeking other persons. Individuals who score high on the trait of sociability tend to work and play in groups. These individuals find the interaction and presence of others more rewarding than the lack of social interaction.

The trait of impulsivity is defined as the tendency to respond quickly rather than inhibiting a response. A person who scores high on the trait of impulsivity would submit to rather than resist urges, impulses, and motivational states. Such people also prefer to respond immediately as opposed to planning before making a move. The trait of impulsivity is composed of the four subtraits or aspects of inhibitory control, persistence, decision time, and sensation seeking. Individuals who score high on the trait of impulsivity will be less able to inhibit or delay a prohibited response. Such individuals will not be persistent in the pursuit of an activity and also will not be able to tolerate boredom as easily, thus causing them constantly to seek something new and exciting. When faced with a decision, impulsive individuals crave spontaneous action and lack the patience to make detailed plans.

The following summary was concerned with the findings of the study. The summarization of the Information Questionnaire provided a general profile of the subjects being

studied. The results of the analysis of variance described the behavioral styles of these women as they perceived themselves as coaches. Finally, the correlational analysis revealed the comparisons of the perceptions of these women as a person and as a coach on the four main traits and the nine subtraits.

Findings

The Information Questionnaire. The Information Questionnaire was used to gather biographical data for the final selection of the subjects. This Questionnaire was also useful in providing a biographical sketch of the sample.

An examination of the Information Questionnaire revealed that although the basketball coaches were younger than either of the individual sport groups of coaches, the basketball coaches had been coaching on the intercollegiate level for more years. The volleyball coaches were the youngest group and had coached the fewest number of years on the intercollegiate level.

The team sport coaches tended to hold higher terminal degrees than the individual sport coaches. The majority of team sport coaches were also employed as assistant professors while the rank of instructor was held by the highest percentage of individual sport coaches. The duties for the majority of team and individual sport coaches included coaching and teaching. Tennis coaches were most often employed

solely as a coach. The majority of all the coaches had not been employed to coach at a level other than the intercollegiate level. This finding might be due to the fact that most high school coaches coach a number of sports and the subjects in this study had exclusively coached a team or individual sport.

When the coaches were asked about their participation in interscholastic and intercollegiate athletics, the individual sport coaches, especially the tennis coaches, indicated they had participated in interscholastic competition more often than the team sport coaches. Experience with interscholastic competition was least often found among the basketball coaches. However, some of the basketball coaches indicated that interscholastic sports had not been available to them when they were players. On the intercollegiate level, the team sport coaches indicated the highest percentage of participants in athletic competition. Of interest is the fact that the volleyball coaches, who had the highest percentage of intercollegiate participants, also had the highest percentage of coaches who did not participate in college in the sport they were now coaching.

Finally, the majority of both the team and individual sport coaches indicated they would elect to coach the sport they were coaching. They further said they were happy and satisfied with their coaching assignment.

Analysis of Variance. The results of this study have shown that women who coach team sports and women who coach individual sports do not differ with respect to their temperament. The temperament traits of the coaches of the team sports of basketball and volleyball were also undifferentiated. However, the temperament traits of the individual sport coaches of golf and tennis did show one significant difference on the subtrait of decision time. It might be hypothesized, therefore, that these women coaches do not differ with respect to their behavioral styles demonstrated when they view themselves as a coach.

However, the results of this study have been instrumental in explaining and describing, to a certain extent, the behavioral styles of the women coaches in this study. The description of the temperament traits was somewhat limited due to the fact that each temperament trait was thought of as being on a continuum of extreme behaviors with the middle range of the continuum being undifferentiated with respect to the behaviors which occupy this middle range. Buss and Plomin have identified the middle range of the continuum as being representative of behavioral styles which are adaptive to various situational patterns. Buss and Plomin have identified the extremes of the continuum of each trait as possibly being indicative of maladaptive behaviors.

The women coaches of this study were, according to the

Temperament Theory of Buss and Plomin, shown to perceive themselves as possessing temperament traits which were in the middle, adaptive range of behavioral styles. An examination of the analyses revealed that the following description of the temperament profiles of women who coached team sports and women who coached individual sports.

The means of the team and individual sport coaches for the trait of emotionality and the subtraits of general emotionality, fear, and anger approximated the means for those traits. This finding indicated that these women perceived themselves as exhibiting an emotional behavioral style between the extreme behaviors of emotional to impassive. The relative position of the means for these subjects was indicative of an adaptive emotional style which might be projected as being emotionally stable behavior.

The means of the subtrait of anger indicated that the basketball and volleyball coaches regarded themselves as displaying their annoyance with a noxious stimulus more often than did the individual sport coaches.

Overall, these women perceived themselves as possessing an adaptive emotional style of behaving. The number and intensity of emotional outbursts would be within the normal range of behavioral styles. These women coaches would not become overly emotional, show an excess of unwarranted fear or become excessively angry.

The variance between the team sport and individual sport coaches for the trait of activity was negligible. While the temperament of activity possessed by these subjects was in the middle, adaptive range on the continuum of behavioral styles from active to lethargic, the means indicated that these women coaches were above average for this trait. The means for the subtraits of tempo and vigor demonstrated that the volleyball coaches perceived themselves as having the least fast-paced and intense behavioral style of all of the coaches. Tennis coaches projected their behavioral style as being the most vigorous of all the groups, while golf coaches viewed themselves as performing their behaviors with a faster pace than any of the groups of coaches.

The above average means for the trait of activity suggested that the behavioral styles of these coaches were performed with intensity and at a quick pace. Buss and Plomin contended that the "Activity temperament is undoubtedly an important determiner of interest and vocation" (p. 53). The nature of sport and the intensity and pace involved in coaching would seem to warrant that a coach possess a high activity temperament.

Previous research studies on the personality of the coach (Hendry, 1960; 1974; Ogilvie and Tutko, 1966; 1968; Brown, 1973) have determined that coaches are gregarious.

The coaches in this study perceived themselves as being highly sociable, seeking the presence of others, and preferring to be with other people. However, the hypothesis of Buss and Plomin that "Other things being equal, we expect the sociable person to prefer team sports to individual sports because team sports are doubly social through the give-and-take of competition and the comaraderie and group feeling of cooperation" was not totally supported (p. 89) The individual sport coaches, as a whole, were found to be more sociable than team sport coaches. However, the subgroup of basketball coaches was shown to be the most sociable group.

The means of the fourth temperament, impulsivity, indicated that the team sport and individual sport coaches were, as a whole, similar. In relation to the behavioral styles on the continuum of impulsive to deliberate, these women were in the middle, adaptive range of this trait. In essence, this indicated that these women were able to delay gratification of a particular need or incentive if the particular response was perceived as inappropriate at that time. The level of impulsiveness did not, however, indicate that these responses would be delayed indefinitely.

Although the means for the trait of impulsivity for the main groups of team and individual sport coaches were similar, an examination of the means for the subgroups of

basketball, volleyball, golf, and tennis coaches on the subtraits indicated some specific directions with regard to the coaches' overall impulsive behavior.

The tennis coaches were seen to be the least impulsive of the groups of coaches. The tennis coaches were the most persistent in their behavior and deliberate in their decisions. Volleyball coaches expressed the belief that of all the groups they would most often seek a new and exciting behavioral style whereas golf coaches would be least likely to venture a new behavioral style.

The largest discrepancy for the trait of impulsivity existed between the tennis and golf coaches which yielded a significant difference for these two groups on the subtrait of decision time. This significant difference indicated that golf coaches made decisions more quickly whereas tennis coaches were more apt to "explore all possibilities and forsee all consequences".

In summary, the results of the analysis of variance revealed that there were no significant differences in the temperament traits of women who coached team sports and women who coached individual sports. However, the data did reveal that for the individual sport coaches, the tennis coaches were more deliberate in the time taken to make a decision than were the golf coaches. This difference was interpreted with some caution as the statistical difference

might have been influenced by the small number of subjects in the two groups.

The temperament traits of the women coaches in this study mirrored each other even though they coached different sports. These women coaches possessed traits which were found to be in the middle, adaptive range of behavioral styles for the four temperament traits. However, within this middle, adaptive range, these women tended to be highly sociable and active in their behavioral styles. The behavioral styles for both the team and individual sport coaches was suggestive of an adaptive level of emotionality and an average ability to delay impulsive urges. Rather than describing any significant differences between team and individual sport coaches, it has seemed more appropriate to describe the behavioral styles of these two groups as mirroring each other and, therefore, indicative of an overall coaching style for women coaches.

Correlational Analysis. The results of the correlational analysis of the perceptions of the subjects as a person and as a coach indicated that on the four main traits and the nine subtraits these women viewed themselves as being significantly the same in a coaching and noncoaching situation. The behavioral style of an individual is conceptualized by Buss and Plomin as being similar in various situational patterns because of the inherited nature

of temperament. Temperament is modified within a limited reaction range by the environment but remains relatively unchanged throughout life.

The correlation coefficients for the four main traits were all highly significant (.0001 level). However, it is interesting to note that the coefficient for the trait of activity was .90 for the golf and tennis coaches and .76 for the basketball and volleyball coaches. This would indicate that, although both correlations were significant, the level of activity for the golf and tennis coaches was more similar in a coaching and noncoaching situation. The basketball and volleyball coaches perceived their behavioral style to be performed more vigorously and to involve a more rapid tempo in a non-coaching situation. This finding would seem to indicate that team sport coaches viewed the coaching environment somewhat differently from a noncoaching environment than did the individual sport coaches with regard to the temperament of activity. The correlations of the subtraits for the groups of basketball and volleyball and golf and tennis were suggestive of some distinction in the perceptions of themselves as a person and as a coach even though the correlations for all the subtraits for all groups were significant. The most diverse coefficient between the team and individual sport coaches was found for the trait of decision time. The golf and tennis coaches (.92) saw themselves as making a decision in the same amount

of time in both a coaching and noncoaching situation. Whereas the correlation for the basketball and volleyball coaches (.60) and an examination of these coaches' scores revealed that they more often made decisions with more deliberation in a coaching situation. There was also some disparity for the team and individual sport coaches for the subtrait of vigor. The golf and tennis coaches (.92) viewed their behavioral styles as being similar in a coaching and noncoaching situation for the subtrait of vigor while the basketball and volleyball coaches (.72) felt they performed with a more vigorous behavioral style in a noncoaching situation.

The correlations for the traits of fear and sensation seeking, although still highly correlated, were the lowest indicating that the team and individual sport coaches viewed the exhibition of an unwarranted fearful behavioral style and their tendency to seek a new and exciting behavioral style as being different in a coaching and noncoaching situation.

The behavioral style an individual exhibits will be stable and become a characteristic or stylistic way of behaving for that individual, whereas the content of an individual's behavior will change from situation to situation depending on the responses deemed desirable. Buss and Plomin contended that an individual's behavioral style varies only when a certain style would be viewed as inappropriate. The

behavioral style can be elevated or depressed when the characteristic behavioral style for an individual is deemed inappropriate but Buss and Plomin concluded that "intense environmental pressure cannot radically alter temperamental dispositions" (p. 4). Therefore, the high interrelationship which was found between the perceptions of these women as a person and as a coach reinforced the hypothesis of Buss and Plomin that one's behavioral style is relatively stable in diverse situational patterns.

Suggestions for Further Research

The results of this study have shown coaches of the team sports of basketball and volleyball and the individual sports of golf and tennis to be highly similar in the temperament traits they possessed. No distinctions can therefore be made between the behavioral styles of coaches in these sports with the exception of the significant difference found between golf and tennis coaches for the subtrait of decision time.

It would be desirable to compare women coaches to a group of women educators. The environments in which these two groups exist are seemingly different and may in fact require a different behavioral style. A comparison of women coaches with women physical educators who have never coached might possibly reveal differences in temperament which have prompted women in the subject matter area of sport to choose a highly competitive aspect of this

profession and others not to become involved.

Another area for future research concerning the temperament traits of coaches has been proposed by Singer (1972) and Hendry (1972). Singer proposed that "Because some athletes in turn become coaches it can be hypothesized that coaches in various sporting areas will mirror to some extent the temperament characteristics of the athletes in those sports" (p. 192). Hendry has suggested that the idea of a closed conceptual system where successful athletes become coaches and perpetuate the sport stereotype. He felt that particular types of sporting environments met the needs and reinforced the person. Therefore, there would be some mirroring of the athlete's personality in the coaches. If there is in fact a mirroring of the athlete's and coach's personality, it might be feasible to determine if the temperament traits of the athletes and coaches in various sports were similar. This would coincide with the hypothesis of Buss and Plomin that individuals choose environments for which they are temperamentally suited.

It might be speculated that the environment of the sports that were chosen for this study, namely basketball, volleyball, golf, and tennis, were not diverse enough to be indicative of any differences in the temperament traits of the women who coached these sports. A comparison of the coaches of more diverse sport environments and culturally

stereotyped orientations might result in differences. The coaches of a culturally defined and accepted sport such as tennis might be compared with women coaches of a combat sport such as rugby or ice hockey which have been identified traditionally as male-oriented.

Although Buss and Plomin contended that the only gender differences in the behavioral styles of men and women were those differences which have been culturally stereotyped, it might be proposed that the temperament traits of men and women coaches would result in different behavioral styles. The environment surrounding men's and women's athletics might be diverse enought to increase the possibility of attracting different behavioral styles although these differences might be solely influenced by cultural stereotypes. Nevertheless, a comparison of male and female coaches of the same sport might reveal temperamental differences.

Finally, it might be suggested that there are, in fact, no differences in the temperament traits of women coaches as compared to any criterion group. The temperament traits possessed by women coaches might be as individualized as are the acquired traits they possess. The results of this study have demonstrated that there were no differences in the temperament traits of the subjects who coached team sports and subjects who coached individual sports but the results have projected a similar behavioral style for these coaches. However, the significant difference found between the golf

and tennis coaches for the subtrait of decision time is a tempting morsel to make an investigator wonder if other differences might not be found between other groups of coaches if precautions were taken with regard to the number of subjects in the criterion groups.

Conclusion

An individual's personality is deemed as an important variable in determining behavior in a situation. An act that an individual performs is composed of two aspects: what the behavior is--the content, and how the response is made--the style. These two aspects, content and style, compose every behavior regardless of the situation.

Sport personology originated because of a desire to describe, explain, and predict behavior in a sport situation. But much of the personality research in sport has centered on the idea of describing, explaining, and predicting the content of behavior in a sport situation and has excluded the aspect of style or how the behavior is performed. The content of the responses an athlete or coach makes in a specific situation is determined to a great extent by the stimuli of the situation and the individual's perception of those stimuli. The perceptions by which one interprets a situation are a result of development and learning. Throughout one's life the content of behavior acquired becomes as diverse and changing as the multitude of situations that can be encountered. However, an individual's behavioral style

is assumed to remain relatively stable throughout life and in diverse situational patterns. Unlike the content of behavior, the environmental factors or stimuli of a particular situation have a relatively limited influence on the individual's behavioral style.

Sport personologists attempting to describe, explain, and predict the content of behavior in a sport situation have been unproductive because of the diversity which exists in every individual's behavioral content and the influence of the environment on the content of behavior. Therefore, the most any research on the personality of athletes and coaches in a sport situation has been able to do was to describe and explain the specific content of the behavior using trait labels.

The concept of temperament as the inherited aspects of personality was chosen for use in this study because temperament traits represent behavioral style, rather than the content of behavior. Because one's behavioral style as identified by the temperament traits is relatively stable throughout life and in diverse situational patterns, the investigation negates, to a certain extent, the influences of the environment or stimuli of a particular situation. Therefore, how one responds to a situation rather than the specific content of the behavior was measured using women who coached team sports and women who coached individual sports.

Buss and Plomin suggested that individuals chose a profession with which they were temperamentally suited. A mismatch of temperament and environment were projected by Buss and Plomin as causing a strain because the individual's temperament cannot be radically altered for any length of time. The environment of sport situations possesses certain differences and commonalities with all other situations. Within the realm of sport, the nature of a specific sport or classification of sports, such as team and individual, also possesses certain differences and commonalities. Women who have chosen to coach a specific sport have done so for a variety of reasons. As identified from the biographical data on the Information Questionnaire used in this study, the women coaches indicated their preferences for coaching a team or individual sport were partially influenced by their knowledge and experience in the sport. These women also identified other variables dealing with the specific environment of the sport as having influenced their choice.

The descriptive data from the Information Questionnaire revealed that many of the team sport coaches felt that they preferred team sports because of a "bigger challenge in handling a group of people and attempting to coordinate the efforts of the players into a cooperative effort" found in team sports. Whereas having a preference for "liking to work on a one-on-one, self-directed basis" was often mentioned by the individual sport coaches.

The identification of the temperament traits of team and individual sport coaches has revealed that these coaches do not differ significantly in their behavioral styles. Therefore, any prediction that the behavioral styles of women who coach team sports differ from women who coach individual sports has not been demonstrated.

However, the results have been significant in explaining and describing the behavioral styles of basketball, volleyball, golf, and tennis coaches in this study. As a group, the team and individual sport coaches were highly similar in the temperament traits they possessed. The behavioral styles of this group of coaches have shown them to be highly sociable and active. They have also been shown to possess an emotionally stable behavior style and they can delay responses until such behaviors would be deemed appropriate. Furthermore, the comparison of the perceptions of these coaches of their behavioral styles as a person and as a coach yielded significant correlations. The perceptions of the emotional, active, social, and impulsive behavioral styles of these women in a coaching and non-coaching situation were found to be similar, lending credence to the Interaction Temperament Theory of Buss and Plomin.

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APPENDIX A

1975-1976 A.I.A.W. REGIONAL REPRESENTATIVES AND STATES IN THE A.I.A.W. REGIONS

Regional Representatives

Region 1. Carole Musher
State University College
Cortland, N.Y. 13045

Region 2. Mary Roland Griffin
Winthrop College
Rock Hill, South Carolina 29733

Region 3. Marlene Furnell
Florida State University
Tallahassee, Florida 33144

Region 4. Karen King
University of Tulsa
Tulsa, Oklahoma 74104

Region 5. Frances Koenig
Central Michigan University
Mt. Pleasant, Michigan 48858

Region 6. Mary Lyon
Central Missouri State
Warrensburg, Missouri

Region 7. Gloria Roderiguez
University of Northern Colorado
Greeley, Colorado 80639

Region 8. Nettie Morrison
Whittier College
Whittier, California 90605

Region 9. Catherine Green
University of Washington
Seattle, Washington 98196

Department of HPER
UNC-Greensboro
March 2, 1977

Carole Musher
State University College
Cortland, N.Y. 13045

Dear Carole,

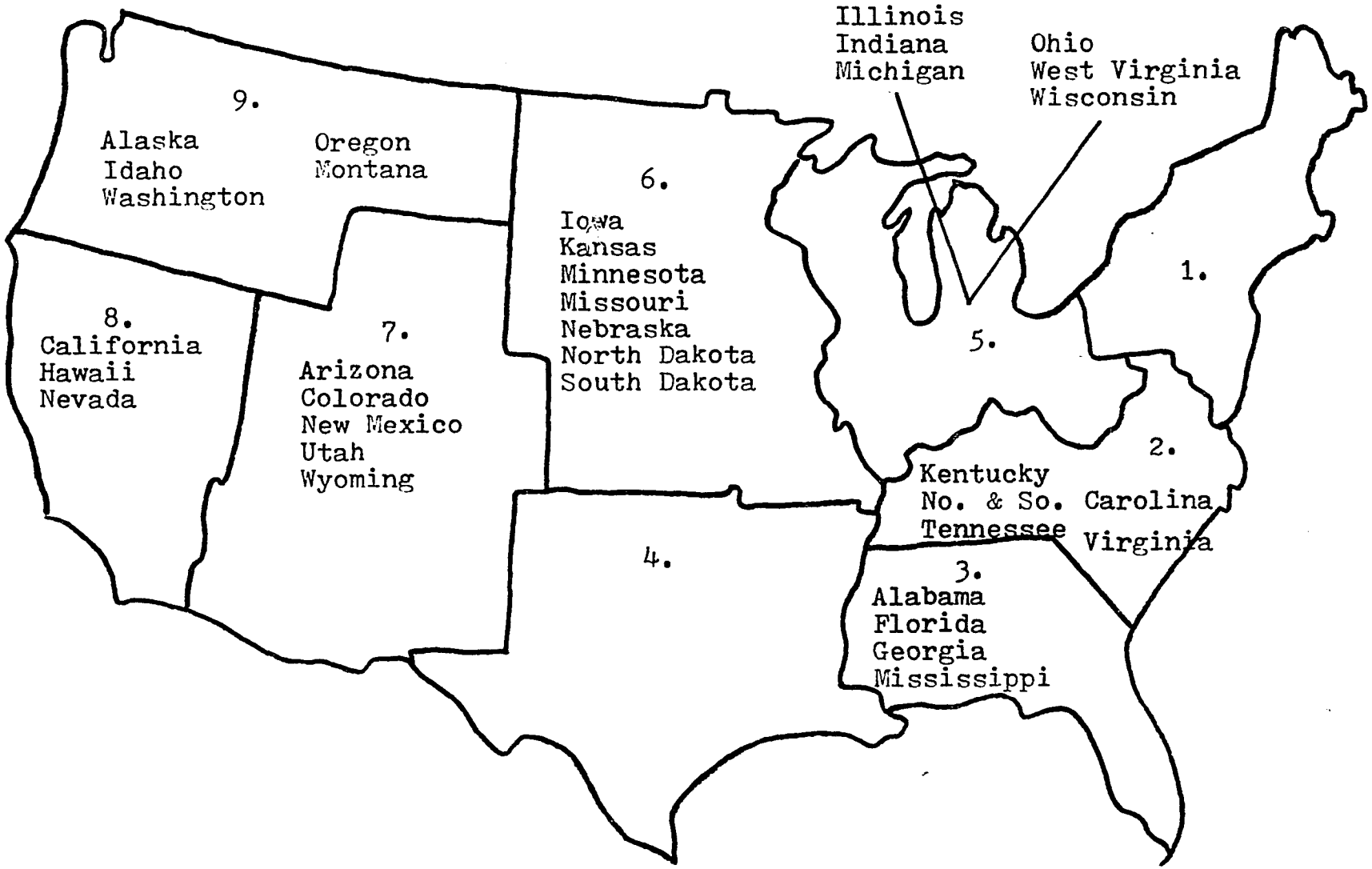
I was informed by the staff of the National A.I.A.W. Office that you would be able to give me the information I need. In order to select the sample for my dissertation I need to know the following information from your region. I need the names of the coaches and the schools whose teams participated in your regions 1975-1976 A.I.A.W. Tournaments for the sports of basketball, volleyball, tennis, and golf. The A.I.A.W. has given me permission to contact these coaches as possible subjects for my study. Your help in securing this information would be greatly appreciated. I would appreciate it very much if you could send me a list as soon as possible. Thank you for your time and consideration.

Sincerely yours,

Sandee L. Hill

Sandee L. Hill

(Copy of letter sent to A.I.A.W. Regional Representatives)



States in the A.I.A.W. Regions
Used in This Study

APPENDIX B

INTRODUCTORY LETTER

AND

INFORMATION QUESTIONNAIRE

Department of HPER
UNC-Greensboro
Greensboro, N.C. 27403

Dear A.I.A.W. Coach,

Your name was selected as the coach of a team which participated in the 1975-1976 A.I.A.W. Regional Tournament. I am in the process of selecting subjects to use as the sample for a study to be conducted on the personality of the woman coach. Specifically, the study will deal with the temperament or inherited traits which determine her behavioral style. It is my belief that this study will contribute to the knowledge and understanding of the behavior of the woman coach which is an area of research which has been neglected.

I would like to ask you to fill out the enclosed questionnaire and return it to me as soon as possible so that a sample can be selected for the study. The basis for selection is based solely on the sports you have coached. All information will be kept confidential.

If selected as a subject for the study, the remianing portion of the data will be collected by mail requiring nothing more of you than to respond to two, 50 question surveys. I would like to thank you for your consideration and cooperation in completing this questionnaire.

Sincerely yours,

Sandee L. Hill

Sandee L. Hill

(Copy of letter sent to original population)

INFORMATION QUESTIONNAIRE

Name _____ School Address _____

AIAW Region _____ _____

School Phone _____ Summer Mailing Address _____

Home Phone _____ _____

Directions: Please place an X opposite the item that describes you or your opinion and provide any further information which is requested. Please do not omit any question. If there is not an item provided for your answer, check "other" and briefly explain.

1. Age: _____ 20-30
   _____ 31-40
   _____ 41-50
   _____ over 50

2. Highest degree presently earned: _____ B.S/B.A.
   _____ M.S./M.A.
   _____ Ed.D./Ph.D.
   _____ other _____

3. Present rank held: _____ professor
   _____ associate professor
   _____ assistant professor
   _____ instructor
   _____ graduate assistant
   _____ other _____

4. Do your duties include: _____ coaching only
   _____ coaching and administration
   _____ coaching and teaching
   _____ other _____

5. Number of years you have been coaching on the collegiate level: _____ 1-4
   _____ 5-9
   _____ 10-14
   _____ 15-19
   _____ over 20

6. Give an approximate number of all the organizations (community, state, and national) related or unrelated to your profession of which you are currently a member.
   _____ number of organizations

7. Have you been employed to coach on any of these other levels?

____ no ____ yes

____ junior high
____ senior high
____ AAU
____ International

If so, which sports and for how long?

Sport	No. of Years
_____	_____
_____	_____

8. Did you participate in interscholastic athletics in high school?

____ no ____ yes

If so, which sports and for how many years?

Sport	No. of Years
_____	_____
_____	_____
_____	_____

9. Did you participate in intercollegiate athletics?

____ no ____ yes

If so, which sports and for how many years?

Sport	No. of Years
_____	_____
_____	_____
_____	_____

10. List the sport(s) you are currently coaching and the number of years you have coached that sport and indicate if the sport you are coaching is one you would elect to coach given the freedom of choice.

Sport	No. of Years	Elect to Coach	
		yes	no
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

11. Are you happy and satisfied with your coaching assignment(s)?

_____ yes _____ no _____ would rather not answer

12. Do you have a preference for coaching a team sport or an individual sport?

_____ no _____ yes

If so, which sport _____ and why? _____

_____

APPENDIX C

EASI III TEMPERAMENT SURVEY

October 19, 1976

Sandee L. Hill
Dept. of Physical Education
U. of N.C., Greensboro
Greensboro, n.c. 27403

Dear Ms. Hill:

You can find a copy of the EASI III in the appendix of the temperament book. Use it, for there is no copyright. When subjects fill it out, they merely rate themselves on a scale from one (a little) to five (a lot). For reversed items, you merely subtract their rating from five.

The scale was an attempt to test some hypotheses about the nature of the temperament, and, as you can see in the book, not all of our hypothesis were confirmed. (For example, the warmth aspect of sociability does not come out well in self-reports.) We have done no further research with the scale, but it is being used by others; yours is not the first request about it, and I assume that a dozen or so people are using it in research at present.

Finally, concerning your proposed research, there might be patterns of temperaments present in successful athletes. Surely, activity level is important. As for the other three temperaments, they would depend on the nature of the sport. Long distance runners would perhaps be less sociable; "style" athletes (diving, gymnastics) might be less impulsive; and emotionality might interact with the nature of the sport (the need to get "up" for an event versus the need for calm nerves). I would be interested to learn of your findings.

Yours sincerely,

Arnold H. Buss

(Copy of letter received from A. Buss)

EASI III TEMPERAMENT SURVEY

Directions: Select one of the following alternatives for each item which you feel is most descriptive of you as a **COACH**.

Select #1 if this statement is rarely true of you
#2 if this statement is seldom true of you
#3 if this statement is sometimes true of you
#4 if this statement is frequently true of you
#5 if this statement is almost always true of you

		Rarely	Seldom	Sometimes	Frequently	Almost alays
1.	I frequently get upset	1	2	3	4	5
2.	I usually seem to be in a hurry	1	2	3	4	5
3.	I make friends very quickly	1	2	3	4	5
4.	I have trouble controlling my impulses	1	2	3	4	5
5.	I am easily frightened	1	2	3	4	5
6.	I like to wear myself out with exertion	1	2	3	4	5
7.	I often say the first thing that comes into my head	1	2	3	4	5
8.	When displeased, I let people know it right away	1	2	3	4	5
9.	For relaxation I like to slow down and take things easy	1	2	3	4	5
10.	I am very sociable	1	2	3	4	5
11.	I generally seek new and exciting experiences and sensations	1	2	3	4	5
12.	I am almost always calm - nothing ever bothers me	1	2	3	4	5
13.	I often feel sluggish	1	2	3	4	5
14.	I generally like to see things through to the end	1	2	3	4	5
15.	I often feel insecure	1	2	3	4	5
16.	I like to be off and running as soon as I wake up in the morning	1	2	3	4	5
17.	I tend to be shy	1	2	3	4	5
18.	Usually I can't stand waiting	1	2	3	4	5
19.	It takes a lot to get me mad	1	2	3	4	5
20.	I often feel as if I'm bursting with energy	1	2	3	4	5
21.	I often have trouble making up my mind	1	2	3	4	5
22.	I get excited easily	1	2	3	4	5

		Rarely	Seldom	Sometimes	Frequently	Almost always
23.	I like to keep busy all the time	1	2	3	4	5
24.	I'll try anything once	1	2	3	4	5
25.	I tend to be nervous in new situations	1	2	3	4	5
26.	When I do things, I do them vigorously	1	2	3	4	5
27.	I usually prefer to do things alone	1	2	3	4	5
28.	I tend to hop from interest to interest quickly	1	2	3	4	5
29.	I can tolerate frustration better than most	1	2	3	4	5
30.	I sometimes like to do "crazy" things just to be different	1	2	3	4	5
31.	I am somewhat emotional	1	2	3	4	5
32.	I like to plan things way ahead of time	1	2	3	4	5
33.	I tend to give up easily	1	2	3	4	5
34.	I have trouble resisting my cravings (for food, cigarettes, etc.)	1	2	3	4	5
35.	I often act on the spur of the moment	1	2	3	4	5
36.	I have fewer fears than most people my age	1	2	3	4	5
37.	I am known as hot-blooded and quick-tempered	1	2	3	4	5
38.	My life is fast paced	1	2	3	4	5
39.	I have many friends	1	2	3	4	5
40.	I like to spend my money right away rather than save it for long-range goals	1	2	3	4	5
41.	I am happiest in familiar surroundings	1	2	3	4	5
42.	Unfinished tasks really bother me	1	2	3	4	5
43.	I often feel like crying	1	2	3	4	5
44.	My movements are forceful and emphatic	1	2	3	4	5
45.	I yell and scream more than most people my age	1	2	3	4	5
46.	I like to make detailed plans before I do something	1	2	3	4	5
47.	I get bored easily	1	2	3	4	5
48.	When I get scared, I panic	1	2	3	4	5
49.	There are many things that annoy me	1	2	3	4	5
50.	Once I get going on something I hate to stop	1	2	3	4	5

EASI III TEMPERAMENT SURVEY

Directions: Select one of the following alternatives for each item which you feel is most descriptive of you as a PERSON.

Select #1 if this statement is rarely true of you
#2 if this statement is seldom true of you
#3 if this statement is sometimes true of you
#4 if this statement is frequently true of you
#5 if this statement is almost always true of you

		Rarely	Seldom	Sometimes	Frequently	Almost always
1.	I am very sociable	1	2	3	4	5
2.	I often feel as if I'm bursting with energy	1	2	3	4	5
3.	I frequently get upset	1	2	3	4	5
4.	I tend to be nervous in new situations	1	2	3	4	5
5.	I sometimes like to do "crazy" things just just to be different	1	2	3	4	5
6.	I am known as hot-blooded and quick-tempered	1	2	3	4	5
7.	Once I get going on something I hate to stop	1	2	3	4	5
8.	I am happiest in familiar surroundings	1	2	3	4	5
9.	I usually seem to be in a hurry	1	2	3	4	5
10.	I am almost always calm - nothing ever bothers me	1	2	3	4	5
11.	I often say the first thing that comes into my head	1	2	3	4	5
12.	When I do things, I do them vigorously	1	2	3	4	5
13.	I am somewhat emotional	1	2	3	4	5
14.	I get bored easily	1	2	3	4	5
15.	I have many friends	1	2	3	4	5
16.	Unfinished tasks really bother me	1	2	3	4	5
17.	When I get scared, I panic	1	2	3	4	5
18.	I make friends very quickly	1	2	3	4	5
19.	Usually I can't stand waiting	1	2	3	4	5
20.	I get excited easily	1	2	3	4	5
21.	I often feel insecure	1	2	3	4	5
22.	My movements are forceful and emphatic	1	2	3	4	5
23.	I like to plan things way ahead of time	1	2	3	4	5
24.	I have fewer fears than most people my age	1	2	3	4	5
25.	My life is fast paced	1	2	3	4	5

		Rarely	Seldom	Sometimes	Frequently	Almost Always
26.	I have trouble resisting my cravings (for food, cigarettes, etc.)	1	2	3	4	5
27.	I am frightened easily	1	2	3	4	5
28.	For relaxation I like to slow down and take things easy	1	2	3	4	5
29.	It takes a lot to get me mad	1	2	3	4	5
30.	I tend to be shy	1	2	3	4	5
31.	I like to wear myself out with exertion	1	2	3	4	5
32.	I usually prefer to do things alone	1	2	3	4	5
33.	I like to make detailed plans before I do something	1	2	3	4	5
34.	There are many things that annoy me	1	2	3	4	5
35.	I tend to give up easily	1	2	3	4	5
36.	I often have trouble making up my mind	1	2	3	4	5
37.	When displeased, I let people know it right away	1	2	3	4	5
38.	I generally seek new and exciting experiences and sensations	1	2	3	4	5
39.	I generally like to see things through to the end	1	2	3	4	5
40.	I'll try anything once	1	2	3	4	5
41.	I can tolerate frustration better than most	1	2	3	4	5
42.	I often act on the pur of the moment	1	2	3	4	5
43.	I often feel like crying	1	2	3	4	5
44.	I have trouble controlling my impulses	1	2	3	4	5
45.	I tend to hop from interest to interest quickly	1	2	3	4	5
46.	I yell and scream more than most people my age	1	2	3	4	5
47.	I like to keep busy all the time	1	2	3	4	5
48.	I often feel sluggish	1	2	3	4	5
49.	I like to spend my money right away rather than save it for long-range goals	1	2	3	4	5
50.	I like to be off and running as soon as I wake up in the morning	1	2	3	4	5

EMOTIONALITY

General Emotionality
I frequently get upset
I am almost always calm - nothing ever bothers me (reverse)
I get excited easily
I am somewhat emotional
I often feel like crying

Fear
I am easily frightened
I often feel insecure
I tend to be nervous in new situations
I have fewer fears than most people my age (reverse)
When I get scared, I panic

Anger
When displeased, I let people know it right away
It takes a lot to get me mad (reverse)
I am known as hot-blooded and quick-tempered
I yell and scream more than most people my age
There are many things that annoy me

ACTIVITY

Tempo
I usually seem to be in a hurry
For relaxation I like to slow down and take things easy (reverse)
I like to be off and running as soon as I wake up in the morning
I like to keep busy all the time
My life is fast paced.

Vigor
I like to wear myself out with exertion
I often feel sluggish (reverse)
I often feel as if I'm bursting with energy
When I do things, I do them vigorously
My movements are forceful and emphatic

SOCIABILITY

I make friends very quickly
I am very sociable
I tend to be shy (reverse)
I usually prefer to do things alone (reverse)
I have many friends

IMPULSIVITY

Inhibitory Control
I have trouble controlling my impulses
Usually I can't stand waiting
I can tolerate frustration better than most (reverse)
I have trouble resisting my cravings (for food, cigarettes, etc.)
I like to spend my money right away rather than save it for long-range goals

Decision Time
I often say the first thing that comes into my head
I often have trouble making up my mind (reverse)
I like to plan things way ahead of time (reverse)
I often act on the spur of the moment
I like to make detailed plans before I do something (reverse)

Sensation Seeking
I generally seek new and exciting experiences and sensations
I'll try anything once
I sometimes do "crazy" things just to be different
I'm happiest in familiar surroundings (reverse)
I get bored easily

Persistence
I generally like to see things through to the end (reverse)
I tend to hop from interest to interest quickly
I tend to give up easily
Unfinished tasks really bother me (reverse)
Once I get going on something I hate to stop (reverse)

APPENDIX D

LETTER ACCOMPANYING FIRST EASI III

Department of HPER
UNC-Greensboro
Greensboro, N.C. 27403
May, 1977

Dear A.I.A.W. Coach,

Some time ago you were sent an Information Questionnaire which was to be used to select a sample for a study to be conducted on the personality of the woman coach. Your name was initially selected because you were the coach of a team which participated in a 1975-1976 Regional Tournament in your region. The final sample has been selected from a nation-wide population. Your name has been selected as a coach who is presently coaching on the collegiate level and has coached a team sport or an individual sport exclusively.

This study will deal with the temperament traits of women who coach team sports and women who coach individual sports. Temperament is that portion of your total personality which is said to be inherited and, therefore, relatively stable throughout life and across varying situations. Temperament determines your behavioral style - how you do something rather than the specific act. It is my objective to determine if the temperament traits of women who coach team sports differ from the temperament traits of women who coach individual sports. It is my belief that this study will contribute to the knowledge and understanding of the behavior of the woman coach which is an area of research which has been neglected and which might help all of us in our coaching assignments.

I would like to ask you to be a part of this study and help me further our knowledge of the behavior of the woman coach. Your consenting to be a subject would require only that you respond to two, 50 item surveys. The first of these surveys is included with this letter. The second will be sent to you two weeks after the return of the first. Your name will be required on the top of the surveys so that I will know when to mail the second one to you. Please understand that all information will remain strictly confidential.

I would like to ask you to sign the EASI III Survey and return it to me if you do not wish to be a subject for this study. Your time, cooperation, and consideration are greatly appreciated.

Sincerely yours,

Sandee L. Hill

Sandee L. Hill

(Copy of letter sent with the first EASI III)

APPENDIX E

LETTER ACCOMPANYING SECOND EASI III

Department of HPER
UNC-Greensboro
Greensboro, N.C. 27403
June, 1977

Dear A.I.A.W. Coach,

This is the final step in the collection of the data for my study on the temperament traits of women coaches. I would ask that you place your name on the top of the survey, read the directions, complete the questions, and return it to me as soon as possible.

I would like to thank you very much for all your time, cooperation, and consideration. Your cooperation has enabled me to use a nation-wide sample which will be representative of women coaches across the United States. Once again, I would like to thank you for your help.

Sincerely yours,

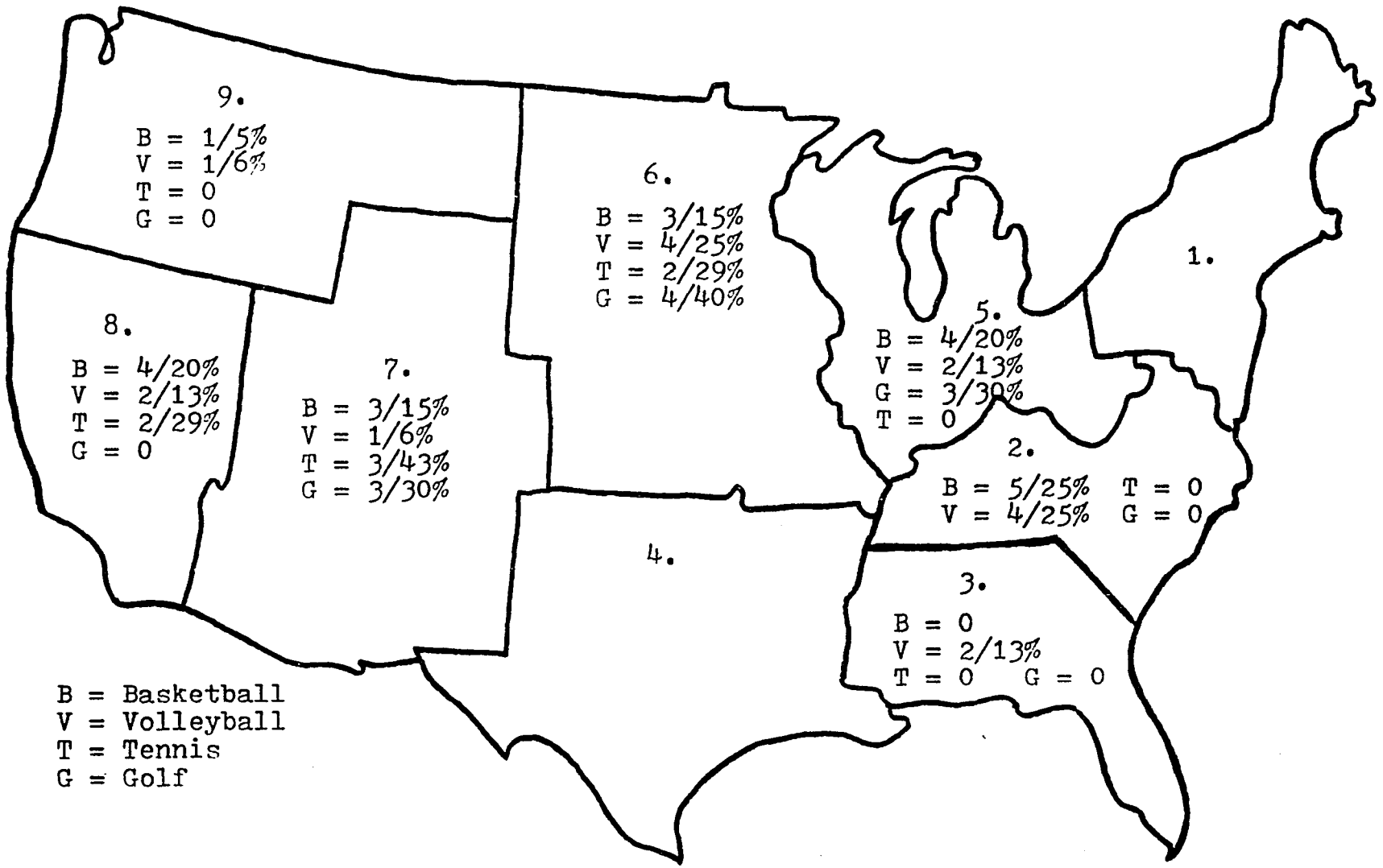
Sandee L. Hill

Sandee L. Hill

(Copy of last letter sent with the second EASI III)

APPENDIX F

NUMBER AND PERCENTAGE OF RETURNS FROM THE FINAL SAMPLE



Number and Percentages of Returns
for the Final Sample

APPENDIX G

SUBJECT'S SCORES

BASKETBALL
N=20

	COACH													PERSON										
Ss#	G	F	A	ET	ST	T	V	AT	IC	P	DT	SS	IT	G	F	A	ET	ST	T	V	AT	IC	P	DT	SS	IT
1	15	13	13	41	17	21	19	40	15	07	13	14	40	15	13	14	42	18	21	19	40	15	07	14	14	51
2	16	06	14	36	17	19	23	42	13	06	13	11	43	14	07	14	35	19	20	22	42	13	06	15	13	47
3	12	12	12	36	17	18	16	34	11	08	13	11	43	15	13	12	40	19	15	17	32	14	13	15	12	54
4	12	11	14	37	14	16	15	31	14	12	15	14	55	14	10	14	38	14	20	16	36	14	10	15	16	55
5	11	12	08	31	20	19	15	34	14	11	17	14	56	13	13	10	36	20	18	14	32	15	12	15	16	58
6	09	05	07	21	19	12	17	29	11	95	11	11	38	12	10	08	30	20	18	18	36	14	05	14	12	45
7	13	10	08	31	24	18	18	36	12	08	13	12	45	13	10	07	30	23	17	21	38	11	08	15	11	45
8	21	12	15	58	23	22	25	47	19	07	15	17	58	19	13	13	45	21	22	22	44	17	07	11	16	51
9	14	18	17	49	18	20	21	41	13	07	15	17	52	17	14	18	49	18	21	20	41	13	07	15	17	52
10	16	06	20	42	18	19	15	34	11	07	09	18	45	16	13	14	43	13	17	14	31	16	06	10	12	44
11	16	07	16	39	24	20	19	39	20	05	13	17	55	14	11	14	39	25	19	18	37	17	09	16	14	56
12	21	13	08	42	20	17	16	33	14	10	12	17	53	19	16	12	37	19	17	21	38	16	08	15	19	58
13	11	13	11	35	19	15	15	30	16	12	16	14	58	12	12	10	34	20	16	17	33	16	11	13	11	51
14	10	12	06	28	23	13	17	30	09	06	13	11	39	10	11	07	28	23	12	16	28	09	06	12	12	39
15	12	11	16	39	18	15	17	32	16	08	16	13	53	12	11	16	39	18	15	17	32	16	08	16	13	53
16	13	09	15	37	20	15	16	31	10	09	15	13	47	09	08	10	27	15	14	19	33	12	09	13	13	48
17	16	17	18	51	22	16	17	33	19	05	13	12	49	19	17	19	55	22	15	17	33	15	07	15	14	51
18	15	09	16	40	22	16	20	36	17	10	12	15	54	18	12	15	45	22	14	19	33	20	13	19	18	70
19	12	09	09	30	22	18	18	36	12	12	19	15	59	13	11	09	33	22	17	19	36	16	12	17	16	61
20	05	09	11	25	12	11	21	32	11	06	10	08	35	06	08	09	23	12	11	20	31	11	05	11	08	35

VOLLEYBALL
N=16

Ss#	COACH													PERSON										
	G	F	A	ET	ST	T	V	AT	IC	P	DT	SS	IT	G	F	A	ET	ST	T	V	AT	IC	P	DT	SS	IT
1	10	10	10	30	21	14	16	30	09	07	12	14	42	08	07	08	23	19	18	18	36	07	06	11	16	40
2	09	10	07	26	15	14	14	27	12	13	10	13	48	06	16	06	28	15	12	13	25	12	12	11	09	44
3	12	08	08	28	20	14	16	30	14	07	16	14	51	11	10	10	30	19	13	16	29	15	10	17	15	57
4	11	10	08	29	24	20	20	40	14	09	17	18	58	14	08	07	29	22	20	20	40	16	18	17	18	59
5	12	10	14	36	23	19	20	39	10	08	15	13	46	12	10	09	31	23	18	17	35	09	09	16	13	47
6	13	15	09	37	17	16	12	28	08	09	12	12	41	14	15	08	37	15	15	15	30	08	08	08	11	38
7	13	11	09	33	16	17	16	33	17	09	12	15	53	17	11	08	36	16	15	17	32	16	09	14	14	53
8	15	11	21	47	12	14	15	29	12	09	15	14	50	17	10	23	50	15	13	18	31	15	11	17	14	57
9	12	10	09	31	18	18	21	39	15	07	11	17	39	10	08	09	27	20	21	18	39	12	07	10	16	45
10	15	06	17	38	25	20	22	42	17	06	13	13	48	16	06	17	39	21	18	22	40	14	08	16	10	48
11	11	09	08	28	16	16	15	31	10	06	10	13	39	10	10	06	26	19	18	17	35	12	06	10	14	42
12	11	13	09	33	16	12	15	27	15	10	12	12	49	14	14	10	38	16	13	16	29	12	17	13	13	53
13	17	12	17	46	14	20	15	35	21	11	11	16	59	20	13	17	50	15	18	17	35	19	10	15	13	57
14	13	11	12	36	18	20	22	42	11	06	12	15	44	10	12	09	31	17	13	18	31	13	06	14	15	48
15	10	12	12	34	19	17	16	33	13	11	17	19	60	10	11	15	36	19	17	20	37	13	09	14	12	48
16	14	10	07	31	17	12	14	26	12	15	15	10	52	13	11	07	31	17	11	15	26	12	15	15	10	52

GOLF
N=10

	COACH													PERSON										
Ss#	G	F	A	ET	ST	T	V	AT	IC	P	DT	SS	IT	G	F	A	ET	ST	T	V	AT	IC	P	DT	SS	IT
1	10	12	10	32	18	20	18	38	13	09	15	14	51	12	11	09	32	18	18	20	38	14	08	15	15	52
2	08	11	06	25	14	11	15	25	09	06	14	11	40	10	12	07	29	13	11	16	27	12	08	15	13	48
3	11	16	10	37	21	19	19	38	15	11	17	13	56	11	10	10	31	23	17	19	36	12	14	15	13	54
4	09	11	09	29	17	15	18	33	09	12	11	16	48	09	10	08	27	17	15	16	31	09	10	10	16	45
5	14	07	14	35	24	17	16	33	14	08	16	14	52	16	10	15	41	23	21	19	40	14	07	17	17	55
6	14	09	16	39	26	24	21	45	19	08	24	10	61	14	09	12	35	24	24	22	46	19	09	24	14	66
7	12	09	07	28	23	19	25	44	11	05	17	14	47	13	08	07	28	23	20	25	45	11	05	15	17	48
8	11	11	10	32	21	16	16	32	14	12	15	13	54	11	10	08	29	19	13	15	28	15	13	14	13	55
9	16	14	11	41	14	15	13	28	14	12	14	13	53	12	13	09	34	16	14	14	28	13	12	13	11	49
10	12	07	09	28	22	20	19	39	11	06	11	12	40	11	10	09	30	19	19	20	39	12	09	13	11	45

TENNIS
N=7

	COACH													PERSON										
Ss#	G	F	A	ET	ST	T	V	AT	IC	P	DT	SS	IT	G	F	A	ET	ST	T	V	AT	IC	P	DT	SS	IT
1	19	15	16	50	19	15	24	39	14	06	10	12	42	18	12	14	44	18	17	25	42	15	05	11	12	43
2	11	10	10	31	18	15	21	36	07	05	10	11	33	11	10	10	31	18	15	21	36	07	05	10	11	33
3	13	10	11	34	22	21	20	41	19	09	14	18	60	13	10	12	35	21	22	21	43	12	09	12	17	50
4	14	14	08	36	16	17	16	33	16	10	12	10	48	16	16	09	41	17	18	16	34	16	11	14	13	54
5	19	12	11	42	18	16	19	35	16	09	11	16	52	18	13	12	43	16	17	19	36	15	11	12	13	51
6	12	07	09	28	23	17	14	31	10	06	12	14	42	08	09	08	25	24	18	16	34	09	07	11	14	41
7	09	08	08	25	14	17	18	35	10	09	12	12	42	08	08	09	25	14	16	19	35	10	08	13	12	43

APPENDIX H

COCHRAN C TEST FOR HOMOGENEITY OF VARIANCE

Cochran C Test for Homogeneity of Variance

The Cochran C Test is used to determine if two samples have been randomly drawn from populations having the same variance. The following equation was used to compute the Cochran C:

$$C = \frac{s^2 \text{ max}}{\sum s_j^2}$$

Trait	Variance		Cochran C
	Team	Individual	
General Emotionality	11.24	9.65	.54
Fear	7.51	5.85	.56
Anger	16.67	6.50	.72*
Sociability	10.76	11.54	.52
Tempo	8.69	9.61	.53
Vigor	7.19	10.60	.60
Inhibitory Control	8.37	9.98	.54
Persistence	7.07	6.53	.52
Decision Time	6.10	11.14	.65
Sensation Seeking	6.59	4.81	.58

k=2
n=71
*$C \geq .679$ reject H_o of equal variance at the .05 level

The Cochran C Test for homogeneity of variance showed that the criterion scores, on the whole, were drawn from populations having the same variance.