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RELATIONSHIP BETWEEN ACHIEVEMENT MOTIVATION AND FOCUS OF ATTENTION IN SPORT

by

SALWAN F. YOUSIF

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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ABSTRACT

The purpose of this study was to investigate the relationship between an athlete's motive to achieve success, motive to avoid failure and power motive with his/her attentional and interpersonal style.

Volleyball players (N=123), who were members of eleven high school volleyball teams in Edmonton, Alberta, were administered two questionnaires. The Test of Attentional and Interpersonal Style (TAIS) (Nideffer, 1976) and the Sports Attitude Inventory (SAI) (Willis, 1982). Ten percent of the subjects were selected to amdinister an athlete worksheet and for personal interviews. A coach worksheet and a personal interview were administered to the coaches of those subjects who filled out the athlete worksheet. The t-test for both male and female groups regarding the TAIS revealed some significant differences. Females were significantly higher on BET, INFP, and P/O than males. While males were significantly higher on CON than females.

The "varimax" factor analysis was performed on the TAIS that revealed five factors, which corresponded closely with Nideffer's factor structure. Pearson product-moment correlation coefficients were calculated between the TAIS subscales and factors and the SAI subscales. The coefficients ranged only from low to moderate but several statistically significant relationships did appear.

A multiple linear regression analysis was used to test whether or not scores on the motive to achieve success (MAS)

and motive to avoid failure (MAF) could predict various TAIS variables. This analysis revealed low to moderate prediction can be made.

These results were then fully discussed in term of their practical implication for athletes.

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Table of Contents

List of Tables

List of Figures

Chapter I

Statement of the Problem

A. Introduction

The word "attention" is a term often used in everyday language when people want to listen to a speaker or a song, when they watch a film or a volleyball match, or when they are merely doing their daily tasks. In the sporting world, however, the term attention takes on a different meaning. Coaches generally ask their players to concentrate and selectively focus (i.e., focus their attention) on the ball or the opposing players in order to be ready for the next movement. In volleyball, "attention" may take on the psychological meaning of an orienting response since an offensive play may last a split second and the scoring of a number of points may take only a few seconds. Yousif (1983) indicates that:

> Focus of attention is affected by certain characteristics of the athlete, e.g., his interest, his motivation, game awareness, his past experience, etc. If an athlete is preoccupied with some personal problems, he might be mentally overloaded and thus unable to concentrate on the course of the game. Therefore, coaches must concern themselves with the improvement of their players' attentional abilities in order to enhance their performance.

Nideffer (1976) introduced the Test of Attentional and Interpersonal Style (TAIS) with 17 specific scales considered important for predicting performance and making

specific treatment recommendations.' Since then the test has been used in many different experimental, statistical, and clinical research projects, both within and outside of sport itself. Its general and specific applicability to the enhancing athletic performance has made it an instrument of increasing value for sport researchers and practioners. The TAIS seems to naturally mesh with those psychological variables which are most directly related to athletic performance, particularly narrowing of one's attentional focus for task execution, controlling one's own behavior, or focusing on one's level of self esteem.

The theory of achievement motivation has been an influential theory and has been applied to such areas as the prediction of both sport involvement and sport performance or as to it affects the cognitive attribution of athletic performance. Both its practical and controversial nature have made it one of the most heavily researched theories in the last 20 years. Achievement motivation is concerned with the explanation of an individual's tendency to approach success and avoid failure. Donnelly and Birrell (1978) reported contradictory findings in their review of 22 studies involving sport-related achievement motivation. Willis (1982) attributed the lack of consistency in these studies to the variety of instruments used to measure the motive to achieve success (MAS) and the motive to avoid failure (MAF). The motive to achieve success is conceived as

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'A brief description of the TAIS is available in the Instruments section of Methods and Procedure.

the striving for achievement and motive to avoid failure as a capacity for reacting with shame and/or embarrassment when the outcome a of performance is failure. To counter some of these problems Willis (1982) developed the Sports Attitude Inventory (SAI) which is a sport-specific instrument measuring motive to achieve success (MAS), motive to avoid failure (MAF) and a power motive (POW).

Achievement motivation has not as yet been linked to what the TAIS tells us about an athlete's performance in sport. Though considerable information does exist concerning the nature of achievement motivation and its place in sport, we still know little about how it interrelates with or influences a person's focus of attention nor how it affects ones' interpersonal style in either general or specific sports situations.

B. Purpose of the Study

The main purpose of this study is to investigate the relationship between an athlete's motive to achieve success, motive to avoid failure and power motive with specific aspects of his/her attentional and interpersonal style. Further to this, the study will examine the differences between level of achievement motivation as a function of one's attentional and interpersonal style.

C. Additional Objectives of the Study

1. To compare the attentional and interpersonal style of male and female athletes.
2. To analyze the attentional and interpersonal style as a way to measure and control an athlete's stress from competition.
3. To describe uses of the athlete's attentional and interpersonal style in dealing with sports skills and strategies.
4. To compare the factor structure obtained in the present study with that obtained in Nideffer's study.
5. To examine the relationship of the athlete's achievement motivation and power motive to his/her attentional and interpersonal style as it relates to sports skills and strategies.
6. To utilize scores on the motive to achieve success (MAS) and motive to avoid failure (MAF) to predict certain selected TAIS variables.
7. To examine the construct validity of the Power scale of Willis' Sports Attitude Inventory.

D. Delimitations

1. The sampling of subjects was limited to 122 males and female athletes who were members of eleven high school volleyball teams in Edmonton, Alberta during the volleyball season in 1983-84.

2. Instruments were limited to Nideffer's Test of Attentional and Interpersonal Style (TAIS) and Willis Sports Attitude Inventory (SAI).
3. Personal interviews and administration of worksheets were limited to 10% of the subjects and their coaches.

E. Limitations

The following factors may have limiting effect on the outcome of the study:

1. All responses were accepted as given. As in any study involving the use of a questionnaire, the results may be relevant to the extend that questions were answered sincerely and honestly.
2. Evaluation of an athletes' motive to achieve success and motive to avoid failure may have been affected by other motives and values which may have influenced the subjects' answers at the given moment in time.

F. Need for the Study

The widespread use of both the Test of Attentional and Interpersonal Style and the theory of achievement motivation in select studies examining attention or achievement motivation in sport gives a good and clear example how important they are as each relates to successful athletic performance.

Many researchers who have used the TAIS have commented on the importance of using this instrument to predict an

athlete's performance on the basis of identifying his/her attentional weaknesses and strengths. Also, to suggest appropriate mental training in order to enhance the athlete's performance.

Other researchers who have engaged in achievement motivation research in sport have explained the importance of this theory as it relates to successful athletic performance. Alderman (1974) says:

> A theory which seems to have considerable intuitive attractiveness and relevance when attempting to explain motivational factors in athletics and physical activity is the concept of need for achievement motivation. The reason for this viewpoint is simply that a great deal of emphasis in sport is placed upon competing against some standard of excellence, and this is the exact focus of achievement motivation theory.

Nideffer's attentional model and the theory of achievement motivation, can be used to explain motivational and interpersonal interactive styles on the one hand, and the relatively different demands of the practitioner on the other. These demands are proper to the current shift in research in the area of sport psychology from the traditional academic type of experimental research to a more clinical or applied investigative approach more directly related to the needs and interests of coaches and athletes.

Therefore this investigation is related most significantly (1) to advising or counselling athletes, (2) to examining achievement motives in so far as they influence

the attentional strengths and weaknesses of athletes as well as their interpersonal style, and (3) to developing theoretical models of success in sports which are both valid and useful for utilization among coaches and athletes.

G. Definition of Terms

Focus of Attention:

The ability to focus on a specific stimuli along two attentional dimensions: 1) width (narrow to broad) and direction (internal and external).

Attentional Style:

The attentional strengths and weaknesses of an athlete along the two attentional dimensions of width and direction when he/she attends to: 1) other people, 2) events occurring, or 3) specific objects, as measured by the Nideffer's Test of Attentional and Interpersonal Style.

Effective Attentional Style:

When an athlete's TAIS attentional scores (broad external attentional focus BET, broad internal attentional focus BIT, and narrow focus of attention NAR) are all higher than his or her overload scores (overloaded by external stimuli OET, overloaded by internal stimuli OIT, and reduced attentional focused RED) by at least 10 percent. This means that the athlete is able to shift from one type of attention to another in response to changing demands.

Ineffective Attentional Style:

When an athlete's overload scores (OET, OIT, RED) are all higher than his or her attentional scores (BET, BIT, NAR) by at least 10 percent.

Interpersonal Style:

An athlete's characteristic way of interacting with or relating to other people and while to responding both physically and mentally to increasing pressure.

Achievement Motivation:

An athlete's propelled action concerned with standards of excellence in striving for success.

Motive:

A state of tension within the individual which arouses, maintains and directs behavior toward a goal (Chaplin, 1979).

Motive to Achieve Success (MAS):

A relatively stable disposition to strive for achievement or success (Atkinson, 1966).

Motive to Avoid Failure (MAF):

The tendency to withdraw or avoid situations in which performance will be evaluated is characteristic of high failure avoidance (Atkinson, 1964).

Power Motive:

The capacity to produce effects, either consciously or unconsciously on the behavior or feelings of another (Winter, 1973).

Performance:

A production of an athlete's physical and technical actions along with his/her mental and psychological behavior during a sports event.

Chapter II

REVIEW OF RELATED LITERATURE

The purpose of this section is three-fold:

1. To provide an overview of the current literature of focus of attention and interpersonal style.
2. To provide an overview of the current literature of achievement motivation.
3. To provide a valid relationship for looking at these constructs in relation to each other.

A. Focus of Attention and Interpersonal Style

As the major instrument used by different researchers and sport psychologists to measure the attentional ability and interpersonal style of athletes and to predict the successful performance in sport, the Test of Attentional and Interpersonal Style (TAIS) is the focal point for information in this study.

The Test of Attentional and Interpersonal Style (TAIS)

The Test of Attentional and Interpersonal Style (TAIS) developed in 1973 and published by R.M. Nideffer in 1976 in the Journal of Personality and Social Psychology was an attempt to address several key issues common to psychological assessment. Nideffer and Pratt (1982) summarized these issues as:

1. A need to develop a performance-relevant instrument with predictive validity across a wide variety of performance

situations where pressure to perform well always exists.

2. A need to develop an instrument measuring both cognitive (i.e., attentional and information processing capacities) and interpersonal characteristics.
3. A need to develop an instrument which has a sound theoretical base which can be tested in both field and laboratory studies.
4. A need to develop an instrument which can be used for operational counselling, psychological skill training, stress management, and problem treatment programs.
5. A need to develop an instrument which can be used for feedback in clinical, counselling, and training situations.

Such needs and purposes coincide naturally with the problems faced by sport psychologists working with coaches and athletes. Use of the TAIS, therefore, has been expanding rapidly over the last few years.

Nideffer's Model of Attention

Nideffer (1976) feels there are at least four different types of attention which athletes need to develop in order to function effectively. They are categorized as follows:

1. Broad-Internal: It is necessary for athletes to be able to integrate and organize a large number of internal thoughts and perceptions. This is the type of attention used to analyze and make plans, to anticipate the future and to recall past informtion. Quick learners have this

ability.

2. Broad-External: There are occasions when it is necessary for an athlete to rapidly scan a large number of external stimuli. This is the type of attention used to read complex sports situations, assess the external environment and anticipate and react to the actions of other people.
3. Narrow-External: It is necessary for athletes to focus attention on one thing, avoiding distraction. This is an action oriented focus. Once a plan is made, attention is narrowed in order to execute a task, e.g. to hit a ball, or react to an individual opponent.
4. Narrow-Internal: It is necessary for athletes to narrowly focus their attention internally, e.g., on one line of thought. Again, this is an action-oriented form of attention. It is this kind of attention that athletes use to narrow and calm themselves or to rehearse a particular skill.

TAIS Reliability and Validity

Wolfe and Nideffer (1974) reported two-week test-retest reliability coefficients for the TAIS which ranged from .60 to .93 with a median of .83 for 90 introductory psychology students (45 males and 45 females). Subsequent studies have obtained similar results and the median test-retest correlation for a one year period was .76 (Nideffer and Pratt, 1982).

The TAIS construct validity has been examined by correlating the TAIS scale scores with the same subject's scores on other psychological instruments such as the MMPI, California F Scale, Rotter Internal External (I E) scale, Tayler Manifest Anxiety Scale (TMAS), Wechsler Adult Intelligence Scale (WAIS), Maudsley Personality Inventory (MPI), and the State Trait Anxiety Index (STAI). These instruments were reported by McPherson and Nideffer (1975), and Wolfe and Nideffer (1974). These correlations offered construct validation for the attentional subscales: OIT, RED, and NAR. Construct validity has been found for the following TAIS interpersonal scales: CON, EXT, IEX, NAE, and PAE.

Nideffer (1978) and McPherson and Nideffer (1975) have demonstrated that the TAIS has criterion-oriented validity (i.e., concurrent validity and predictive validity). Nideffer (1978) used the TAIS scores to successfully predict which swimmers would perform poorly under pressure. Additional evidence of the predictive validity of the TAIS was found in a study where the subjects were incoming students. Test scores were rated to predict the likelihood of problems developing because of: 1) depression, 2) authority conflict, 3) difficulty concentrating, 4) lack of self-discipline, and 5) performance anxiety. At the end of the academic year the Dean of Students was asked to rate two extreme groups of students in terms of their actual behavior and progress over the year. These two groups were selected

on the basis of TAIS scores. From the entire sample of 110, twenty three students were identified as being likely to be problem free. Twenty two students were selected because it was felt they would be most likely to experience problems.

TAIS Assessment in Sport

Zaichkowsky, Jackson and Aronson (1982) have conducted three different studies testing the efficacy of using the TAIS as a predictor of elite performance across three different sports involving both men and women. Zaichkowsky (1980) studied world class track athletes; Jackson (1980) conducted a study on female collegiate swimmers and divers, and Aronson (1981) studied world class gymnasts. Based upon discriminant function analysis and multiple regression techniques all three studies demonstrated unequivocally, that the TAIS is a strong predictor of successful performance in all three sports. They also found that: 1) TAIS serves as a useful tool for describing the psychological characteristics of successful athletes, 2) the TAIS may prove useful to coaches for the purposes of assisting in identifying and selecting elite athletes, and 3) the TAIS can be a useful diagnostic aid for coaches and sport psychologists.

Another study by Reis and Bird (1982) also attempted to examine the predictive validity of the TAIS in sport. Their two part investigation tested whether or not a self-report measure of broad or narrow attentional style (i.e., the BET

and RED sub-scales of the TAIS) could predict cue-processing ability on a task that required the processing of peripheral cues. In Experiment 1 it was hypothesized that broad attenders would be superior to narrow attenders. Two separate probe techniques were used to measure peripheral cue processing. Results indicated marginal support for the prediction on the first probe and strong support on the second probe. In Experiment 2 subjects received either positive or negative false feedback in an attempt to manipulate level of anxiety and to observe the subsequent effects on the cue-processing ability of broad and narrow attenders. Broad attenders who received positive feedback processed peripheral cues faster than all other subjects.

Rostad (1982) investigated the efficacy of employing Nideffer's (1976) centering program together with mental rehearsal as a cognitive coping strategy to enhance game performance in basketball. Her sample included four subjects who were in their broad external (BET) and narrow (NAR) focuses of attention. Each subject participated in private sessions for centering and for mentally rehearsing the designated situations each week. It was hypothesized that: 1) the treatment intervention (i.e., centering and mental rehearsal) would enhance the player's performance in the defined game situations, and 2) there would be a positive relationship between a player's initial TAIS profile and the intervention effects on the BET and NAR behaviors. The first hypothesis was rejected as minimal positive results were

found, and the second hypothesis was neither completely confirmed nor completely rejected.

Crossman (1984) investigated the effects of directing attentional focus on the basketball performance of 10 female varsity basketball players. Subjects were divided into two equal groups by using the process of matching, and past performance as the criteria. The experimental group were taught the focusing technique described by Kauss (1978). After repeated practice, subjects in the experimental group were required to focus prior to competition and whenever attention focus was lost during competition. The control group was not taught the focusing technique nor were they given any specific directions regarding their cognitions prior to or during competition. No significance was found for the experimental group before and after treatment, free throw percentage improved from 56.4 percent to 62.5 percent. Offensive rebound also improved although not significantly from 2.4 per game to 2.6.

Five of the six performance criteria for the control group changed from the pre-test to post-test in the undesired direction resulting in poorer performance on every dependent variable except free through percentage. Only one criteria for the control group changed in the desired direction, from pre-test to post-test. Between group scores following intervention yielded no significant differences. Five of six performance criteria, however, favored the experimental group following intervention. Additionally,

Crossman found that the performance of all the subjects generally declined during the post-test period, she attributed this to stronger opposition; but the experimental group performed better overall than the control group.

Enns (1983) compared the thoughts selected Canadian male and female volleyball players had in various situations of the game. One hundred and forty-two volleyball players from the University of Saskatchewan administered the study questionnaire. Comparisons were made between male and female, experienced and inexperienced, and winning and non-winning players. The results indicated that players not only differed in their thoughts, but they also differed in their thoughts in different situations of the game. The author concluded that the Canadian male and female volleyball players participating in this study tended to be task oriented. They appeared to be self-oriented only when they had been unsuccessful in terms of winning and losing during the recent past. Past performance, as it pertained to winning and losing, appeared to be the most significant factor affecting the thoughts of these volleyball players.

Kirschenbaum and Bale (1980) administered the TAIS to nine golfers on the 1978 University of Cincinnati golf team. Pearson product-moment correlation coefficients were computed between mean 18-hole golf scores (based on 19 rounds for five players, 16 rounds for one player, 3 rounds for one player, and 2 rounds for one player) and each of the 17 TAIS subscales. Considering that low scores indicate

better golf skills, the significant correlations suggested that better golfers: (a) are extremely sensitive to external distraction (OET); (b) see themselves as non-analytic/philosophical (BET); (c) tend to narrow their attention too much (RED); and (d) tend to worry about specific things a great deal (OBS).

The authors suggested that a golf-specific TAIS might help more in identifying the attentional style of golfers because the Nideffer TAIS measure of attention in daily life is not sufficiently specific to performance on the golf course.

A tennis-specific version of Nideffer's Test of Attentional and Interpersonal Style (T-TAIS) was prepared by Van Schoyck and Grashsa (1981). They converted the 59 items of the first seven subscales of the TAIS (i.e., BET, OET, BIT, OIT, NAR, and RED). The T-TAIS items contained a specific tennis frame of reference. Tennis players (N=90) judged to be either beginning, intermediate, or advanced calibre served as subjects. They found that the T-TAIS had higher test-retest and internal consistency reliability coefficients than the TAIS and that this indicated a more reliable assessment of attentional style for tennis than the TAIS. Correlational and factor analysis data from the T-TAIS partially supported Nideffer's attentional dimension of width (narrow to broad attention) but did not support the direction dimension (internal to external). The T-TAIS showed a much more consistent relationship to tennis ability

than the TAIS. This was particularly evident in the increments in the scanning factor subscale scores as a function of increment in tennis skill. T-TAIS subscale scores also were better predictors of play than TAIS subscales. Results were consistent with current theories of attentional mechanisms and knowledge of skills required to play tennis. Data also indicated that sport-specific measures of attention are a more precise estimate of attentional processes in sport than is the general TAIS assessment.

Easterbrook (1959) has maintained that attention is closely related to anxiety and that anxiety serves to reduce the number of cues an individual is able to effectively use at one time. In confirming this, Nideffer (1978) found that swimmers' scores on the TAIS scales which load on the performance anxiety factor and the overloaded-impulsive factor correlated negatively and significantly with their coach's rating of performance. Being overloaded by external information (OET) and internal information (OIT) were significantly correlated with poor performance. The coach indicated that those swimmers scoring high on the scale measuring the tendency to make errors of underinclusion (RED) could be described as: 1) performing poorly, 2) allowing early mistakes to upset them, 3) choking under pressure, 4) worrying and being unable to think of anything else, 5) having difficulty planning ahead, and 6) being unwilling or unable to handle suggestions or advice.

Another study by Landers, Furst and Daniels (1981) also examined the relationship between anxiety and the TAIS attentional scales. The TAIS and Spielberger's trait anxiety (A-trait) scale were administered to 227 rifle, pistol, skeet, and trap shooters. They found that A-trait was postively related to the overload factors that were identified earlier by Van Schoyck and Grasha (1981) as the focus dimension of bandwidth (broad to narrow). Among open and closed skill shooters, high A-trait athletes were at least a full standard deviation higher on the overloaded and RED scales than low A-trait athletes. This relationship replicated the finding of an earlier study conducted by Landers and Courtet (1979). It appeared that low A-trait athletes, were generally the better shooters and were better able to control their focus of attention. They had the ability to concentrate without reducing their attention so much that they excluded task relevant cues. The authors also found that none of the other attentional scales differed as a function of level of A-trait.

Nideffer (1974) examined the response differences on the 17 TAIS subscales by comparing the scores of 74 males and 123 female introductory psychology students. These subjects were told that the data were being used to establish norms for the instrument. There were significant differences between males and females on five of the 17 TAIS subscales. Males described themselves as (a) better able to broaden and internally focus attention, (b) better able to

narrow attention when it was required, (c) more physically oriented, (d) more intellectually expressive, and (e) less expressive of positive affect.

Translation of the TAIS

The TAIS has been translated into several languages including French, German, Russian, Spanish, and Arabic. Yousif and Yousif (1983) administered the Arabic version of the TAIS to 23 Iraqi female volleyball players from the University of Baghdad. The authors found the ability to narrowly focus their attention to be their major strength. They become distracted when they try to integrate many external stimuli BET (e.g., reading opponent's tactics and strategies), and they become highly overloaded when they attempt to integrate and organize a large number of internal thoughts and perceptions (e.g., analysis of their team's performance, opposing team performance, etc.). These female athletes lacked self-confidence and tended to be critical of their teammates or coach. Such characteristics elicit anxiety and make these athletes more tense which impairs their performance. This may be attributed to old traditions and restriction on freedom of women which is peculiar to the female athlete in the Iraqi society.

TAIS Summary

As can be gathered from the studies covered in the previous section, the TAIS has now been used in studies on

athletes in several different sports and for several different reasons. To this date the results tend to be relatively equivocal. In some cases it is an accurate predictor of performance and/or performance anxiety, while in others there is some doubt as to its accuracy for predicting performance in highly specific terms and as to its constructs validity pertaining to the "directionality" of focus of attention. Unfortunately, the reverence in which the TAIS is held by psychologists working in clinical situations with athletes and businessmen is not documented as yet.

B. Achievement Motivation Literature

The study of achievement motivation began thirty years ago when McClelland and Atkinson formulated the theory of achievement motivation and wrote The Achievement Motive in 1953 along with Clark and Lowell. The theory of achievement motivation is concerned exclusively with motivation. Arkes and Garske (1977) indicated that this theory has been applied in many research studies for prediction of students' academic performance and the prediction of a country's economic growth. In sport and physical education this theory has also been used to study the differences between male and female athletes with regard to athletic achievement, improving sport performance success and failure, etc.

Atkinson and Feather (1966) state that "the theory of achievement motivation is a miniature system applied to a

specific context, the domain of achievement-oriented activities, which is characterized by the fact that the individual is responsible for the outcome (success or failure)." Nevertheless, Atkinson and Feather (1966) believe that the type of theory that views the strength of an individual's goal-directed tendency as being jointly determined by his motives, by his expectations about the consequences of his actions, and by the incentive values of expected consequences will have wider utility when these concepts are applied to the analysis of behavior in other kinds of situations directed toward other goals.

The work of these early researchers was instrumental in identifying the need to achieve: a relatively stable disposition to strive for achievement or success (Atkinson, 1966). The need to achieve was found to be a stable personality dimension developed in the child at an early age as the result of child-rearing practices stressing independence or mastery training. Generally, it has been found that certain achievement patterns are related to the level of the need to achieve: those with high need to achieve demonstrate a strong tendency to seek out and engage in achievement situations (Atkinson and Feather, 1966), to set realistic goals (Atkinson and Litwin, 1966; Atkinson and Feather, 1966; McClelland, 1958), to persist in a task (Feather, 1961; French and Thomas, 1958), to recall incompleted tasks (Atkinson, 1955), to derive pleasure from success, and to succeed (French, 1958; McClelland et al.,

1953; Warner and Abegglin, 1955). All the above patterns of behavior intuitively relate to the sports situation.

A second motive, fear of failure, was identified as a motive separate from, and in conflict with, the need to achieve. Fear of failure is a form of anxiety. Birrell (1978) believes that an individual characterized by a high fear of failure in an achievement situation will go to considerable lengths to avoid failure. The avoidance pattern can take several forms: 1) avoidance of participation in achievement situations, 2) attempts to redefine the achievement situation so that success and failure cannot readily be assessed (for example, by setting goals so high that no one could be expected to attain them), or 3) when all else fails, striving for success (Birney et al., 1969).

Atkinson (1964) indicates that the need to achieve is a positive motive, characterized by "a capacity to experience pride in accomplishment" and in 1974 he commented on the fear of failure as a negative motive characterized by "a capacity for reacting with humiliation and shame when one fails." The two motives are not polar opposites as Birrell mentioned. Fear of failure is <u>not</u> lack of a need to achieve, but rather a different achievement-related motive which interact to produce some interesting motivational combinations. Using the two dimensions, an individual can, therefore, be classified into one of four categories:

1. high need to achieve, low fear of failure
2. high need to achieve, high fear of failure

3. low need to achieve, low fear of failure
4. low need to achieve, high fear of failure

Atkinson and his associates (1960) state that men who are high in the need for achievement demonstrate a fairly strong preference for intermediate risk in a game requiring activity in which the outcome is contingent upon successful exercise of skill. On the other hand, men who are low in need for achievement generally prefer extreme probability alternatives in the same situation.

Low motive to achieve success scores can hardly be viewed as a measure of the strength of the motive to avoid failure.

Achievement Motivation in Sport

Achievement motivation has received considerable attention from researchers in sport psychology over the past 20 years. Some of these studies have been conducted to explore those elements that might help coaches and physical educators to enhance the performance of their athletes and/or students. Birrell (1978) indicates that, achievement motivation might be used to explain or predict both sport involvement (the approach tendency) and sport performance (the success tendency). In general,athletic groups and non-athletic groups have been distinguished in certain personality traits. Differences in evaluative instruments, samples, and statistics, from study to study, make it hard to obtain agreement on the specific dissimilarities of such

groups. For instance, Neal (1959), reported a significant differences between female elite athletes and non-athletes in the predicted direction but Dayries and Grimm (1970) found no significant relationship. Brunner (1969), Weinberg (1976) and Birrell (1977) found male athletes significantly higher on achievement motivation than male non-athletes, while Gorsuch (1968) found no such relationship.

Some research has found distinctions in personality between champion athletes and average athletes. Oglivie and Tutko (1967) feel they can characterize the outstanding athletes and distinguish them from lesser athletes. Among other characteristics they describe him as one who has a high need for achievement.

It appears that the need to achieve influences the goals that are set within a sport. Goal-setting behavior, and the personality disposition "n Ach" (i.e., need for achievement) were examined among 62 male students participating in a series of competitive handball contests. In this study Ostrow (1972) found that subjects experiencing continuous success generally set higher pre-contest goals and more realistic pre and post contest goals than subjects experiencing continuous failure. High n Ach subjects set more realistic goals and performed better under competitive conditions than low n Ach subjects, but this distinction was only found to be true in the subjects' first tournament contest. Two other researchers, Levy (1973) and Roberts (1975), reported on the expected relationship between

resultant achievement motivation and goal setting: individuals high on achievement motivation set intermediate goals for themselves significantly more often than did individuals high in fear of failure. Singer (1972) points out that the athlete with a high need to achieve probably sets a goal for himself that is reasonably difficult to attain. Because he needs to achieve, he does not set hopelessly unattainable goals. The person with a low achievement motive, however, is seen as unpredictable in his goal setting. It appears that no matter what motives interact to influence the setting of goals, a need to achieve must be present, though it may be latent or concealed.

Lefebver (1979) examined the relationships between achievement motivation and the cognitive attribution of athletic performances by outstanding Belgian athletes. He found that female athletes obtained a higher score than male athletes on intrinsic motivation, while the opposite was true with the positive fear of failure. Athletes attributed success more to internal than external factors, and failure more to external than internal factors. This study did not reveal significant differences between the Belgian male and female athletes on the achievement test.

Birrell (1978) cited Martens (1974) proposed theory of competition in sport which he distinguishes from a theory of achievement. He views competition as a specific form of achievement behavior and defines competitiveness as a motive

to achieve in the presence of evaluative others. The competition process has four stages:

1. The individual is confronted with an objective competitive situation, i.e., one in which the comparison of an individual's performance is made with some standard in the presence of at least one other person who is aware of the criterion for comparison and can evaluate the comparison process.
2. Subjective competition situation. During this stage, the individual appraises the objective competitive situation and makes a decision regarding whether to seek out or avoid that situation.
3. The third stage is the individual's response to the objective competitive situation, given in terms of his or her decision to participate in or to avoid the situation.
4. And finally, the consequence stage in which the individual reacts to the evaluation of his/her performance in comparison to the standard of performance.

Martens suggests that a motive, competitiveness, might have direct input into an individual's decision to approach or avoid a competitive situation. Although he may be the first to suggest such a motive, others have investigated the existence of a motive which shares a conceptual similarity: the need for power.

Sport-Specific Motive Scales

The literature showed that studies on achievement motivation have used general tests to measure n Ach, motive to achieve success (MAS) and motive to avoid failure (MAF). Birrell (1978) noted at least 13 different instruments that have been used in studies dealing with sport-related achievement motivation. These tests were as follows: Achievement Anxiety Test (Ach. Anx.), Adjective Check List (Adj), Children's Achievement Scale (CAS), Two Scales-Measure Achievement Motivation (Costello), Edwards Personal Performance Scheaule (EPPS), French Test of Insight (French), Lynn Achievement Motivation Questionnaire (Lynn), Taylor Manifest Anxiety Questionnaire (MAQ), Mehrabian Measure of Achieving Tendency (Mehrabian), Resultant Achievement Motivation (RAM), Speilberger State-Trait Anxiety Inventory (STAI), Thematic Apperception Test (TAT), Mandler-Sarason Test Anxiety Questionnaire (TAQ).

Birrell reported contradictory findings among these studies. She found only few studies have supported the hypothesis that achievement motivation is positively related to success in sport. Regardless of the specific test, when standard achievement motivation measures are used, no significant relationship is found. However, tests specifically designed for use in sport contests are more sensitive to differences in achievement motivation. She drew three conclusions: First, achievement motivation may not be a significant factor in predicting achievement behavior in

sport. Yet based on the theoretical logic supporting such a relationship, this seems unlikely. Second, achievement behavior in sport is complicated by the additional factor of competition, which may cloud this issue. Finally, a situation-specific measure is needed to measure motivation in that specific context.

Sport-specific scales were developed by Willis (1982) for power, achievement, and fear of failure. He called this test the "Sport Attitudes Inventory". Pilot testing resulted in 80 Likert-type items for the three scales which were administered to 764 males and 253 females. Subjects were junior high to college level athletes representing 17 sports and 22 schools or colleges. Item analysis further reduced the number of items to 40 (Appendix B). Alpha reliabilities for the three scales ranged from .76 to ,78. Whereas test-retest reliabilities after 8 weeks were .69 to .75.

Because no instruments directly corresponded to the constructs of power and achievement motivation in sport, Willis found that it was necessary to employ more general convergent measures of constructs. The one exception was the availability of the SCAT or sport competition Anxiety Test (Martens, 1977), which was used as a related measure of motive to avoid failure. The Mehrabian Measure of Achieving Tendency (Mehrabian and Bank, 1975) and the Dominance Scale of the California Psychological Inventory (Gough, 1969) were employed as convergent measures of motive to achieve success and power motive. Results of correlational studies between

the sport-specific motives and their related constructs are shown in table 2.

C. The Relationship Between Focus of Attention, Interpersonal Style, and Achievement Motivation

Performance and Arousal

There is a relation between attention and arousal. Different attentional demands cause corresponding variations of arousal, but variations of arousal also affect the focus of attention appropriate for different activities. The main law that relates performance to arousal is the Yerkes-Dodson law (1908), which states that the quality of performance on any task is an inverted U-shaped function of arousal, and that the range over which performance improves with increasing arousal varies with task complexity. These relationships are schematically illustrated in Figure 1.

Easterbrook (1959) presented a theory that was intended to explain both the decrement of task performance with increasing arousal, and the observation that this decrement occurs sooner in complex tasks than in simple ones. He proposed that an increase in arousal causes a restriction of the range of cues that an organism uses in the guidance of action.

This hypothesis explains the Yerkes-Dodson law as follows: Consider a task that requires the simultaneous processing of a certain number of cues. When arousal is low, selectivity is also low, and irrelevent cues are more likely to be rejected. With further increases of arousal, however, the continuing restriction of the range of usable cues eventually

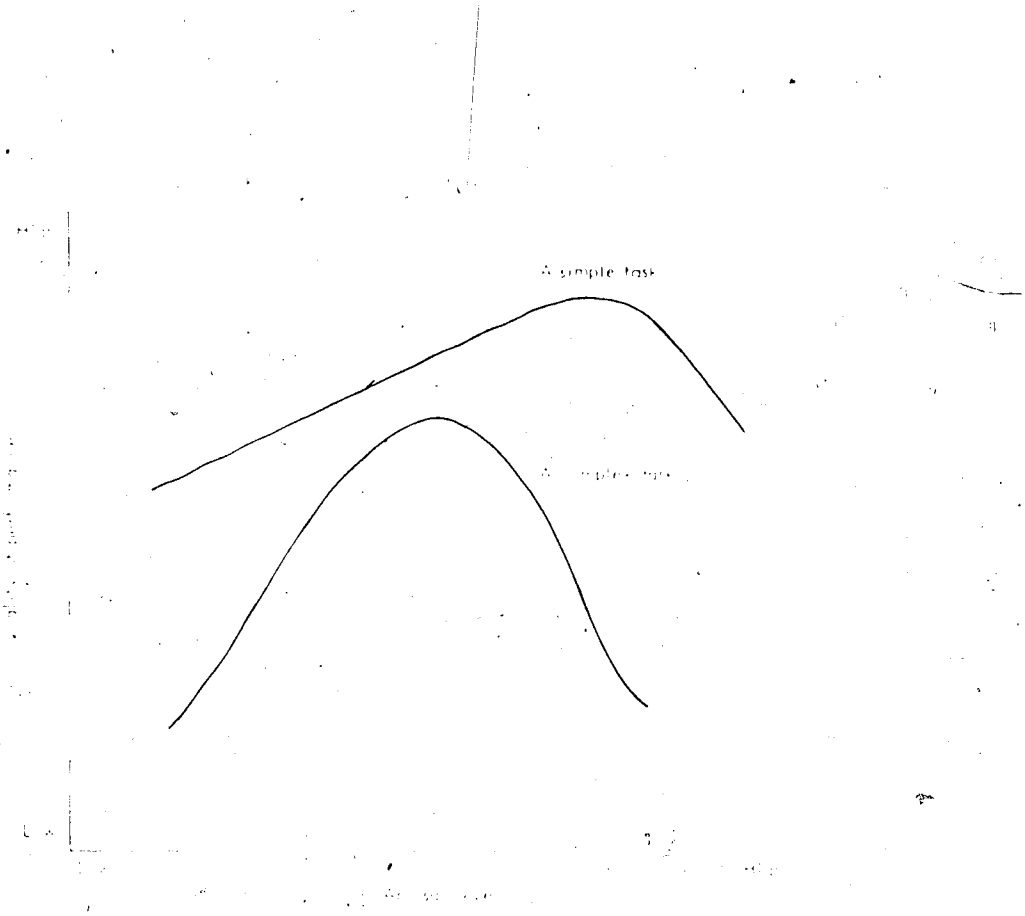

Figure 1

The Yerkes-Dodson Law

causes relevant cues to be ignored, and performance deteriorates again, With the additional assumption that the range of necessary cues is narrower for simple than for complex tasks, this argument implies that chronically over aroused individuals should perform poorly in complex tasks and relatively better in simple tasks.

Easterbrook marshalled considerable research support for the narrowing of attention under high arousal. For example, he cited an experiment by Bahrick, Fitts and Rankin (1952) in which subjects were engaged in two tasks, continuous tracking of a target, and monitoring the occurrence of occasional signals in the visual periphery. When the incentive pay for both tasks was increased, performance of the central task improved, and performance of the peripheral task deteriorated. Similar findings were also described by Bursil (1958) who manipulated arousal by making his subjects work under conditions of extreme heat and humidity. The balance of attention to central and peripheral tasks was altered in conditions of high arousal.

Broadbent (1971) has studied selective attention in high arousal. He suggests that the ability to select relevant stimuli's impaired by arousal. Subjects in his experiment were briefly shown an array of red and white digits and were asked to report as many digits of one specified color as they could observed. Performance in this selective task deteriorated under loud noise. In contrast, noise was associated with a slight performance improvement

when subjects were told to write as many digits as possible, regardless of color.

In Sport, many studies have utilized the Inverted U theory. A laboratory study by Martens and Landers (1970) illustrates the inverted U relationship displayed on a motor steadiness task. Motor performance was optimized at intermediate levels of stress. The physiological indicants of stress were present, with palmar sweating decreases from each subject's basal (pre-experimental) levels, associated with increasing physiological stress. In this study, arousal was induced by instructing subjects to believe that they had a high, moderate or zero probability of receiving an electric shock. (Actually no shocks were given, but the preadolescent males were convinced otherwise).

Many other investigators report similar findings as Bunker and Rotella (1980) cited them in their study. Fenz and Epstein (1969) have reported relationships between physiological measures, self-reports, and jumping efficiency in sport parachutists. Parker (1973) and Wood and Hokanson (1965) have observed a similar patterning of performance when arousal has been experimentally produced by varying muscle tension. Reaction time performance curves have also been found to resemble an inverted-U when total body exercise has been varied on a treadmill or bicycle ergometer (Babin, 1966; Levitt and Gutin, 1971). Overall, the weight of experimental evidence is in support of the inverted-U relationship, although there are a few experiments which

have not shown it (Pinneo, 1961; Murphy, 1966).

Bunker and Rotella (1980) mentioned that the findings of research designed to investigate the relationships between arousal and performance suggest two general conclusions:

1. The inverted-U hypothesis seem to generalize across field and experimental situations.
2. The inverted-U performance pattern generally exists for arousal induced either psychologically or physiologically (through drugs, exercise, or muscle tension).

With regard to motivation, moderate, rather than excessively high or low levels of motivation would produce optimal performance. The main points of departure from Yerkes and Dodson are congruent with Schroder, Driver and Streufert's (1967) suggestions, namely: (a) to replace the internal variable of "motivation" with external variables (such as task complexity), and (b) to replace the external variable, performance, with an internal variable: conceptual level.

The Yerkes-Dodson law also explains some puzzling differences in the response to noise stress shown by introverts and extroverts. Kahneman (1973) cited many studies which explained these differences. Although extroverts are more lively than introverts, research evidence suggests that they are chronically less aroused (Corcoran, 1965; Eysenck, 1967). Correspondingly, the

gradual deterioration of performance in continuous watch - keeping, called the vigilance decrement, is normally more severe for extroverts than for introverts (Bakan, Belton & Toth, 1963; Broadbent, 1963). As may be expected from this analysis, extroverts engaged in a watch-keeping task benefit more from the presentation of noise than do introverts (Davies & Hockey, 1966; Davis, Hockey and Taylor, 1969). Presumably, the arousal level of extroverts tends to be suboptimal, and it is restored by the presentation of noise.

Information Processing, Interpersonal Style and Achievement Motivation

Schroder, Driver and Streufert (1967) indicate that the integrative complexity of the person's attitudinal and interpersonal information processing style is expected to have a considerable influence on interaction and evolvement of group organizations. The higher the conceptual level of group members: (a) the greater the diversity of information and alternative perspectives, producing new and more creative adaptive orientations; (b) the less members define themselves by the content or directionality of their own judgments, attitudes or beliefs (this higher capacity to adopt each other's perspectives as new organizations leads to better interpersonal relations particularly under conditions of disagreement and the involvement of a higher-level information processing structure; and (c) the less salient the power orientation and the lower the

probability of aggression under conditions of intragroup or intergroup conflict.

As they emphasize the role of conceptual level of selection or assessment programs. They say that the more a task can be successfully performed by a fixed, predetermined set of procedure (and providing the task and interpersonal roles remain static or can be prescribed), the less the significance of structural variables. But in changing task environments in which the environment and the adapting persons interact, and in which exploration and alterate goals, means, strategies, and decisions are required, information-processing variables should be weighted more heavily.

They view the successful performance in most complex reactive task environment as requires (a) sufficient performance skills and knowledge, (b) a near optimal level of interest or motivation, (c) adequate competence in interpersonal relations (since most complex task environments require group activity for decision-making purposes), and (d) the capacity to engage in complex information processing.

Chapter III

METHOD AND PROCEDURE

A. The Sample

One hundred and twenty three subjects participated in the study. All subjects were volleyball players and members of eleven high school volleyball teams in Edmonton, Alberta during the academic year 1983-84.

Of the 123 subjects, 59 were males and 64 were females. The mean age for the total sample was 16.6 years.

B. The Instruments

Two instruments were used in this study:

1. Test of Attentional and Interpersonal Style (TAIS):

The Test of Attentional and Interpersonal Style (TAIS) consists of 144 questions selected rationally and grouped into 17 scales which have been separated into three major areas.[2] The first six scales are associated with how effective an individual is in controlling both the width and direction of his/her attention. The next two scales (7-8) on the test reflect the amount of information individuals process and the amount of control they exert over their own behavior. The third group of scales (9-17) provides information about different aspects of interpersonal behavior.

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[2] TAIS 17 scale descriptions are available in Appendix A.

2. The Sport Attitudes Inventory (SAI):

The Sport Attitudes Inventory consists of 40 questions selected rationally and grouped into 3 scales.[3] The SAI is a sport-specific motive scale, developed for power, achievement and fear of failure.

C. Procedure

All subjects were administered the two instruments, i.e., the Test of Attentional and Interpersonal Style (TAIS) and the Sports Attitude Inventory (SAI).

1. The subjects' responses of the TAIS were scored and profiled.
2. The subjects' responses of the SAI were scored.
3. Twelve subjects (i.e., 10% of the total sample) were selected to administer the athlete worksheet and for personal interview four months after the administration of the study instruments.
4. Three coaches of the above mentioned 12 subjects administered the coach worksheet and personal interviews were conducted with them to discuss their athletes' attentional and interpersonal profiles and the relationship between these profiles and the athletes' motives to achieve success, avoid failure and power.

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[3] SAI questions and scales are available in Appendix B.

D. Statistical Analysis

Means, standard diviations and t test were calculated order to compare between males and females with respect to their attentional and interpersonal style, motive to achieve success, motive to avoid failure and power motive.

Pearson Product Moment correlation matrices were obtained to identify the relationship between the three Sports Attitude Inventory scales and the 17 Test of Attentional and Interpersonal style scales.

A Factor Analysis was performed on the 17 Test of Attentional and Interpersonal Style scales by conducting a principal components analysis. The resulting principal factors were used as a set of reference axes for rotation to the "varimax" criterion (Kaiser, 1958). The factor loadings were used to obtain the relationship between the TAIS factors and motive to achieve success, motive to avoid failure and power motive.

A multiple linear regression analysis was used for the prediction of the 17 TAIS variables from knowing the person's scores on motive to achieve success and motive to avoid failure. All the TAIS variables were treated as dependent and MAS and MAF were treated as independent variables.

E. Qualitative Analysis Procedure

Both worksheets* (i.e. one for athletes, one for coaches) and interview (i.e. 10% of the subjects and their coaches) methods of gathering data were utilized. This part of the study dealt with the analysis of qualitative data. The discision to include the worksheets and interview techniques for obtaining formation was based on the expectation that these two techniques would allow for more in-depth study and lead to a greater understanding of the study's problems. The athlete worksheet (Appendix C) was a self-administered interview regarding the Test of Attentional and Interpersonal Style (TAIS) 17 subscales. An explanatory statement was given regarding each subscale followed by questions designed to clarify the subject's opinion. The coach worksheet (Appendix D) was developed in an attempt to know how these subjects who answered the worksheet's questions were perceived by their coaches. The interviews were a verbal interactional exchange which helped to elicit information and expressions of opinions and beliefs from the interviewees.

After the subjects answers on the TAIS were scored and profiled, a sub-sample was selected to administer the worksheets and then to be interviewed. The criteria that was used for selecting the sub-sample was based on the uniqueness of the subject's attentional profile. This uniqueness depended on how high or low were the scores of a

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*Both athlete and coach worksheets are available in Appendices C and D.

subject on the TAIS subscales are. For example, when someone indicated an effective attentional style (i.e. scores on BET, BIT and NAR are high or very high and scores on OET, OIT and RED are low or very low). Or when someone indicated an ineffective attentional style (i.e. scores on OET, OIT and RED were high or very high and scores on BET, BIT and NAR were low or very low).

Chapter IV

RESULTS AND DISCUSSION

The findings of this study generally revolve around five major aspects. First is the descriptive data (i.e. raw scores, means, standard deviations, etc.) generated from administering the two tests (the TAIS and the SAI) to the sample group of athletes which consisted of both male (N=59) and female (N=64) high school volleyball players. In a study such as this one, which is essentially exploratory in nature, the descriptive data can provide a base from which one can examine the validity and usefulness of the data when it's interrelationships are analyzed. This data also provides us with information on the psychological profiles of young athletes and how they generally related to the stress of athletic competition.

The second aspect of the data treatment was concerned with examining the "factor" structure of the TAIS. It was felt that a factor analytic approach, at this stage, could provide additional information on:

1. How an athlete's attentional and interpersonal style helps or hinders his or her ability to handle the stress of competition.
2. How attentional and/or interpersonal style operate during the acquisition of athletic skills or when the athlete is dealing with basic sport strategies.
3. Substantiating previous factor analytic studies on the TAIS.

From the descriptive base and the TAIS factor structure, the third thrust of this study is to explore the relationships between the constructs embedded in the two tests. Here the attempt is made to examine whether or not achievement motivation is connected to the attentional and interpersonal style of young athletes and whether or not such relationships, if they exist, have meaning within the context of athletic competition.

The fourth aspect of the data treatment focused on multiple linear regression in order to test whether or not scores on the motive to achieve success (MAS) and motive to avoid failure (MAF) could predict various TAIS variables. The fifth aspect was concerned with examining the "construct validity" of the power motive (POW) in the SAI.

A. Descriptive Data

The Sports Attitude Inventory (SAI)

The descriptive data on the SAI (TABLE 1) showed similar average scores on the three motives by both males and females. A t-test established that no statistically significant differences existed between the two groups of males and females, although the motive to avoid failure (MAF) was relatively high for both males and females.

TABLE I

Mean Difference Scores, Standard Deviations and t-test Results of the SAI Variables

	Females N=64		Males N=59		Males & Females N=123		
Variable	M	SD	M	SD	M	SD	t-test
MAS	68.33	6.78	69.63	7.11	69.96	6.94	.982
MAF	33.33	[illegible]	33.27	6.05	33.30	6.03	.707
POS	43.92	5.65	44.17	5.50	44.04	5.55	.853

p = < .05

Generally, this means these high school volleyball players have an inclination to approach success (MAS) and see themselves as having the capacity to produce effects, either consciously or unconsciously, on the behavior or feelings of their opponents, particularly in sport achievement situations. In addition, the relatively high (i.e. their raw scores were 60% of the maximum) motives to avoid failure (MAF) by both groups indicates these athletes are also aware of the unpleasantness associated with failure. Atkinson (1964) has described this feeling as a capacity for reacting with shame and embarrassment when the outcome of performance is perceived as failure. He feels this is a situation where anxiety combines with a tendency to withdraw and thus a high avoidance of situations where performance is evaluated occurs.

The interrelationships between the three motives (Table 2) further confirmed Willis' (1982) findings (Table 3) that motive to achieve success (MAS) and the power motive (POW) are significantly correlated ($r=.59$) and that motive to avoid failure (MAF) and the power motive (POW) indicate a negative relationship ($r=-.03$). These relationships are also consistent with Varga's (1975) findings. It would seem, then, that people who have the desire or the drive for success also possess strong desires for power and for control over other people. This is particularly apt in sport where controlling one's opponents is an inherent aspect of success in competition. The low, but significant correlation

TABLE 2. SAI INTERSCALE CORRELATIONS

	MAS	MAF	POW
MAS	---	---	---
MAF	.18*	---	---
POW	.59*	-.03	---

*p < .01
N=123

TABLE 3: SAI INTERSCALE CORRELTATIONS (WILLIS, 1982)

SAMPLE 1: N=996

	MAS	MAF	POW
MAS			
MAF	.22*		
POWER	.51*	-.04	

SAMPLE 2: N=142

	MAS	MAF	POW
MAS			
MAF	.12		
POW	.50*	-.01	

* p < .01

between MAS and MAF (r=.18) probably means that the athletes in this group, though highly motivated to pursue success in sport, still maintain an awareness of failure and it's concomittant unpleasantness.

The Test of Attentional and Interpersonal Style (TAIS)

The descriptive data and t-test comparisons of male and female scale scores for the TAIS can be found in Table 4. the mean scores of the male, female, and combined groups

Generally, there were few surprises in the TAIS descriptive data. Although, no athlete "norms" exist for the TAIS, whenever groups of athletes are tested,[5] their "mean" profiles generally show, for example, that they:

1. Are attentionally effective (i.e. their effective attentional scales - BET, BIT and NAR are higher than their ineffective attentional scales - OET, OIT and RED).
2. Tend to process large amounts of information (INFP).
3. Have strong needs for control (CON).
4. Have high self-esteem (SES).
5. Score high in physical orientation (P/O).
6. Score high in extraversion (EXT) and lower in introversion (INT)
7. Tend to be lower in expressiveness (IEX).

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[5] This general view of athlete TAIS profiles comes from studies by Nideffer (1978), Nideffer/Pratt (1982), Van Schoyck and Grasha (1981).

TABLE 4

Means Differences Scores, Standard Deviations, and t-test Results of the TAIS Variables

	Females N=67		Males N=59		Males & Females N=123		
Variable	M	SD	M	SD	M	SD	t-test
BET	15.77	2.54	14.98	3.36	15.39	2.97	.0308*
OET	19.42	5.30	18.73	4.78	19.10	5.06	.434
BIT	18.30	3.36	19.36	4.17	18.81	3.80	.097
OIT	14.39	4.75	13.67	3.76	14.05	4.31	.076
NAR	24.84	4.72	25.90	5.06	25.34	4.89	.591
RED	25.67	5.49	26.72	4.36	26.17	5.09	.080
INFP	46.97	6.44	45.41	8.86	46.22	7.70	.0158*
BCON	20.73	5.34	21.08	4.78	20.90	5.06	.390
CON	46.06	8.22	46.98	8.84	46.50	7.55	.0078*
SES	28.02	8.51	29.56	8.54	28.75	8.54	.977
P/O	20.98	3.15	19.73	4.62	20.38	3.96	.0038*
OBS	15.19	4.01	15.63	4.23	15.40	4.05	.099
EXT	32.30	6.20	31.76	6.12	32.04	6.14	.918
INT	19.94	4.65	20.91	4.45	20.40	4.56	.748
IEX	15.05	3.96	16.02	4.21	15.98	4.18	.626
NAE	11.66	4.59	13.30	4.48	12.43	4.60	.854
PAE	22.84	4.79	21.78	4.98	22.33	4.89	.762

*p < .05

8. And higher in confrontiveness (NAE) and supportiveness (PAE).

The only slight departure from this general profile picture was that the female group had a higher OIT score than their BIT score. The indication here is that, as a group, the female volleyball players in this sample saw themselves as becoming overloaded in situations requiring them to deal with, analyze, and integrate large amounts of internal information (i.e. thought, feelings, etc.). This, however, was only a minimal departure as evidenced by the fact that although the male group showed an effective attentional gradient (i.e. BIT OIT their OIT score (13.67) was not significantly different from the female group (OIT=14.39).

However, significant differences between males and females did occur in the following TAIS scales:

1. Females were significantly higher on BET, INFP, and P O than males.
2. Males were significantly higher on CON than females.

Although the raw score differences between the two groups in these subscales were quite small, they were statistically different and this indicates that for these volleyball players:

1. Females broaden their attentional focus better than males, they process more information and see themselves as more physically oriented than males.
2. Males have higher control needs than females.

These athlete differences contrast to Nideffer's (1976) norm group findings in that, for the undergraduate psychology majors, males were higher than females in BET and P/O. One could speculate, that if such findings were consistently replicated in subsequent studies, the differences would probably be attributed to the fact that female athletes are quite different than female psychology majors in terms of their awareness to external events and of their inclination toward physical activity.

B. Factor Analysis of the TAIS

Factor analysis refers to a variety of statistical techniques whose common objective is to reduce a set of variables into a smaller number of hypothetical constructs. This method is normally applied to tables or matrices of correlation coefficients (usually product-moment correlation coefficients) even though other measures or indices of associations may be used (Ferguson, 1981; Kim and Mueller, 1978).

Factor analysis is based on the assumption that a certain number of underlying factors, which are smaller in number than the number of observed variables, are responsible for the covariation among the observed variables in terms of this study, the attempt revolved around the factor stucture of variables in the TAIS and how this structure could better describe athletes scoring high on the TAIS scales. To further supplement an understanding of these

varimax-rotated factor loadings for the TAIS variables a comparison of them with Nideffer's (1982) similar factor structure was implemented. Nideffer used a principal components analysis followed by rotation to a varimax criterion.

Specifically, this part of the study was an attempt to explore:

1. Whether or not attentional and interpersonal style provides insight into how athlete's cope with and control the stress of competition.
2. Whether or not attentional and interpersonal style influences how an athlete deals with sports strategies and/or skills.

The decision was made to pursue this analysis with a rotational method. The "varimax" criterion emphasizes the "cleaning up" of factors rather than variables and the varimax rotation method tends to yield high loadings for a few variables and near zero loadings for the remainder. In this way, the domain under question is reduced to the simplest and most easily interpretable set of factors.

The correlational matrix on the 17 TAIS variables in this study was subjected to a principal components analysis and seventeen roots greater than unity were extracted (Table 1). In view of the relative similarity in size of the latent root numbers six to seventeen, it was decided to use Cattell's (1962) "scree" test to determine the number of components for further analysis.

The "scree" test (Figure 2) was made by plotting the size of the latent roots against their frequency and smoothing the curve as seen in Figure 2, the point of uniform fall-off of the curve begins at root number five. Since these first components had roots greater than unity, it was decided to proceed with these components for further interpretation.

The five principal components were rotated in accordance with the varimax criterion using Kaiser's (1958) strict limit approach. An extract of the resulting factor loadings are shown in Table 5. As can be seen in Figure 2, the five principal factors accounted for 74.9 percent of the variance.

The five principal components which were rotated were labeled in accordance with their obvious similarity with the five factors identified by Nideffer (1982) and the apparent constructs underlying each of the five clusters of intercorrelations. Each of these five factors and their significant variable loadings were illustrated in Table 5.

TABLE

[illegible] FACTOR [illegible]

I.	ATTENTIONALLY [illegible]	
	Broad external attentional focus (BEF)	.69
	Broad internal attentional focus (BIF)	.65
	Information processing (INFO)	.83
	Control (CON)	.85
	Self-esteem (SES)	.74
	Physical [illegible]	.64
	Extroversion (EXT)	.89
	Introversion (INT)	.67
	Positive affect expression (PAE)	.71
II.	PERFORMANCE ANXIETY	
	Overloaded by external stimuli (OBE)	.50
	Overloaded by internal stimuli (OBI)	.39
	Reduced [illegible]	.00
	Obbs. (OBS)	.80
III.	OVERLOADED	
	Overloaded by external stimuli (OBE)	.65
	Broad internal attentional focus (BIF)	.41
	Overloaded by internal stimuli (OBI)	.69
	Narrow attentional focus (NAR)	-.80
IV.	ANGRY [illegible]	
	Behavior control (BCON)	.80
	Negative affect expression (NAE)	.41
V.	INTROVERTED	
	Introversion (INT)	.80
	Positive affect expression (PAE)	-.56

Figure 2

SCREE PLOT OF EIGENVALUES FROM TAIS FACTOR ANALYSIS

FACTOR I: Attentionally Effective

Those variables with significant loadings on this factor were as follows:

BET:	.69	SES:	.74
BIT:	.65	[illegible]:	.64
INFP:	.82	EXT:	.82
CON:	.85	[illegible]:	.67
		PAE:	.71

The nature of this factor suggested a measure of attentional effectivess in dealing with large numbers of both broad external and broad internal stimuili. High scores by an athlete on these scales would indicate an ability to shift attentional focus easily and a self confidence in both social and intellectual situations. Such an athlete is also describing himself/herself as liking challenges and as having high energy levels. All such aspects being seen as necessary for attentional effectiveness in most team sports situations.

FACTOR II: Performance Anxiety

Those variables with significant loadings on this factor were as follows:

OET:	.50	RED:	.90
OIT:	.39	OBS:	.89

These four variables were considered as being representative of performance anxiety. Athletes who score high on these scales make mistakes because they overload themselves with too much thinking and analysis, they are distracted by too many external stimuli and when required to

narrow for task execution, they over-narrow their focus of attention. In addition, during a performance situation they tend to worry or ruminate about one particular thing which interferes with their ability to make clear, quick decisions. A typical manifestation of this factor might be what is described as "choking" under pressure.

FACTOR III: Overloaded

Those variables with significant loadings on this factor were as follows:

OET:	.64	BIT:	-.41
OIT:	.69	NAR:	-.89

The factor described by these loadings is essentially an ineffective attentional set due to an overloading of too much information. Athletes who score high on OET and OIT and low on BIT and NAR are typically ineffective in performance situations because they are distracted and confused from attending to and thinking about too many things. They also have difficulty in clearly analyzing all this information they're taking in and in narrowing their focus of attention for task performance. Such athletes, under overloaded conditions, would have a limited attentional focus, little capacity for shifting from one focus to another and less decision-making capacity. This would increase the probability or error in both their physical performance and their choice of various game strategies.

FACTOR IV: Angry Impulsive

Those variables with significant loadings on this factor were as follows:

NAE: .91
BCON: .82

Here was represented a tendency toward anti-social behavior. Athletes who score high on these scales not only express their anger or resentment toward others, they probably do so in a non-conventional manner. These are athletes who critize their coaches, bicker with their teammates, and engage in considerable self-criticism.

FACTOR V: Introverted

Those variables with significant loadings on this factor were as follows:

INT: .89
PAE: -.56

This factor provided an indication of an athlete's need for privacy (Nideffer 1976). A high scorer on this factor would describe a person who prefers to be alone, enjoys quiet thoughtful times, and avoids being the center of attention. Such a person would also be inclined to avoid expressing positive affection towards others. This factor represents a rather logical personality style in which positive, outgoing expressiveness is reduced as the person becomes more "introverted".

Comparison of Factor Analytic Results with Nideffer's Findings.

As can be seen in Table 6, the resultant factor structure from this study is comparable to those reported by Nideffer and Pratt (1982). He reported that studies on several different populations have indicated a very stable factor structure for the TAIS. This structure is composed of six factors, or clusterings, that account for about 85 percent of the variance in scores, independent of gender, culture, or occupation. This basic factor structure was found with American, Canadian and German college students, for police, musicians, psychologists, criminal justice students, and for marital couples (Phillips 1978; Schmelzer 1981; LaMotte 1981; Boney 1982). Table 6 represents the varimax-rotated factor loadings for the six factors as described by Nideffer and Pratt (1982) and the factor structure of this study.

Comparable factors from this study and those reported by Nideffer are:

1. Attentionally effective
2. Overloaded
3. Performance anxiety
4. Angry-Impulsive

However, two major differences did occur. First was that, whereas Nideffer extracted six factors, with Physical Orientation (i.e. loadings from CON, SES and P/O) as the sixth factor, only five factors were extracted in this

study. This was due mainly to this study utilizing a roof greater than unity as a cut-off. The variables loading on Nideffer and Pratt's sixth factor (CON, SES and P/O) loaded on this study's Factor I (Attentional Effectiveness) thus reducing the overlap in the variable loadings.

The second major departure from Nideffer and Pratt's factor structure was the loading of Factor V (Introversion) as compared to Nideffer's Factor III (Extroverted). This may be due only to interpretation of factor loadings. Nideffer does not interpret his Extroversion factor on the strength of the high PAE loading but rather on the high EXT loading. The relationship of PAE to INT in this study was the same as that found in Nideffer's results.

In spite of these differences, the similarity of these factor structures would indicate sufficient validity of this study's factors to be used for comparison with the SAI factors under examination.

TABLE 6

Comparison Between Nideffer's and Yousif's
TAIS Factor Structure

YOUSIF'S TAIS FACTOR STRUCTURE		NIDEFFER'S TAIS FACTOR STRUCTURE				
	(Athletes) (N115)		College (N 265)	German (N 258)	Eastman (N 223)	Police (N170)	Patien (N 78)
I. ATTENTIONALLY EFFECTIVE		I. ATTENTIONALLY EFFECTIVE					
BET	.69	BIT	.79	.83	.78	.90	.81
BIT	.65	INEF	.88	.86	.87	.84	.82
INEF	.82	CON	.41	.56	.47	.52	.83
CON	.85	SES	.34	.51	.33	.54	.69
SES	.74	BET	.81	.82	.85	.61	.86
P/O	.64	IEX	---	---	---	.54	.74
EXT	.82	EXT	---	---	---	.51	.75
IEX	.62						
PAE	.71						
II. PERFORMANCE ANXIETY		II. OVERLOADED					
OET	.50	OIT	.73	.73	.47	.43	.41
OIT	.39	NAR	-.81	-.79	-.90	-.70	-.85
RED	.90	OET	.81	.79	---	---	---
OBS	.89	BCON	.81	.38	---	---	---
		NAE	.41	---	---	---	---
III. OVERLOADED		III. EXTROVERTED					
OET	.64	EXT	.77	.63	.79	.66	---
BIT	-.41	INT	-.84	-.89	-.86	-.47	---
OIT	.69	PAE	.88	.89	---	---	---
NAR	-.89	SES	.46	.31	---	---	---
IV. ANGRY-IMPULSIVE		IV. PERFORMANCE ANXIETY					
BCON	.82	RED	.87	.88	.84	.88	.85
NAE	.91	OBS	.91	.89	.81	.81	.89
		OIT	.43	.34	.67	.70	.70
		OET	---	.29	.58	.71	---
		NAR	---	.34	---	---	---
V. INTROVERTED		V. ANGRY-IMPULSIVE					
INT	.89	NAE	.73	.93	.89	.77	.68
PAE	-.56	BCON	---	.77	.81	.69	.76
		IEX	.83	---	---	---	---
		CON	.50	---	---	---	---
		VI. PHYSICAL ORIENTATION					
		CON	.60	.61	.50	.77	---
		SES	.42	.50	.38	.47	---
		P/O	.94	.94	.95	.69	.83

Note: All analysis were principal components analyses, with varimax rotations.

C. SAI/TAIS RELATIONSHIPS

SAI/TAIS Scale Intercorrelations

The relationship between the constructs embedded in the two tests was examined in two ways. First, a correlational matrix was generated between the three motive scalesof the SAI (i.e., MAS, MAF, POW) with each of the 17 TAIS subscales. These correlation coefficients and t-test significances can be found in Table 7. The second method was to examine the correlations between the three motive scales of the SAI and the five varimax factors of the TAIS.

Pearson product-moment correlation coefficients were calculated between each of the 17 TAIS subscales and the three SAI motive scales. In examining the correlational matrix generated by this procedure (Table 7), and (Figure III) one can see that though the coefficients ranged only from low to moderate, several statistically significant relationships did appear. Probably, the most striking feature is that the MAS and POW scales not only correlated with a fairly high number of the TAIS scales (i.e. 10/17), they essentially correlated significantly with the same ones. (The only exceptions were MAS with OIT and POW with NAR). It was also interesting to note that of the three significant MAF/TAIS subscale correlations, two of them (MAF/BCON and MAF/NAE) occurred when neither MAS or POW were

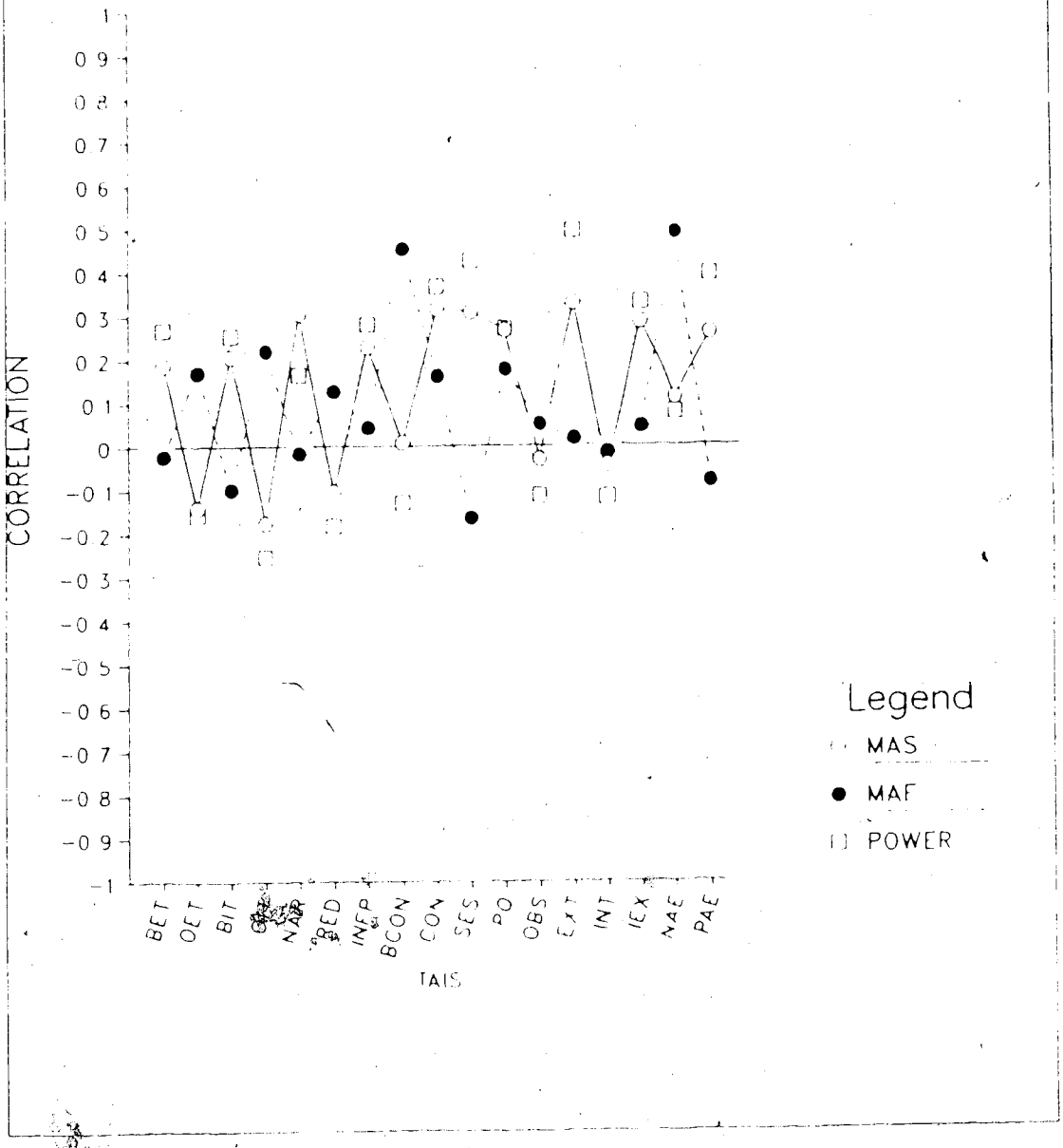
TABLE 7. TAIS and SAI Intercorrelation Matrix

	BET	OET	BIT	OIT	NAR	RED	INFP	BOON	CON	SES	P/O	OBS	EXT	INT	IEX	NAE	PAE
MAS	.19*	-.14	.21*	-.18	.30*	-.11	.25*	.01	.45*	.31*	.26*	-.03	.33*	-.04	.25*	.13	.25*
MAF	-.02	.17	-.10	.22*	-.02	.13	.04	.45*	.1[illegible]	-.1[illegible]	.18	-.05	.02	-.02	.04	.49*	-.[illegible]8
POW	.27*	-.16	.25*	-.25*	.16	-.18	.28*	-.13	.37*	.42*	.27*	-.11	.49*	-.12	.33*	.[illegible]*	.39*

*p < .01
n = 123

Figure 1

CORRELATIONS OF SAI SCORES WITH TAIS SCORES



significantly correlated with that particular TAIS subscale. This will be discussed and interpreted shortly.

The low but significant correlations between MAS and the three attentional scales (BET, BIT and NAR) would seem to indicate that athletes possessing a tendency for achievement in sport have a good command of attentional abilities. These athletes have the ability to assess and analyze situations which confront them in sport. This is generally supported, by the previously reported high correlations between MAS and POW ((r=.59; Table 2) and the supporting significant correlations between MAS and POW with the TAIS subscale of CON (respectively r=.31 and r=.37; Table 7).

In terms of interpersonal style, the same trend seems to be evident. The strong motives for success in achievement settings (MAS and POW) show significant correlations with high self-esteem (MAS/SES r=.31) and (POW/SES r=.42), high extraversion (MAS/EXT r=.33) and (POW/EXT r=.49), moderate intellectual expressiveness (MAS/IEX r=.28) and (POW/IEX r=.33) and high supportiveness (MAS/PAE r=.26) and (POW/PAE r=.39). Again this might suggest that certain interpersonal traits or characteristics that seem to be related to success in sport* are also related to the important "motives" for success in team sport.

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*Here the suggestion is made that individuals who have "made" a high school volleyball team can be considered as "successful" in team sport.

The relationships between MAF (motive to avoid failure) and the 17 TAIS subscales show only three significant correlations, each of which (OIT, BCON and NAE) have a negative connotation. Motive to avoid failure (MAF) and OIT (internal overload) show a low but significant correlation of r=.22. This could possibly indicate that young volleyball players possessing moderately high tendencies to avoid achievement situations see themselves as becoming overloaded by too many internal thoughts and/or feelings. The relatively high correlations between MAF and BCON (r=.45) and NAE (r=.49) indicate that young athletes who avoid achievement situations, see themselves as having less self control than the normal population and as engaging in an "above normal" amount of both self-criticism and criticism of others.

It was decided at this point that the correlational matrix between the SAI and TAIS scales indicated enough of a conceptual relationship between the two instruments to warrant a more intensive exploration of the relationship between achievement motivation and attentional and interpersonal style. To this end, a factor analysis of the TAIS data in this study was initiated to examine whether or not the "factor structure" inherent in attentional and interpersonal style was related to the SAI Scales.

SAI Scales and TAIS Factors Intercorrelations

A matrix was obtained for the correlations between factors, attentional effectiveness, performance anxiety, overloaded, angry-impulsiveness and introversion and the three SAI scales motive to achieve success (MAS), motive to avoid failure (MAF) and power motive (POW) as shown in Table 8 and Figure IV.

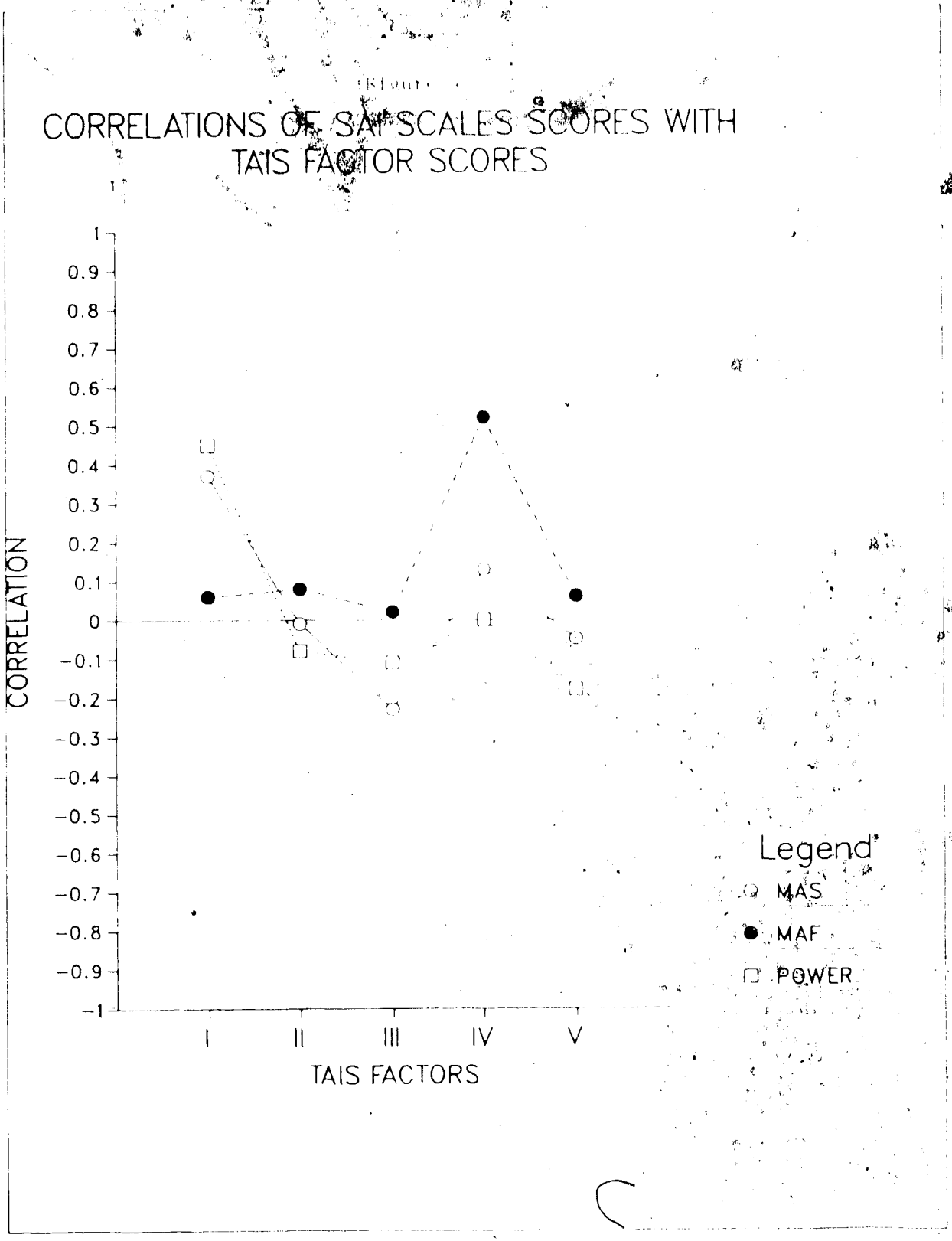
TABLE 8. TAIS FACTORS AND SAI SCALES CORRELATIONS

		MAS	MAF	POW
I.	Attentional Effectiveness	.37*	.06	.45*
II.	Performance Anxiety	-.01	.08	-.08
III.	Overloaded	-.23*	.02	-.11
IV.	Anger-Impulsiveness	.13	.52*	.00
V.	Introverted	-.05	.06	-.18

*p < .01, N=115

As can be seen in Table 8 that relatively low correlations were obtained, indicating moderate to slight relationship between the TAIS five factors and the SAI three scales.

A statistically significant correlation was formed for the first factor, Attentionally Effective and MAS (motive to achieve success) (r=.37) and POW (power motive) (r=.45). Thus, volleyball players who are attentionally effective in sports activities tend to accompanied increase in their motive to achieve success and power motive. Effective attention insports, it would seem then; is related to the


CORRELATIONS OF SAI SCALES SCORES WITH TAIS FACTOR SCORES
CORRELATION
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
−0.1
−0.2
−0.3
−0.4
−0.5
−0.6
−0.7
−0.8
−0.9
−1
I
II
III
IV
V
TAIS FACTORS
Legend
MAS
MAF
POWER

need to achieve success and to produce effects on the behavior or feelings of opposition players in a competitive athletic activity. On the other hand, an insignificant relationship was found between this factor (attentionally effective) and MAF (motive to avoid failure) (r=.06)..

An insignificant relationship was found between the second factor (performance anxiety) and the SAI scales MAS, MAF and POW.

Although the correlations between Factor III Overloaded and the SAI constructs are relatively low, a marginally significant negative relationship (r=-23) was obtained between MAS and Overloaded suggesting that individuals who have a tendency for success in sports activities do not likely get attentionally overloaded and vice versa.

Motive to avoid failure (MAF) has a positive moderate relationship with Factor IV Angry-Impulsive (r=.52) which indicates that individuals who have an inclination to avoid failure in sports activities are likely to express their anger and negative feelings to others as well as a tendency to be somewhat impulsive.

The correlation of Factor V with MAS and MAF is low (r=-.05 and .06). It has a statistically significant but low negative correlation (r=.18) with the Power Motive (POW) suggesting that introverted individuals do not attempt to gain control of situations and/or the behaviors and feelings of others in sports activities.

D. Multiple Linear Regression

The purpose of the multiple linear regression aspect of the investigation was to test whether or not scores on the motive to achieve success (MAS) and motive to avoid failure (MAF) could predict various TAIS variables.

Both motive to achieve success (MAS) and motive to avoid failure (MAF) were treated as independent variables and the Test of Attentional and Interpersonal Style (TAIS) variables were treated as the dependent variables. The results of the multiple regression data revealed low to moderate correlation coefficient. Results in Tables 9 and 10 indicated low to moderate multiple R between MAS, MAF, and the TAIS variables. This suggests that a prediction can be made of an athlete's score on the 14 TAIS scales by knowing his/her scores on MAS and MAF. The other TAIS variables that cannot be predicted using the MAS and MAF scores were: RED (reduced attentional focus), OBS (obsessive) and INT (introversion). However, 12 TAIS variables are predictive of MAS. The most predictible variables were CON (control or leadership) (Multiple R=.37); EXT (extroversion) (Multiple R=.36) P/O (physical orientation) (Multiple R=.32); NAR (narrow focus of attention) (Multiple R=.31); OIT (overloaded by internal stimuli) (Multiple R=.31); SES (self-esteem) (Multiple R=.30). The six TAIS variables less predictable via the

TABLE 9
LINEAR REGRESSION OF DEPENDENT TAIS VARIABLES
ON MOTIVE TO ACHIEVE SUCCESS (MAS)

	DEPENDENT VARIABLES	MULTIPLE R	R-SQUARE	F-LEVEL	P-LEVEL
1.	BET	.23	.05	6.55	.01
2.	OET*	.26	.07	4.32	.01
3.	BIT	.24	.05	6.04	.01
4.	OIT*	.31	.09	6.08	.003
5.	NAR	.31	.09	12.30	.0007
6.	INFP	.28	.08	9.97	.002
7.	CON	.37	.14	17.81	.0001
8.	SES*	.30	.09	11.13	.001
9.	P/O*	.32	.10	12.85	.0005
10.	EXT	.36	.13	16.55	.0001
11.	IEX	.29	.08	10.50	.001
12.	PAE	.28	.07	9.69	.002

TABLE 10
LINEAR REGRESSION OF DEPENDENT TAIS VARIABLES
ON MOTIVE TO AVOID FAILURE

	DEPENDENT VARIABLES	MULTIPLE R	R-SQUARE	F-LEVEL	P-LEVEL
1.	OET*	.18	.03	3.98	.05
2.	OIT*	.21	.05	5.60	.01
3.	BCON	.46	.21	30.55	.0001
4.	SES*	.38	.15	9.91	.0001
5.	P/O*	.37	.14	8.82	.0003
6.	NAE	.47	.22	31.96	.0001

*Variables which were found dependent on MAS and MAF at the same time.

athlete's score on MAS were: IEX, PAE, INFP, OET, BIT, and BET.

Six TAIS variables can be predicted from a person's score on MAF. The most predictable variables are NAE (negative affect expression) (Multiple R=.47) and BCON (behavior control) (Multiple R=.46). MAF scores can give a clue for the prediction of SES (self-esteem) (Multiple R=.38) and P/O (physical orientation) (Multiple R=.37), OIT (overloaded by internal stimuli) (Multiple R=.21), and OET (overloaded by external stimuli) (Multiple R=.18).

The amount of variance[1] accounted for in predicting the TAIS variables from knowing the scores on MAS and MAF is shown in Tables 11 and 12. The highest prediction percentage between MAS and the TAIS variables was 13.69 percent (CON). While the highest prediction percentage between MAF and the TAIS variable was 22.09 percent (NAE). In general, an athlete's score on MAS may help to predict his/her scores on twelve TAIS scales namely BET, OET, BIT, OIT, NAR, INFP, CON, SES, P/O, EXT, IEX, PAE. While his/her score on MAF may help to predict only six of his/her scores on the TAIS scales, namely: OET, OIT, BCON, SES, P/O, NAE. Prediction of the impulsive-angry tendency is well conected with the score of an athlete on MAF, (percentage of BCON prediction = 21.16%; percentage of NAE prediction = 22.09%). This indicates that individuals who have the tendency to avoid failure may have difficulty delaying gratification and

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[1]Esitmate of variance is made by squaring the multiple R and multiplying by 100.

TABLE 11
PERCENTAGE OF PREDICTION OF THE TAIS VARIABLES
THROUGH THE IDENTIFICATION OF THE MAS SCORE

TAIS VARIABLES	MULTIPLE R	PERCENTAGE OF PREDICTION
BET	.23	5.29
OET	.26	6.76
BIT	.24	5.76
OIT	.31	9.61
NAR	.31	9.61
INFP	.28	7.84
CON	.37	13.69
SES	.30	9
P/O	.32	10.24
EXT	.36	12.96
IEX	.29	8.41
PAF	.28	7.84

TABLE 12
PERCENTAGE OF PREDICTION OF THE TAIS VARIABLES
THROUGH THE IDENTIFICATION OF THE MAF SCORE

TAIS VARIABLES	MULTIPLE R	PERCENTAGE OF PREDICTION
OET	.18	3.24
OIT	.21	4.41
BCON	.46	21.16
SES	.38	14.44
P/O	.37	13.69
NAF	.47	22.09

therefore act impulsively. In addition, they express their anger and negative feelings to others and tend to be critical of others and themselves.

Prediction of Control-extroversion characteristic is well connected with the score of an athlete on MAS; (percentage of CON prediction = 13.69; percentage of EXT prediction = 12.96). This indicates that an athlete who has a high tendency to achieve success in sports situations is in control of most situations, interpersonal and otherwise he/she is seen as wanting to gain control or taking charge of these situations.

E. Construct Validity of the Power Motive

Construct validity of the Power Motive (POW) of the Sports Attitude Inventory (SAI) was examined by correlating subjects' scores on this scale with their scores on the control scale (CON) of the Test of Attentional and Interpersonal Style (TAIS). Construct validity for the power scale is supported, given the statistically significant correlation of POW to CON ($r=.36$). Given the moderate correlation, however, further investigation regarding the construct "POWER" is needed.

F. Qualitative Analysis

The subjects found the interviews interesting and beneficial to them whereas they were less inclined toward the worksheet. This may be due to the elaboration needed

from them regarding some questions.

On the basis of the answers of subjects and coaches to the worksheet and interview questions, the following conclusions seem warranted:

1. There was some disagreement between the answers of the subjects and their coaches. This disagreement was on attentional ability when some coaches could not agree with a description of their own athletes' attentional strength and weaknesses especially regarding the broad external focus of attention and narrow focus of attention. The subjects showed agreement with their coaches description of their interpersonal weaknesses and strength. Both subjects and coaches viewed the investigator's interpretations of the subjects' TAIS profiles as highly accurate and they expressed agreement on almost every point raised by the investigator regarding their attentional and interpersonal style. This agreement added more confirmation to the validity and reliability of the Test of Attentional and Interpersonal Style.
2. Most of the subjects expressed a lack of knowledge as to the mental aspects of their sport. They lacked information on appropriate kinds of thinking and anticipation during play and also how to cope with stress and anxiety when they are under pressure. They do not know anything about mental rehearsal and what to do to overcome their attentional problems. They are more

concerned with the physical and technical aspect of their sport. They found it very interesting to know about the aforementioned aspects and how to turn their weaknesses into strengths and how to utilize their strengths appropriately.

3. Some of the female interviewees felt that the TAIS data gave them a better understanding of themselves. They were in agreement when the investigator explained to them their interpersonal styles, especially those concerning their self-esteem, depression and anxiety. They agreed with the TAIS findings and welcomed the investigator's recommendation to seek advice regarding their interpersonal styles.

4. The interviews confirmed the relationships explained in the Correlation Coefficients part of this study. The investigator asked the subjects to rate their abilities on each of the TAIS subscales and their motives to achieve success and avoiding failure. The investigator found that those subjects who expressed a high need to achieve success and little concern with avoiding failure rated themselves relatively high on the attentional scales of BET, BIT and NAR and control and interpersonal scales of INFP, CON, SES and EXT. Those who expressed a high need to avoid failure perceived themselves relatively high on the overloaded scales of OET, OIT and RED and control and interpersonal scales of BCON and NAE.

5. Meetings with the subjects and coaches revealed a high need to provide psychological consulting services on a continuous basis for school and amateur sport teams. See Appendix E for more details regarding Sport Psychology Centres.

Chapter V

General Discussion

Nideffer (1976b) suggests that an understanding of an athlete's particular attentional style can be used to help explain his/her past successes and failures in competitive situations. In addition, he states that an athlete's attentional style can be used to predict how he/she will perform under a velocity of new situations. His idea is that the success and failure can be predicted on the basis of the athlete's attentional processes implies that his/her ability to control the width and direction of attention is constant across competitive situations. This study supported such an idea because of the relationship found between the attentional variables and the achievement motivation motives. This relationship could be used for the benefit of coaches and athletes in order to enhance athletes' performance and to reinforce the behavior tendency to approach success in sport situations.

With reference to successful performance, Schroder, Driver and Streufert (1967) refer to it as requiring: (a) sufficient performance skills and knowledge, (b) a near optimal level of interest or motivation, (b) adequate competence in interpersonal relations (since most complex task environments require group activity for decision making purposes), and (d) the capacity to engage in complex information processing.

A theoretical model can be drawn from the description by Schroder et al., (1967) of successful performance in most complex reactive task environments of which sport performance is only one example. Figure 3, illustrates this model in terms of performance demands and an assessment of these demands. Skill and knowledge sufficient for sport performance can be assessed by the coach who is aware of his sport and its related physical and technical skills, tactics and strategies. In addition, an athlete's level of motivation and tendency toward success and failure can be assessed through the use of the Sports Attitude Inventory (SAI) which facilitate working with groups and teams in motivation training and ultimately in diagnosis for the counselling of individuals. Adequate interpersonal relations can be assessed through the use of the Test of Attentional and Interpersonal Style(TAIS). The capacity to engage in complex information processing of which focus of attention is an essential part and can be assessed through the use of the TAIS.

Nideffer (1981) says that when attentional and interpersonal and performance relevant characteristics are accurately assessed:

6. A treatment focus is provided by telling the therapist where to look to better understand problems or symptoms.
7. Feedback of the results will provide structure and therapeutic directions for the athletes, giving them hope, confidence in themselves and the therapists, and

reducing the anxiety that has been interfering with effective functioning.

8. Results of the test lead directly to treatment recommendations. It is easy to use test information to identify the attentional and/or interpersonal processes that athletes need to be able to modify their behavior. The sport psychologist or coach's job then becomes that of finding the most effective way to affect change, given the athlete's needs, ability to change and the situational conditions.

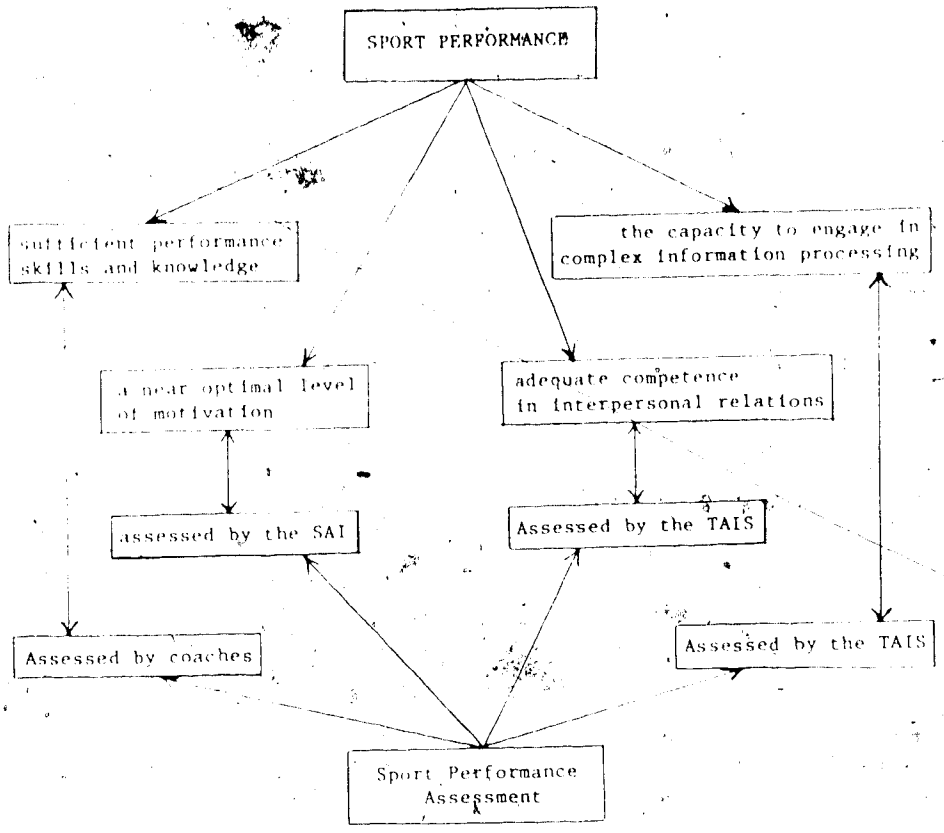

Figure 5
A Preliminary Model to Help Coaches and Athletes in Enhancing Sport Performance

Chapter VI

Summary, Conclusions And Recommendations

A. Summary

The central purpose of this study was to investigate the realtionship between an athlete's motive to achieve success, motive to avoid failure, power motive, and his her attentional and interpersonal style.

One hundred and twenty three (59 males and 64 females) volleyball players from eleven high school teams in Edmonton were administered two questionnaires: the Test of Attentional and Interpersonal Style (TAIS) (Nideffer, 1976) and the Sports Attitudes Inventory (SAI) (Willis, 1982). Ten percent of the total sample were selected to fill out an Athlete Worksheet and for personal interviews. Coaches of those subjects who were administered the Athlete Worksheet and interviews, were given a Coach Worksheet and interviewed as well.

Data included means, standard deviations and t-tests for both male and female groups regarding the TAIS and SAI. A factor analysis was performed on the 17 TAIS scales. The resulting principal factors were used as a set of reference axes for rotation to the "varimax" criterion. Correlations matrices were obtained to identify the relationship between the three SAI scales and the 17 TAIS scales as well as five extracted TAIS Factors. A multiple linear regression was utilized to test whether or not scores on the motive to

achieve success (MAS) and motive to avoid failure (MAF) could predict the TAIS variables. The construct validity of the power motive (POW) scale in the SAI was tested by correlating the scores of subjects on the POW scale with their scores on the CON scale in the TAIS.

No statistically significant differences were found between male and female young athletes with regard to their motive to achieve success, avoiding failure, drive for power or for control over other people. However, significant differences between males and females did occur on some of the TAIS scales. Females saw themselves as better in broadening their focus of attention as processing more information and as being more physically oriented than males. Males were higher in control needs than females.

The factor analysis revealed five TAIS factors, namely: attentionally effective, performance anxiety, overloaded, angry-impulsive and introverted. The first four factors are comparable with to those reported by Nideffer (1982). Two major differences, however, occurred between the factor structure of this study and that of Nideffer (1982). First, whereas Nideffer extracted the Physical Orientation factor (i.e., loadings from CON, SES and P/O) as the sixth factor, only five factors were extracted in this study. The variables on Nideffer's sixth factor (CON, SES and P/O) loaded on this study's Factor I (Attentionally Effective) thus reducing the overlap in the variable loadings.

The second major difference with Nideffer's factor structure was the loading of Factor V (Introverted) as compared to Nideffer's Factor III (Extroverted). This may be due only to interpretation of factor loadings. They do not interpret his Extroversion factor on the strength of the high PAE loading, but rather on the high EXT loading.

The correlation coefficients between the SAI scales and the TAIS subscales and factors ranged from low to moderate, although, several statistically significant relationships did appear. The variables MAS and POW correlated with ten of seventeen TAIS subscales. Both MAS and POW correlated with the same ten TAIS subscales with two exceptions. The relationships between MAF and the 17 TAIS subscales showed only three significant correlations: OIT, BCON and NAE.

The correlational matrix between the SAI and TAIS scales indicated a sufficient conceptual relationship between the two instruments to warrant a more intensive exploration of the relationship between achievement motivation and attentional and interpersonal style.

Correlations between the SAI scales and the five TAIS factors indicated moderate to slight relationship between them. Factor I, Attentionally Effective, formed the highest correlations with MAS and MAF, while Factor IV, Angry-Impulsive, formed the highest correlation with MAF.

The multiple linear regression data revealed low to moderate multiple R's between the the TAIS scales and the MAS and MAF scores. The estimates of prediction between the

MAS and the TAIS variables was 13.69 percent (CON). The the highest prediction estimate between MAF and the TAIS variables was 22.09 percent (NAE).

Construct validity of the Power motive (POW) of the SAI was examined by correlating scores of the same subjects on this scale with their scores on the control scales (CON) of the TAIS. Construct validity for POW is supported, given the statistically significant correlation of (r=.36), and this would suggest a need for further investigation regarding the construct "Power".

Worksheets and interviews showed that the TAIS is a valid and reliable instrument for use with athletes since both athletes and coaches viewed the TAIS profiles interpretation as highly accurate.

In addition, interviews with athletes and coaches revealed a general need to provide psychological consulting services on a continuous basis for scholastic and amateur athletes.

A model was suggested to help coaches and athletes enhance their performance based on performance demands and an assessment of these demands.

B. Conclusions And Recommendations

1. No significant sex differences were evident, based on the present study of motives to achieve success, avoid failure or gain control over people.
2. Significant sex differences were found on several TAIS

scales suggesting that females have a broader focus of attention, process more information, and are more physically oriented than males. Males were seen to have greater control needs than the female athletes. Further research is needed to explore these differences.

3. Factirial validity of the TAIS scale was partially conformed. The TAIS factor structure generally remains the same, regardless of different samples.
4. Use of the TAIS scale to assist coaches in developing performance skills in their athletes is supported in the present study. Profile information gave coaches a better understanding of the attentional and interpersonal features of their athletes.
5. It was anticipated that a stronger relationship would appear between the "motive" variables (for success or avoiding failure) and the athletes' attentional and interpersonal styles. Minimal prediction was possible at the interpersonal level, given knowledge of an athlete's desire to succeed. Further research is needed to explore other psychological constructs that may be more predictive of attentional and interpersonal style. Such studies could well examine the predictive validity of constructs like cognitive style (field dependence/independence), focus of control (internal vs. external) and self-efficacy (self-esteem). A cognitive model could then be used to place these findings within a consistent theroretical framework.

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APPENDICES

APPENDIX A

THE TEST OF ATTENTIONAL AND INTERPERSONAL STYLE (TAIS) SCALE

Attentional Variables

BET — (Broad External attentional focus): High scores on this scale are obtained by individuals who describe themselves as being able to integrate effectively many external stimuli at one time. They know what is going on around them at all times. Can spot the open teammate in sports. Have what police call a "stress sense".

OET — (Overloaded by External stimuli): The higher the score, the more individuals make mistakes because they become confused and overloaded with external stimuli, i.e., distracted.

BIT — (Broad Internal attentional focus): High scores indicate individuals who see themselves as able to integrate effectively ideas and information from several different areas. Accordingly, they are analytical and philosophical. Good at planning ahead and anticipating consequences. They tend to be creative and ideational.

OIT — (Overloaded by Internal stimuli): The higher the score, the more mistakes individuals make because they confuse or distract themselves by thinking about too many things at once, becoming lost in thought, daydreaming.

NAR — (Narrow attentional focus): The higher the score, the more effective individuals see themselves with respect to being able to narrow their attention when they need to (e.g., to study or watch a ball). They sustain concentration on one person, item, or thought. Typically they are good at finishing tasks before starting others.

RED — (Reduced attentional focus): A high score on this scale indicates that the individual makes mistakes because s/he narrows his or her attention too much, such as on irrelevant fears (of failure) or distracting noises.

Control Variables

INFP — (Information Processing): High scorers tend to process a great deal of stimulus information. Their perceptual-cognitive worlds are busy which is usually in line with their preference.

BCON (Behavior Control): A high score indicates the individual tends to have difficulty delaying gratification and therefore acts impulsively. In addition, such people often engage in behavior which could be considered anti-social, though not necessarily harmful. Low scorers play by the rules, are responsible.

Interpersonal Variables

CON (Control scale): A high score indicates the individual is in control of most situations, interpersonal and otherwise. It also means s/he attempts to gain control of situations, i.e., take charge.

SES (Self esteem): The higher the score, the more highly the individual thinks of him or herself (or presents him or herself as confident). The score which is graphed is SES minus DEPression.

DEP (Depression): High scores indicate that the person gets down on him or herself, feels guilty or ashamed and a burden to others. Often the condition is temporary. High is 8 or above.

P/O (Physical Orientation): A high score indicates the individual participates in and enjoys competitive athletics. This scale is generally loaded against women who were discouraged from being athletically active in their youth.

OBS (Obsessive): A high score indicates the person has a tendency to ruminate and worry about one particular thing without any real resolution or movement. It is often associated with characteristic anxiety causing difficulty with deadlines. Low scorers make decisions quickly.

EXTR (Extroversion): A high score indicates the individual is outgoing, needs to be with other people, likes to be the center of attention, the proverbial life of the party. The complete extrovert is also high on PAE.

INTR (Introversion): A high score indicates the person likes to be alone, enjoys quiet thoughtful times, and avoids being the center of attention. It does not indicate a dislike of other people necessarily.

On the TAIS a person can score high on both EXTRoversion and INTRoversion.

IEX (Intellectual Expression): A high score indicates the person expresses his or her thoughts and ideas to other people. High scorers like to talk.

NAE (Negative Affect Expression): A high score indicates the person expresses his or her anger and negative feelings to others. High scorers tend to be critical of others and often themselves.

PAE (Positive Affect Expression): A high score indicates the person expresses his or her feelings of affection to others in both physical (e.g., hugs) and verbal (e.g., compliments) ways. Such people like others and need to be liked.

Test of Attentional and Interpersonal Style

1. When people talk to me I find myself distracted by the sights and sounds around me.
2. When people talk to me I find myself distracted by my own thoughts and ideas.
3. All I need is a little information and I can come up with a large number of ideas.
4. My thoughts are limited to the objects and people in my immediate surroundings.
5. I need to have all the information before I say or do anything.
6. The work I do is focused and narrow, proceeding in a logical fashion.
7. I run back and forth from task to task.
8. I seem to work in "fits and starts" or "bits and pieces".
9. The work I do involves a wide variety of seemingly unrelated material and ideas.
10. My thoughts and associations come so rapidly I can't keep up with them.
11. The world seems to be a booming buzzing brilliant flash of color and confusion.
12. When I make a mistake it is because I did not wait to get all of the information.
13. When I make a mistake it is because I waited too long and got too much information.
14. When I read it is easy to block out everything but the book.
15. I focus on one small part of what a person says and miss the total message.
16. In school I failed to wait for the teachers' instructions.
17. I have difficulty clearing my mind of a single thought or idea.
18. I think about one thing at a time.
19. I get caught up in my thoughts and become oblivious to what is going on around me.
20. I theorize and philosophize.
21. I enjoy quiet, thoughtful times.

22. I would rather be feeling and experiencing the world than my own thoughts.

23. My environment is exciting and keeps me involved.

24. My interests are broader than most people's.

25. My interests are narrower than most people's.

26. It is easy for me to direct my attention and focus narrowly on something.

27. It is easy for me to focus on a number of things at the same time.

28. It is easy for me to keep thoughts from interfering with something I am watching or listening to.

29. It is easy for me to keep sights and sounds from interfering with my thoughts.

30. Happenings or objects grab my attention.

31. It is easy for me to keep my mind on a single thought or idea.

32. I am good at picking a voice or instrument out of a piece of music that I am listening to.

33. With so much going on around me, it's difficult for me to think about anything for any length of time.

34. I am good at quickly analyzing complex situations around me, such as how a play is developing in football or which of four or five kids started a fight.

35. At stores I am faced with so many choices I can't make up my mind.

36. I spend a great deal of my time thinking about all kinds of ideas I have.

37. I figure out how to respond to others by imaging myself in their situation.

38. In school I would become distracted and didn't stick to the subject.

39. When I get anxious or nervous my attention becomes narrow and I fail to see important things that are going around me.

40. Even though I am not hungry, if something I like is placed in front of me, I'll eat it.

41. I am more of a doing kind of person than a thinking one.

42. In a room filled with children or out on a playing field, I know what everyone is doing.

43. It is easy for me to keep my mind on a single sight or sound.

44. I am good at rapidly scanning crowds and picking out a particular person or face.

45. I have difficulty shifting back and forth from one conversation to another.

46. I get confused trying to watch activities such as a football game or circus where a number of things are happening at the same time.

47. I have so many things on my mind that I become confused and forgetful.

48. On essay tests my answers are (were) too narrow and don't cover the topic.

49. It is easy for me to forget about problems by watching a good movie or by listening to music.

50. I can't resist temptation when it is right in front of me.

51. In games I make mistakes because I am watching what one person does and forget about the others.

52. I can plan several moves ahead in complicated games like bridge and chess.

53. In school I was not a "thinker".

54. In a roomful of people I can keep track of several conversations at the same time.

55. I have difficulty telling how others feel by watching them and listening to them talk.

56. People have to repeat things to me because I become distracted by irrelevant sights or sounds around me.

57. I make mistakes because I try to do too many things at once.

58. I am good at analyzing situations and predicting in advance what others will do.

59. On essay tests my answers are (were) too broad, bringing in irrelevant information.

60. People fool me because I don't bother to analyze the things that they say; I take them at face value.

61. I would much rather be doing something than just sitting around thinking.

62. I make mistakes because my thoughts get stuck on one idea or feeling.

63. I am constantly analyzing people and situations.

64. I get confused at busy intersections.

65. I am good at glancing at a large area and quickly picking out several objects, such as in those hidden figure drawings in children's magazines.

66. I get anxious and block out everything on tests.

67. Even when I am involved in a game or sport, my mind is going a mile a minute.

68. I can figure out how to respond to others just by looking at them.

69. I have a tendency to get involved in a conversation and forget important things like a pot on the stove, or like leaving the motor running on the car.

70. It is easy for me to bring together ideas from a number of different areas.

71. Sometimes lights and sounds come at me so rapidly they make me lightheaded or dizzy.

72. People have to repeat things because I get distracted by my own irrelevant thoughts.

73. People pull the wool over my eyes because I fail to see when they are obviously kidding by looking at the way they are smiling or listening to their joking tone.

74. I can spend a lot of time just looking at things with my mind almost a complete blank except for reflecting the things that I see.

75. I sometimes confuse others because I tell them too many things at once.

76. I engage in physical activity.

77. People describe me as serious.

78. I sit alone listening to music.

79. People take advantage of me.

80. I keep my thoughts to myself.

81. I keep my feelings to myself.

82. I am good at getting my own way.

83. I like to argue.

84. Others see me as a loner.

85. I talked a lot in class when I was in school.

86. I enjoy intellectual competition with others.

87. I enjoy individual athletic competition.

88. I compete(d) athletically.

89. I physically express my feelings of affection.

90. I compete with myself intellectually.

91. I compete with myself physically.

92. I enjoy activities with danger or an element of the unknown in them.

93. I express my opinions on issues.

94. I can keep a secret.

95. When I believe deeply in something I find I am a poor loser and unable to compromise.

96. I am socially self-confident when interacting with those who are like myself.

97. I am socially self-confident when interacting with authority figures.

98. I am socially self-confident when talking in front of large groups.

99. I am socially self-confident when talking with the opposite sex.

100. I express my anger.

101. I dated in high school.

102. People think I am a clown.

103. I get mad and express it.

104. I get down on myself.

105. I was one of the smartest kids in school.

106. I am a good person.

107. My feelings are intense.

108. I need to help others.

109. I need to be liked.

110. I enjoy planning for the future.

111. I wish I lived in a different time.

112. I geel guilty.

113. I feel ashamed.

114. I am seen as a cold person by others.

115. I am a good mixer.

116. I am socially outgoing.

117. I have difficulty waiting for good things to happen.

118. I peeked at Christmas time.

119. When I am angry I lose control and say things that sometimes hurt others.

120. I have been angry enough that I physically hurt someone.

121. At dances or parties I find a corner and avoid the limelight.

122. I acted in dramatic productions in high school and/or college.

123. In school the kids I hung around with were athletes.

124. In school the kids I hung around with were intellectuals.

125. In school the kids I hung around with were popular.

126. In school the kids I hung around with were outcasts or loners.

127. People trust me with their secrets.

128. I am in control in interpersonal situations.

129. I fought in school.

130. I have used illegal drugs.

131. In groups I am one of the leaders.

132. People admire me for my intellect.

133. People admire me for my physical ability.

134. People admire me for my concern for others.

135. People admire me for my social status.

136. I ran for class offices in school.

137. I feel as though I am a burden to others.

138. People see me as an angry person.

139. I see myself as an angry person.

140. I have a lot of energy for my age.

141. I am always on the go.

142. I cut school in high school.

143. I have engaged in activities that could get me in trouble with the police.

144. I guess you could call me a poor loser.

APPENDIX B

Sports Attitudes Inventory

This questionnaire is designed to assess your reactions to situations which often arise in the sports setting. Please answer all questions on the separate answer sheet. Do not mark on the questionnaire! There are no right or wrong answers.

Please use the following scale to indicate your agreement or disagreement with each statement.

A - Strongly Agree
B - Agree
C - Neither Agree nor Disagree
D - Disagree
E - Strongly Disagree

1. I have the ability to get my teammates "fired up" to play.
2. Before a game I don't worry too much about what is going to happen.
3. Teammates respect the way I hustle.
4. The night before a game, I don't find it difficult to sleep.
5. Recognition from the coach makes a hard practice seem worthwhile.
6. I do not enjoy being a team leader.
7. It is hard work rather than luck that leads to success.
8. I often take a loss harder than I should.
9. Winning a game gives me great satisfaction.
10. Others do not see me as outstanding competitor.
11. I would be willing to work all year around in order to be a success in my sport.
12. I am nervous and fidgety right before a game.
13. I enjoy thinking about my past successes in sports.
14. I don't seem to be as tough as most of my teammates.
15. I seem to play better when spectators are present.
16. Teammates respect my leadership ability.
17. I admire athletes who are willing to put in extra practice time to improve their skills.

18. I seem to play best against highly skilled opponents.

19. I work hard at my sport in the hope of gaining recognition.

20. After losing a game, I find it difficult to sleep.

21. I am not pleased with my athletic ability.

22. Sometimes when I lose it bothers me for several days.

23. Making a "big play" gives me a thrill.

24. Teammates admire my persistence and determination.

25. I usually feel butterflies in my stomach just before a game.

26. My goal is to become outstanding in some sport.

27. In head-to-head competition with someone of my own ability, I lose more often than I win.

28. I get excited just talking to someone about a game.

29. I try very hard to be the best.

30. During a game if I blow a play it takes a while for me to shake it off.

31. I like to forget my sport in the off season.

32. I enjoy having people see me perform.

33. I try to get other players to train hard.

34. When I play, I get so caught up in a game I temporarily lose contact with reality.

35. I enjoy any assignment which others find difficult.

36. Being a good athlete is not important to me.

37. I enjoy making suggestions which will hel teammate's play.

38. When I make a mistake, it bothers me the rest of the game.

39. I have a very strong desire to be successful in sports.

40. It is hard for me to stay calm before a game.

Instructions for the Sports Attitudes Inventory

The 40 item questionnaire is attached. It may be reproduced in its present form or restructured. The present format is convenient for machine scoring.

I. Scale Items

A. Power - Items numbered 1, 3, 6, 10, 14, 16, 18, 21, 24, 27, 33, 37 comprise Pow Scale.

B. Motive to Achieve Success - Items numbered 5, 7, 9, 11, 13, 15, 17, 19, 23, 26, 29, 31, 32, 35, 36, 39 make up the MAS Scale.

C. Motive to Avoid Failure - Items numbered 2, 4, 8, 12, 20, 22, 25, 30, 34, 38, 40 make up the MAF Scale.

II. Scoring

Items 1, 3, 5, 7, 8, 9, 11, 12, 13, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 28, 29, 30, 32, 33, 34, 35, 37, 38, 39 40 should be scored as follows:

A - Strongly agree	= 5
B - Agree	= 4
C = Neither agree nor disagree	= 3
D - Disagree	= 2
E = Strongly disagree	= 1

For items, 2, 4, 6, 10, 14, 21, 27, 31, 36 score in the opposite direction, (i.e., A - Strongly agree = 1, etc.)

APPENDIX C

TEST OF ATTENTIONAL AND INTERPERSONAL STYLE
WORKSHEETS

Regardless of how you scored on each of the TAIS scales, there will be many different and highly specific situations in your sport which we were unable to refer to in your profile interpretation. These worksheets are designed to give us this information and to give you the opportunity to better understand how your scale scores relate specifically to performance in specific situations. Please fill these worksheets out at your leisure and bring them back. Thank you.

Name: .....

Team: .....

Sex: .....

Date: .....

1. BET - Broad-External Focus of Attention

This is the scale that deals with your capacity to rapidly scan a large amount of information in your external environment and integrate it effectively. It is also your capacity to detect and react quickly to sudden changes in the patterns of stimuli occurring in the external world.

Athletes who score high on BET see themselves as:

1. Being able to "read" or assess a defense or offense and react quickly to what is happening.
2. Being aware of the flow of events at any moment in time.
3. Having a good sense of position, space, and time.
4. Being able to react quickly to changes in play.

Questions

1. Describe specific situations in volleyball which require a broad-external focus of attention.

2. Describe those situations where, if you are in a BET focus, your performance will be hindered or disrupted.

3. Indicate when it is necessary to shift quickly from BET to another style (i.e., BIT or NAR), or from another style to BET in your performance.

4. If you have trouble in situations requiring a BET focus, what drills in practice could you suggest for overcoming such problems?

5. Do you know any volleyball athlete with whom you associate a lot, who is quite different from you on BET? If so, what have you learned about ways to make your relationship more productive?

2. OET - Overloaded by External Stimuli

A high OET score indicates a person who is attending to too much information or to too many stimuli in his/her external environment. Confusion usually results because of this overload and is usually due to the person attending to non-task-relevant stimuli. Thus, he/she becomes distracted and his/her concentration is negatively affected.

Questions

1. What specific things (i.e., objects, events, or people) in your external volleyball environment that are not task-relevant do you tend to notice?

2. Which external things upset you the most? For example, officials, the score, fans booing, etc.

3. How would you rate your ability in coping with external distractions?

4. Do you feel you are normally distracted by external things such as a pretty girl acting as a linesperson, etc.?

5. What is the best way an opponent can "psych" you out? For example, get you mad, lull you to sleep, etc.

3. BIT - Broad-Internal Focus of Attention

This is the scale that deals with your capacity to think about many things all at once, effectively integrate ideas, and then construct a plan or make a decision. It is also your ability to organize a large amount of information in your head and figure out appropriate strategies and tactics. It is the ability to recall information out of the past, mix it with current events, and draw logical conclusions. Someone who has a strong BIT style tends to be "absentminded" because he's not aware of what's going on around him. Also, such a person rarely experiences anything without analyzing what it means and without projecting anticipated results into the future.

Athletes who score high on BIT see themselves as:

1. Being able to analyze what's going on.
2. Being able to plan strategy and tactics very quickly.
3. Being able to make decisions that are correct.
4. Having the ability to prepare mentally for competition.

Questions

1. What specific situations in volleyball require a BIT focus?

2. Under what circumstances are you likely to hinder or disrupt your performance if you are using BIT?

3. Note those situations where you must switch rapidly from BIT to BET or NAR and vice versa.

4. What mistakes or mental errors do you make in your performance involving the imporper use of BIT?

5. If you feel yourself as being inadequate in your BIT focus what drills in practice could you suggest that would help you?

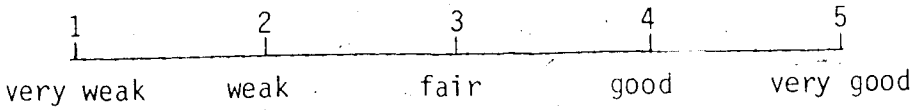
4. OIT - Overloaded by Internal Stimuli

A high OIT score (especially if it is higher than BIT) indicates that you are thinking about too many things at once, feeling too many emotions all at once, or processing too much information. The common tendency here is that you are "over-analyzing" something in your head and that you've taken on too much information or more information than you can handle easily. This causes you to become distracted by your thoughts and hinders you in making a coherent decision. You are, in sense, paralyzed by analysis. Internal overload can also be caused by over-worrying, by nervousness, or by task-related anxiety. When this happens, the person tends to monitor their thoughts or feelings rather than concentrate on what they're supposed to be concentrating on. Sometimes these people want and need more time to be alone with their thoughts.

Questions

1. What specific situations in volleyball cause you to become overloaded internally?

2. How would you rate your ability to cope with internal overload?



3. In what situations do you tend to psych yourself out? Psyching yourself out means that you dwell on things that could go wrong.

4. If you do overload internally, how much of it is due to thinking too much and how much of it is due to anxiety or nervousness?

5. NAR - Narrow Focus of Attention

This is the focus normally thought of as "concentration" in sport. It deals with your capacity to narrow your attention in on one or two things and block out everything else. It is the focus most necessary for task execution (e.g., serving or hitting a ball, blocking a spike, etc.). Your score provides evidence of how you see your ability to concentrate in a focused way, to discipline yourself, and to follow through on an action until the goal is reached.

Athletes who score high on NAR see themselves:

1. Being able to narrow their attention in order to execute a task.
2. Being able to block out both external and internal distractions.
3. Being able to stick to one thing regardless of what happens.
4. Being self-disciplined, determined, and persistent.

Questions

1. What specific situations in volleyball require a NAR focus?

2. When is it inappropriate for you to be narrowly focused?

3. Note those situations where you must switch rapidly from NAR to BET or BIT and vice versa.

4. In what specific situations would a NAR focus hinder or disrupt your performance?

5. Select a few teammates who are so different from you on NAR and specify how you are going to improve teamwork among all of you.

6. RED - Reduced Attentional Focus

A high RED score indicates a person who sees himself making mistakes because his attention is too much. That he narrows to the point where he is excluding important task-relevant information or becomes oblivious to important cues.

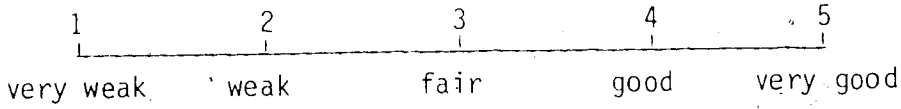
In volleyball, such an athlete typically fails to react to changes that occur right in front of him because he has over-reduced what he/she should be attending to. For example, a back row player who is so narrowed in on the opposing attacker, that he fails to note the coverage. Thus, he/she makes errors of under-inclusion.

Questions

1. What sort of errors would you see yourself making if and when you narrowed too much?

2. What conditions would cause you to narrow too much?

3. How would you rate your ability to concentrate narrowing too much?



4. What sorts of mistakes do you make when you proceed on something on the basis of insufficient data?

7. INFP - Information Processing

A high INFP scorer is indicating that he lives in a busy world and that he tends to process a great deal of information. That he has high mental energy levels and that he likes a lot of stimulation, particularly mental stimulation. People who score high on INFP are typically stressed when there is not enough going on around them. Low scorers are stressed when there is so much going on that they are unable to finish something before having to start on something else.

Questions

1. Do you have enough time in volleyball to process a lot of information? If not, does this irritate you? If you do, does it cause you to make mental errors? Why or why not?

2. Does the excitement of volleyball competition make you play better? Why or why not?

3. Do you think the INFP subscale has significance for your attentional performance in volleyball? How?

4. What recommendation(s) regarding INFP can you use to improve your performance right now?

8. BCON - Behavior Control

This scale deals with how much control a person sees as having over his own behavior. High scorers tend to be more impulsive and have trouble delaying gratification. Low scorers tend to be more conventional, more responsible, and tend to play by the rules. High scorers who also see themselves as having control over their attention, see themselves as effective in making quick decisions and as responding quickly to what they see as correct or right.

Questions

1. If you are high on BCON, which specific situations in volleyball do you see as causing you to act impulsively and why?

2. If you are low on BCON, which specific situations in volleyball cause you stress because other athletes are not behaving as you think they should?

3. How do you normally cope with the stress caused by either of the above situations? And how successful in this coping in terms of enhancing your athletic performance?

4. How can you and a teammate who is quite the opposite from you on BCON learn to appreciate each other more?

9. CON and SES - Control and Self-Esteem

The control scale essentially is an indication of how much need you have for controlling your environment. The self-esteem scale is a rating of how much confidence you have in yourself in being able to do this.

Questions

1. Under what circumstances is it good for you to take charge?

2. Under what circumstances is it good for you to hold back in?

3. What are your most common errors on the CON/SES dimensions?

4. What recommendations should you use to overcome these errors?

5. If your depression score is 8 or above, what is the major reason for this?

6. What steps might you consider to keep your self-defeating thoughts from interfering with your performance?

10. OBS - Obsessive

This scale deals with a person's tendency to ruminate and worry or be truly concerned over things. High scorers tend to make decisions after reasonable thought; low scorers make decisions quickly and forcefully.

Questions

1. How do you feel to an approaching volleyball match?

2. When your team is defeated at the beginning of a game, how worried do you get? And does this prevent you from exerting your utmost efforts?

3. What sort of stress do you experience when other people make decisions too slowly (or too quickly) for you? Does this stress (if it occurs) affect your performance? How, in specific terms?

4. Which specific situations provide you with enough time for making a decision on something? Which situations do not give you enough time?

5. What recommendations do you suggest for your OBS score?

11. EXT/INT - Extroversion-Introversion

These scales deal with your basic tendencies toward extroverted and/or introverted behavior and whether you tend to be inner-directed (i.e., involved with your thoughts and feelings) or outer-directed (i.e., your frame of reference is constantly external events, objects, and people). For sport, these scales are particularly relevant for describing how you act in social situations with other people. The two scales are usually interpreted in terms of their relationship to each other rather than independently.

Questions

1. For you, what are the benefits or drawbacks of hitting hands with your teammates after each winning point?

2. Have you enjoyed times with other people and times with yourself? If yes, what are your socialization characteristics?

3. Under what conditions have you found that you can fool people or yourself into thinking that you are really extroverted when you are more introverted or vice versa? (specify which one)

4. Is intra-team harmony necessary for success in volleyball? (This is not an idle question in that some research has indicated the opposite.)

12. IEX/NAE/PAE - Expressive
Intellectual and Affective (Emotional) - Negative and Positive

The last three scales deal with the amount or degree of your expressiveness (IEX) and the kind of expressiveness you most engage in (NAE) or (PAE). IEX describes the extent to which you communicate with others by outward expression of your ideas, thoughts, and feelings. NAE deals with how confrontive or critical you are in this expressiveness and PAE deals with how positive and supportive you are of others. Both NAE and PAE also deal with whether or not you are critical or supportive of yourself.

Questions

1. When is it valuable to express your emotions?

2. What are the benefits of being expressive of your ideas?

3. Are you significantly stressed by too much criticism? If so, does it affect your subsequent performance negatively or positively?

4. Does criticism break your concentration? How, in specific terms?

5. At what times are kind, supportive words and affection most needed?

6. How do you cope with criticism of your performance?

7. In order to better motivate your current team, if you were the coach, would you ctiticize or support the players more?

APPENDIX D

COACH WORKSHEET

Coach Name: Team:

Athlete Name: Sex:

Date:

Dear Coach:

This worksheet was developed in order to know your opinions of the above athlete in regard to:

1. The attentional ability in volleyball.
2. The interpersonal relations with you and other team members.
3. The achievement motivation.

Questions

1. Do you think this player has good anticipation? Yes ____ No ____
   Please elaborate.

2. Is he/she a quick learner, e.g., new method, drills, strategies, etc.?

   Yes ____ No ____ . Elaborate please.

3. Can this player narrow his/her attention in order to execute a skill (e.g., serving or spiking the ball, blocking, etc.).

   Yes ____ No ____ . Elaborate please.

4. How worried (anxious) does he/she appear:

before competitions: |_____|_____|_____|_____|

very worried not at all

during competitions: |_____|_____|_____|_____|

very worried not at all

Please elaborate.

5. Is he/she enthusiastic about success? Yes ___ No ___.
Please elaborate.

6. Does he/she get along with his/her teammates?

7. How well does he/she perform under pressure? Please elaborate.

|_____|_____|_____|_____|

very poor very good

8. Is his/her performance affected in any way by crowd reactions?

Yes ____ No ____. Please elaborate.

9. How critical is he/she of you and/or other team members after winning and losing? Please elaborate.

|_____|_____|_____|_____|.

very critical not at all

10. Do you and/or other team members admire his/her self confidence, persistence and determination?

Yes ____ No ____. Please elaborate.

APPENDIX E

Sport Psychology Centre

Introduction

Through the testing and interviews with the subjects and their coaches, it was found that physical and technical aspects are the focus of coaches in sports training units while the psychological and mental aspects are more or less ignored in most cases.

A conclusion was reached that counselling coaches and athletes regarding their psycholoigcal and mental aspects of their sport are essential for the integration and enhancement of their performances. To provide such services, there is a great need for a centre which provides psychological counselling in sport for coaches and athletes who represent their schools or their amateur teams.

Universities should take the first step toward the establishment of centres concerned with psychological consulting services in order to help the amateur and school sport teams in Canada. This experience will provide excellent opportunities to improve:

1. graduate program of sport psychology
2. clinical research in sport psychology
3. the performance of athletes and coaches

The Centre

The Sport Psycholgy Centre (S.P.C.) will be a project of the Department of Physical Education at each university. Clients attending the centre may be seen by the sport psychologists who are affliated with the centre or by graduate students under the close supervision of sport psychology professor(s) in the department.

The Objectives

The S.P.C. objectives are as follows:

1. Provides psychological and counselling services to school and amatuer sports teams in order to help athletes and coaches to enhance their performances.
2. Supports the sport psychology graduate training program of the Department of Physical Education by providing opportunities for students to work with athletes and coaches. Individually, and in small groups, doing psychological assessment, ability testing, counselling and innovative instruction under close direct supervision of the centre psychologists.
3. Provides a setting and framework for research of a clinical nature, that is, work involving continuous contact with athletes and coaches presenting specific psychological or mental problems regarding athletic performance.

The Services

The S.P.C. services are as follows:

1. Assessment Services
   a. Attentional assessment
   b. Personality assessment
   c. Interpersonal Style assessment
   d. Anxiety assessment
   e. Cognitive assessment
   f. Coach-athlete Relationship assessment
   g. Athlete-athlete Relationship assessment
   h. Motivation assessment
   i. Attitude assessment
2. Therapeutic Services
   a. Counselling for athletes and coaches
   b. Behavior modification in sport
   c. Cognitive and biofeedback training for stress management
   d. Attention control training (A.C.T.)

Fees

Clients will be charged a fee for assessment or subsequent counselling or treatment sessions. Specific fees will be negotiated by the Centre staff or the Centre Coordinator.

Records and Files

All the S.P.C. records, including case histories, assessment notes, session notes and so on, are considered confidential and maintained in locked files. Access to these files is determined by the Centre Coordinator and is normally limited to those directly involved with the client. Client records or reports will be communicated or transmitted to other sources or agencies only with prior written permission of the client. Client records may also be used, with prior permission, for instructional or research purposes. In these cases all identifying information will be removed and anonymous or statistical data only will be used. Such usage must be approved by the Centre Coordinator who will be responsible for ensuring that full confidentiality and anonymity will be maintained.