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Attentional and anxiety measures of Division I and III soccer athletes

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ATTENTIONAL AND ANXIETY MEASURES OF DIVISION I AND III SOCCER ATHLETES

by

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An Abstract

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ABSTRACT

This study examined the differences between attentional styles and anxiety measures for Division I and III soccer players. Male varsity soccer players (N = 88) completed the Test of Technical and Tactical Soccer Attentional Style (3TSAS) and the Soccer Situation-Response Inventory of Anxiousness (SS-RIA). To gain measures of test-retest reliability, 22 subjects were re-administered the testing instruments following a 3-5 week period. The 3TSAS was composed of 75 specific soccer situations presented on video and described on a questionnaire form. Each situation on the 3TSAS represented one of eight attentional foci (BET, BIT, NET, NIT, OET, OIT, REDE, and REDI). Subjects responded to each of the situations on a 5-point Likert scale to represent the degree each situation was a reflection of her/his behavior. Test-retest reliability of the 3TSAS scales ranged from .38 to .73, while the SS-RIA responses ranged from .18 to .92. Coefficient alpha reliabilities for the 3TSAS scales ranged from .44 to .79. Multivariate analyses of variance revealed significant ($p < .05$) differences between Division I and III players with both the 3TSAS and the SS-RIA. Analyses of variance revealed that each of the eight 3TSAS scales differentiated Division I and III players, whereas only three of the SS-RIA responses were able to do so. Both Division I and III players were able to attend to the task demands of soccer, but only Division I players were able to successfully attend to the subtleties of the more complex skills. Division I players were also able to appraise negative anxiety eliciting situations in soccer more positively than were Division III players.

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A Thesis Presented to the Faculty of
the Division of Health, Physical
Education, and Recreation
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Requirement for the Degree
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Ithaca College
Division of Health, Physical Education, and Recreation
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CERTIFICATE OF APPROVAL

MASTER OF SCIENCE THESIS

This is to certify that the Master of Science Thesis of

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submitted in partial fulfillment of the requirements for the degree of Master of Science in the Division of Health, Physical Education, and Recreation at Ithaca College has been approved

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DEDICATION

This thesis is dedicated to Jim Lennox, my former soccer coach, whose scientific approach to the game and teaching have made this thesis possible.

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Chapter1

INTRODUCTION

The successful athlete is one who is able to maintain a focus of attention on the task at hand. This requires intense concentration if the skills and demands of the sport are to be met and executed with the highest quality. In an open skill sport like soccer, the players are constantly creating and responding to attacking and defending situations by identifying specific visual cues and by using past experience. During the course of a game, players are set up in variations of 1-on-1 battles all over the field. With relatively few stoppages (e.g., half-time, injuries), play is continuous even when the ball goes out of bounds (e.g., throw-ins, goal-kicks). During such instances the players are constantly moving from offensive to defensive positions and vice versa, and this transition requires an immediate change of thought and concentration (J. Lennox, personal communication, January 23, 1987). Each player must shift his/her attention so that it is compatible with each new situation. For example, as soon as the attack breaks down and possession is taken over by the opposition, the attacking team must automatically focus their attention towards defending as a team and as 11 individuals.

Nideffer (1976a) recognized two components of attention, the first being width of attention and the second being direction of attention. The width component of attention is related to the spectrum of cues an athlete must attend to within a given period

of time. The attention may be narrow (e.g., a penalty-kick) and the given period of time may be unlimited, or the attention may be broad (e.g., a 3-on-2 counterattack) and the given period of time may be only a few seconds. The direction component of attention is related to the athlete's ability to focus concentration internally (e.g., the cognitive and kinesthetic cues a player uses to estimate distance and judge strength in striking a soccer ball from A to B) or externally (e.g., the perceptual cues a player takes in to read the immediate game situation either around him, 30 yd away, or both). Thus, in any given situation, an individual's attentional focus may be broad external, broad internal, narrow external, or narrow internal.

Nideffer (1976a) also proposed that attention may be either effective or ineffective. For example, a soccer player may recognize that a broad focus of attention is effective for one situation but ineffective for another. In addition, a player's attention must be appropriate for the environment in which her/his skills are to be executed (Cratty, 1973; Wiren & Coop, 1978). While having a correct focus of attention may be an important precursor to high level performance, it alone does not guarantee success because there are many variables in the success equation.

National Collegiate Athletic Association (NCAA) Division I soccer players are likely to portray more effective attentional style behaviors than less effective attentional style behaviors.

If players at Division I are more successful than players at Division III, which is generally very evident, less effective attentional style behaviors should be more evident among Division III athletes than Division I athletes. It should be clearly noted, however, that athletes low in ability are not necessarily unsuccessful in their skill execution or in choosing an appropriate focus of attention, although many of them are. Quite often, a successful athlete is classified as having low ability because the time taken to make decisions (i.e., to chose a correct focus and direction of attention) and the speed at which s/he executes the skills demanded by the sport is too slow. As a result, the focus of attention is not appropriate, and the executed skill is performed incorrectly. Bearing this in mind, it would seem logical to assume that, if a player's style of attention can be assessed, valid predictions can be made about his/her potential playing ability.

The Test of Attentional and Interpersonal Style (TAIS) (Nideffer, 1976a) was constructed to assess general attentional abilities of all individuals, not exclusively athletes. It has been suggested that "perhaps there is a need to look at the relationship between the general TAIS and components of performance that demand attention and not overall performance alone" (Vallerand, 1983, p. 449). According to Nideffer, the assessment of attentional behavior should be as situation specific as possible. Van Schoyck and Grasha (1981) recognized the inability of the

TAIS to account for differences among athletes at various levels of competition and concluded that the TAIS is not sensitive enough to assess attention in specific sport situations.

Taylor (1979) raised the question of how specific a situation must be to gain an adequate assessment of attentional behavior in certain environments. He constructed a soccer-specific inventory, the Test of Soccer Attentional Style (TSAS), based upon Nideffer's (1976a) TAIS and compared the attentional styles of high and low ability, successful and less successful, and experienced and less experienced soccer athletes. Taylor reported significant differences between high and low ability groups and between successful and less successful groups on both his TSAS and Nideffer's TAIS. The results indicated that, the more specific the situations, the greater the likelihood of identifying the appropriate attentional behaviors for that particular sport. Hooper (1983) adapted Taylor's TSAS and concluded that his revised TSAS was more appropriate for identifying attentional behaviors of high ability soccer players than was Nideffer's TAIS.

An analysis of both soccer inventories (Hooper, 1983; Taylor, 1979) reveals that it is difficult to determine which attentional strength should be exercised by the athlete to execute a specific skill in a constantly changing environment. The aforementioned analysis supports Taylor's inquiry of how specific a situation must be to gain an adequate assessment of attentional behavior and reinforces Nideffer's (1976a) notion that the assessment of

attentional behavior should be as situation specific as possible. Nideffer concluded that the instrument used to measure attention should be as specific as the situations being assessed.

One variable that may well affect a player's performance is her/his anxiety level. There is a tendency for athletes to direct their focus of attention internally and narrowly during high arousal conditions (Easterbrook, 1959; Kahneman, 1973; Landers, 1980; Nideffer, 1976b). Research on the relationship between arousal and attention (Kahneman, 1973; Landers & Boutcher, 1986) indicates that arousal should be considered an important variable when assessing attentional behavior. As in the assessment of attention, it would seem important to assess anxiety with an instrument that is situation specific (Taylor, 1979). One such instrument that has been used to measure anxiety reactions is the S-R Inventory of Anxiousness, a situation-response type inventory (Endler, Hunt, & Rosenstein, 1962).

The aim of this study was twofold:

1. To construct a sport-specific attention inventory, the Test of Technical and Tactical Soccer Attentional Style (3TSAS), to assess attentional style differences for soccer players in Divisions I and III of the NCAA.

2. To construct a soccer-specific S-R inventory, the Soccer S-R Inventory of Anxiousness (SS-RIA), to measure physical and mental anxiety responses and assess differences in these

measures for Division I and III soccer players in typical soccer situations.

Scope of Problem

This study examined the differences between attentional styles and anxiety measures for Division I and III soccer athletes. The 3TSAS, adapted from Taylor's (1979) TSAS, was constructed to measure attention, and the SS-RIA was constructed to measure physical and mental anxiety responses of soccer athletes in typical soccer situations. Both tests were administered to 88 Division I and III collegiate soccer players at eight educational institutions in New York State between the months of August and November, 1988.

Each statement on the 3TSAS pertained to one of Nideffer's (1976a) attentional scales and represented attentional demands specific to situations and skills in soccer. Each statement was carefully read from the 3TSAS before and after being presented in a game situation on a television screen by use of a videocassette recording machine (VCR).

The data from the two tests were analyzed to examine the differences between attentional styles and anxiety responses in athletes of varying levels of ability. Twenty-two players (11 Division I and 11 Division III) were administered both tests on a second occasion, 3-5 weeks later, to gain measures of instrument reliability.

Statement of Problem

The purpose of this study was to investigate the differences between attentional styles and anxiety measures for Division I and III soccer players.

Hypotheses

1. There will be a significant difference between the scores on the 3TSAS attentional scales for Division I and III soccer players.

2. There will be a significant difference between the scores on the SS-RIA for Division I and III soccer players.

Assumptions of Study

1. The soccer players were able to relate to the soccer situations presented to them on the inventory and on the VCR.

2. Specification of position among the players did not affect their ability to relate to the situations presented.

3. Seating positions in relation to the VCR had no effect on subjects accurately perceiving the situations presented at different angles or with greater clarity.

Definition of Terms

1. Attention: the mental process engaged in selectively or broadly focusing on internal (thoughts and feelings) or external (environmental) stimuli.

2. Attentional flexibility: the shifting of attention from one focus to another, sometimes refered to as "flip-flopping."

3. Attentional style: the composite strengths and

weaknesses of an individual's attentional behavior, based on the attentional dimensions of width and direction.

4. Broad external focus of attention (BET): an effective attentional style in which the focus of attention is on a broad range of environmental stimuli.

5. Broad internal focus of attention (BIT): an effective attentional style in which the focus of attention is on a range of cognitive and proprioceptive stimuli.

6. Direction of attention: attention focused either internally or externally.

7. Effective attention: a correct focus of attention in a particular situation.

8. Ineffective attention: an incorrect focus of attention in a particular situation.

9. Narrow focus of attention (NAR): an effective attentional style in which the attentional focus is directed towards selected internal (NIT) or external (NET) stimuli.

10. Overloaded external focus of attention (OET): an ineffective attentional style in which the focus of attention is on too broad a range of environmental stimuli.

11. Overloaded internal focus of attention (OIT): an ineffective attentional style in which the focus of attention is on too broad a range of cognitive and proprioceptive stimuli.

12. Underinclusive focus of attention (RED): an ineffective attentional style in which the focus of attention has been reduced

and directed towards too few internal (REDI) or external (REDE) stimuli.

13. Width of attention: the amount of information and how broad/narrow a perceptual field an individual can or cannot control.

Delimitations of Study

1. This study involved only NCAA Division I and III male varsity soccer athletes.

2. Soccer-specific attentional styles were assessed only by the 3TSAS, paralleling the six subscales from Nideffer's (1976a) TAIS.

3. Anxiety measures, both physical and mental, were assessed only by the SS-RIA.

Limitations of Study

1. Results may apply only to Division I and III male soccer players.

2. Attentional styles and anxiety responses were assessed only within the confines of the definitions and the tests used.

3. Results apply only to the width, direction, intensitivity, and selectivity components of attention.

Chapter 2

REVIEW OF LITERATURE

Attention and its relationship to athletic performance has been studied and investigated by a variety of professionals in fields such as clinical psychology (e.g., Spring & Zubin, 1978) and behavioral psychology (e.g., Berlyne, 1970). Extensive research in the field of attention has advanced since the 1970s and has lead researchers to identify and recognize the key dimensions of attention, even though a universally agreed upon definition has not yet been formulated. For example, Nideffer (1976a) defined attention as the ability to focus one's senses and thought processes in a particular direction, whereas Etzel (1979) defined attention as a cognitive process involving an individual's direction and maintenance of his/her intensitivity.

Nideffer (1976a) operationalized the key dimensions of attention into an instrument, the TAIS, but he discounted one of his own stated requirements--test specificity. Many studies have been conducted to assess attentional ability and predict athletic performance (Dunphy, 1983; Etzel, 1979; Ford, 1981; Hooper, 1983; Taylor, 1979; Van Schoyck & Grasha, 1981). The results of these studies confirmed Nideffer's assertion that the assessment of attentional behavior should be as situation specific as possible. In many of these studies the specific sporting situations often contained more than one skill. If each skill is composed of specific skill components, and if each

component of the skill requires a different focus of attention, then may be the execution of sports skills involves greater specificity of function than is commonly held. In this chapter, a review of related literature concerning attentional processes required of soccer athletes is presented. The review will be categorized under the following headings: (a) task demands of soccer, (b) attentional processes, (c) effects of arousal on attention, (d) relationship between auditory and visual cues on the attentional processes of soccer, (e) specificity of attention in soccer, and (f) summary.

Task Demands of Soccer

The game of soccer requires the devoted attention of its 10 field players and one goalkeeper. The slightest break in concentration may create a scoring opportunity for the opposition. A high level of physical fitness and endurance is required for the full 90 min of a game. The average player will run between 5 and 6 miles (Coerver, 1983) and will have possession of the ball at her/his feet for not more than a mere 2 min (Caruso, 1986; Hughes, 1980). For the remaining 88 min, the player will be physically asserting him/herself by making a variety of checking runs (i.e., a sharp run of any distance with a high velocity of speed) into spaces to open up passing lanes and to create options for the player on the ball.

Individually, each player has a defensive role as either a first, second, or third defender. The first defender is the closest

player to the ball. The second defender is the closest supporting defender to the first defender. All other players are identified as third defenders taking up balancing positions. The position of the third defender is vital to the team's structure so that neither offense nor defense can be caught overbalanced (i.e., too stretched or too square). The first defender, therefore, requires a narrower external focus of attention, whereas the third defender requires a broader external focus of attention.

The decision a player makes on the ball (i.e., to pass, shoot, or dribble) is dependent on the movement or lack of movement from surrounding players off the ball (e.g., a player has the option to pass if a passing lane is open but may be forced to dribble if no passing options are available). Decisions made off the ball are not necessarily dependent on any other player but solely dependent on that player's ability to read the game and make the correct decision (J. Lennox, personal communication, January 23, 1987). Correct decisions made off the ball will increase the options for the player on the ball, whereas incorrect decisions will decrease the options for the player on the ball.

Together, each player on or off the ball in a defensive or offensive build-up must outnumber the opposition in the immediate area around the ball. In a numbers-up situation (e.g., 4-on-3) for the team in possession of the ball, a greater number of options are available to the player on the ball. Defensively, in a numbers-up situation, it is expected that all possible inherent

options for the attacking team (e.g., passing and shooting lanes) have been closed by the roles of the first, second, and third defenders (J. Lennox, personal communication, January 23, 1987).

The most important skill a soccer player must possess is to control a ball with her/his first touch (Myadlinski, 1986). How many touches a player takes to control a ball may determine the effectiveness of that player's performance (i.e., controlling the ball with one touch that correctly prepares the ball for the second is better than controlling a ball with one touch that does not prepare the ball for the second touch) (Myadlinski, 1986).

The speed of the game is controlled by the ability of the players to move the ball back and forth from one third of the field to another (Arlott, 1953). Each third of the field is governed by the positional status of each player who has the freedom to move from one third to another. The defensive third is comprised mainly of defenders, protecting the area in front of the goal from being attacked. The middle third is comprised mainly of mid-fielders who control the speed of play between and within each third. Finally, the attacking third is comprised mainly of attackers and attacking mid-fielders whose main roles are to create scoring chances and to score goals. It is important that the work involved to create scoring opportunities is shared between the players and the ball. Too much movement by the ball and not enough running off the ball, or not enough ball movement and too much off the ball running, will result in the useless expenditure of a player's energy

and the loss of potential options for the players on and off the ball. A good balance between movement of the ball and the players is required to execute the perfect timing of runs and passing of the ball. Interaction through movement and communication between players in different thirds of the field will dictate how effectively and quickly the ball moves from one third to another (J. Lennox, personal communication, January 23, 1987).

In addition to the physical, technical, and tactical demands that the game requires, there are psychological demands that are just as important. Like techniques and tactics in soccer, the physical and mental demands of the game cannot be separated except by definition. That is to say, "one cannot exist without the other" (Csanadi, 1965). Mentally the game is equally demanding for all players irrespective of position. Because there are no restrictions on the movement of players between and within thirds of the field, the successful player will attend to the most relevant cues that are required by his/her immediate positional location on the field. For example, a right back playing in her/his defensive third may often find him/herself in the attacking third as a result of good overlapping (i.e., a player who bypasses the player on the ball in front of her/him to create a numbers-up situation and an additional option for the player on the ball). A defender originally, this player must now attend to the relevant cues that make for a successful attack. This supports the hypothesis generally held by most top coaches that a player is not

a complete player unless s/he can play anywhere on the field (Coerver, personal communication, January 27, 1986; J. Lennox, personal communication, January 23, 1987; H. Vogelsinger, personal communication, July 16, 1986).

Mental alertness is an essential part of the successful player's game. The mentally alert player will attend to the most relevant cues and ignore the irrelevant ones. As situations become more complex around the ball, peripheral vision (i.e., focusing on a range of environmental cues) and divided attention (i.e., attending to two or more stimuli simultaneously) become more and more important to the successful player (Vogelsinger, 1970). It is believed that high calibre players who have the ability to assess different situations and move within limited space can see beyond the boundary lines (Arlott, 1953).

In light of the previous account of the task demands of soccer, it appears that a broad external focus is one of the primary requirements for successful performance. A broad internal focus of attention, however, is required to analyze situations where the space is crowded with penetrating attackers and supporting defenders, making each situation very complex (Taylor, 1979). Other situations where time and speed are essential require either reflexive actions that are based upon split-second decisions or quick decisions that are based upon recall of past experience (e.g., fakes, dummies, step-overs). A narrower focus of attention is required to select from the environment the relevant cues and to

ignore the irrelevant ones (Etzel, 1979).

In sum, the task demands of soccer are unique to each new developing situation. The speed at which players interact with each other on and off the ball and the time they have to perform the movement demonstrates an important attentional quality called attentional flexibility (i.e., the ability to shift from one focus of attention to another) (Etzel, 1979). In addition to possessing a flexible attentional style, the speed at which a player and his/her team can play is important in the creative build-up of an offensive attack and for the collective structuring of the defense. Time is, therefore, essential in the execution and completion of a skill before the opposition can outnumber the attack in the immediate area around the ball. Thus, a player must work hard to maintain the physical parameters that the task demands of the sport require. Ball feeling and skill execution (technique), coupled with tactical awareness, make up the ingredients to be applied during a game, if success is expected.

The successful player possesses a high level of technique and tactical knowledge. Typical playing characteristics of the successful player include: maintaining possession of the ball through a variety of ball handling skills; receiving and preparing a ball for the next move with only one touch; knowing when to pass, shoot, or dribble; and making attacking/defending runs to create or to attack/defend a space. In contrast, the unsuccessful player lacks the technical ability and tactical knowledge that the

successful player demonstrates. Characteristics of this player include: inability to make correct decisions about when to pass, shoot, or dribble; inability to create or compact spatial settings; inability to maintain possession of the ball during complex situations; and inability to receive and prepare a ball with one touch. Less successful soccer players exhibit ineffective flexible styles of attention (i.e., the ability to shift attention from one focus to another with a tendency to focus more times inappropriately than appropriately).

The mediocre player falls between these two extremes (i.e., technically gifted but lacks tactical knowledge, or knowledgeable but lacks technique). Today, about 80% of American youth playing soccer fall within this category (Coerver, 1987). It would seem that, for a player's attention to be flexible and effective, s/he must be able to break down the components of a skill into its parts, select the appropriate skill to be executed for that specific situation, and focus on the most relevant cues that appear within his/her visual field.

Attentional Processes

The interest researchers have shown in attention dates back to its conceptualization in 1860 and to the work of Wilhelm Wundt, the German introspectionist. Research studies and experiments in those days were not objectively verifiable because introspection was the only source of data. In the late 1950s, rapid growth in communication systems and devices

occurred, and an increase in the demand for objective research in attention became quite evident (Broadbent, 1958; Moray, 1958). The most popular researched question was whether attention was unitary or divisible: Do we choose what we wish to attend to and can we attend to two or more stimuli simultaneously?

The earliest theories that attempted to explain how information is processed were commonly known as the bottleneck theories. Analogous to water being poured into a bottle with a narrow neck (i.e., the first water molecules will escape through the hole while the rest must wait in line), the bottleneck theories propose that there is a similar bottleneck when humans process information.

The first of the bottleneck theories is called the filter theory (Broadbent, 1958). This theory examined the amount of information taken in at any time and suggested that a filter existed somewhere in the brain to limit the amount of information taken in. Information presented to the attended ear is filtered before it is analyzed for meaning, whereas information presented to the unattended ear is stopped at the bottleneck. According to Treisman (1960), Broadbent's theory does not account for how a subject can hear her/his name and other meaningful words when they are presented to the unattended ear. In Treisman's proposal, the message from the unattended ear is attenuated rather than being prevented from passing through the bottleneck. The bottleneck in this model

seems to be a function of consciousness rather than analysis (i.e., words with physical qualities that can attract attention).

Deutsch and Deutsch (1963) contended that all information is processed and that the bottleneck occurs just before the person responds. The main feature of this model is that all information is analyzed according to its psychological qualities and, on this basis, is either selected or filtered out. The physical qualities of the message (i.e., how much it means to you) will excite a level of meaning in the memory store. Simultaneously, that which is most relevant to the present activity will also excite its representation in the memory store even if it is not meaningful. In Treisman's (1960) model, a message is only attended to if it is excited by both mechanisms.

Norman and Bobrow (1975) suggested a different approach to explain the process of attention without involving a bottleneck at any specific point during the processing of information. Their approach emphasized and supported the notion that humans have relatively small amounts of mental efforts or resources to devote to their tasks. It is thought that humans' information storage capacity is limited and that performance of perceptual tasks imposes heavy demands on the central nervous system (Keele, 1973). Landers and Boutcher (1986) supported this belief that "humans have very limited spare capacity for focusing attention on task-irrelevant cues when they are performing complex motor skills" (p. 174).

With or without the bottleneck, the theories described above seem to support the attentional selectivity hypothesis, which implies that, in a situation involving more than one activity (i.e., one in which attention is divided), the different components of the task are not equally attended to (Keele, 1973). The possibility of attending to two or more tasks simultaneously is also dependent upon different variables such as task complexity, complexity of the competing task, importance and meaning of the message, and location of the bottleneck. The application of these theories to the game of soccer illustrates the important relationship between the mental (auditory and visual) and physical (locomotor and muscular movement) skills required to effectively attend to the task demands of the sport.

In the mid-1960s and early 1970s, the widespread search among leaders in the field of attention for a universally agreed upon definition seemed to become more important than defining the constructs of attention. Psychologists (e.g., Kahneman, 1973; Posner & Snyder, 1975; Wachtel, 1967), sport psychologists (e.g., Cratty, 1973; Etzel, 1979; Nideffer, 1976a, 1981, 1985; Straub, 1978), and a psycholinguist (Garnham, 1985) have all defined attention using a variety of sometimes complex terminology. For example, Etzel defined attention as a "cognitive process involving an individual's direction and maintenance of his/her intensitivity along with task related information" (p. 282). Garnham defined attention as an automatic process while at the same time arguing

that one's attention is a conscious process. Attention has also been defined according to its state and trait components. The variability of an athlete's performance outcome can be controlled by her/his state and trait behaviors. The state component is otherwise known as attentional flexibility (Etzel, 1979) or the "flip-flop" mechanism (Nideffer, 1976b), and the trait component is the narrowing of one's attentional strength during peak arousal conditions (Wachtel, 1967). According to Etzel, during peak arousal conditions the attentional focus being portrayed, whether it is appropriate or not, will dominate the athlete's performance. Because there is no limit to one's potential ability, the trait component also known as "choking" occurs when performance deteriorates to the point where the athlete seems incapable of regaining control over his/her performance (Nideffer, 1986).

According to Nideffer (1986), the components of attention need to be defined in behavioral terms as well as in operational terms. This would allow researchers to identify and observe the variables (e.g., levels of ability, inappropriate focus of attention on specific task characteristics) that explain to some degree the reason why athletes perform the way they do. In addition, observing and identifying these variables should enable researchers to make valid predictions about performance outcomes.

Kahneman (1973) argued that attention involves a voluntary or involuntary control process, whereas others (e.g., Posner & Snyder, 1975) posited that attention involves a cognitive or automatic

control process. Nideffer (1976a) seemed to be less concerned with whether attention was involuntary or voluntary and more concerned with recognizing the components of attention. Nideffer recognized attentional style as comprised of dimensions of direction and width or breadth. From these two dimensions four foci of attention were conceptualized and thought to cover the attentional span of any person. A person may be broad internal, narrow internal, broad external, or narrow external. It is impossible to be in both dimensions at the same time (e.g., broad-narrow, internal-external) (Nideffer, 1976a).

Two other components of attention, which were apparently left out of Nideffer's conceptual analysis of attention and which should be included, are intensitivity and selectivity (Etzel, 1979). Intensitivity refers to the extent to which one is aware of changing stimuli and sensitized to task related stimuli (Berlyne, 1970; Etzel, 1979; Keele, 1973; Posner & Boies, 1971). Selectivity refers to an athlete's ability to sift out the important cues in a certain situation, while at the same time cautiously disregarding the irrelevant cues (Etzel, 1979; Kahneman, 1973). For example, as the seconds tick by during a 1-on-1 (i.e., one attacker against one defender) situation in soccer, the situation rapidly changes. Defenders are taking up supporting positions while the attackers are penetrating into supporting offensive positions. In actuality the defenders are trying to limit the alternatives for the player on the ball, while the attackers are trying to maximize them. The

information crossing the perceptual field of the player on the ball is taken in and the decision to pass, shoot, or dribble is dependent on how much s/he does or does not see (i.e., intensitivity) and on the movement of the other players. However, the successful completion of the executed skill is dependent on how alert that player is in recognizing and acting upon the sensitive attentional cues that make up the components of that skill (i.e., selectivity).

According to Nideffer (1976a), the assessment of attentional behavior should be as situation specific as possible. However, the need to generalize test results is also important because "otherwise thousands of job and sport situations would have had to have been measured" (p. 394). Van Schoyck and Grasha (1981) recognized that the TAIS is insensitive to specific sport situations and also that it is unable to detect differences in the styles of attention between performers of different levels. Vallerand (1983) suggested that "perhaps there is a need to look at the relationship between the general TAIS and components of performance that demand attention and not overall performance alone" (p. 449). Over the past 10 years, many sport-specific inventories have been constructed, using the framework of the TAIS. In many of these studies it has been revealed that the specific-sport inventory was a better predictor of an athlete's ability and success than the general TAIS. It would seem, therefore, that the TAIS may not be specific enough to measure an athlete's focus of attention for any given situation. Examples of

a few of these inventories include field hockey, baseball, riflery, soccer, tennis, and volleyball.

The attentional demands for each of these sports vary, depending on a number of factors (e.g., individual or team sport, positional status of the athletes, freedom to move vs. restrictions to zones or thirds of the field, complexity of arising situations). With specific reference to soccer, the task demands create a constantly changing environment for a player to attend appropriately and to execute the skills required. Both Hooper (1983) and Taylor (1979) reported the inability of the TAIS to detect differences in the styles of attention between soccer performers of different levels and the insensitivity of the TAIS to specific sporting situations. Hooper and Taylor also identified the various components of soccer that demand attention. The situations created in the two soccer inventories are sport-specific and refer to specific situations in soccer, but they sometimes require more than one focus of attention. If Nideffer's (1976a) recommendation concerning the importance of situation specificity when assessing attentional behavior is to be taken seriously in the construction of a sport-specific inventory, then the description of situations created by Hooper and Taylor should clearly show which attentional strength is to be exercised. In Taylor and Hooper's inventories, the attentional focus represents the skill as a whole but not the components of each skill. Because there are a number of components that make up each skill (as depicted by the

complexity of the immediate game situation), and because each of these components represents a different focus of attention, these inventories do not appear as situation specific as Nideffer recommended, or even as Taylor or Hooper envisioned.

The Effects of Arousal on Attention

The ability of an athlete to produce the best performance s/he is capable of demands a high level of concentration at all times and a level of arousal that is neither too high nor too low. Helping athletes regulate their arousal levels, so that arousal will not become uncontrollable and negatively affect one's performance, is a major preoccupation of sport psychologists (Landers & Boutcher, 1986).

Athletes are often faced with physical and psychological disturbances that can affect their arousal levels and help or hinder them during performance. These disturbances can arise from internal sources (e.g., fears of losing, distracting body sensations, and feelings as "I blew it," returning from an injury, and doubts about one's own ability) and/or from external sources (e.g., large crowds, poor officiating).

Arousal levels may be present hours, days, or even weeks before competition. The athlete may be able to identify the source of arousal and the direction from where it is coming even though it may not seem realistic to her/him, but to the body this recognition triggers a set of signals that prepares the body for an emergency "fight or flight" situation (Landers & Boutcher, 1986).

The arousal level of the athlete may vary on a continuum ranging from deep sleep at one end (i.e., as in a comatose state) to extreme excitement at the other (Malmo, 1959). From soccer coaches' and players' perspectives, this ongoing mental and physical state must be controlled to meet and match the demands of the sport. For example, prior to a big game, a player whose readiness falls towards the lower end of the arousal continuum may be able to cope with certain anxiety-eliciting distractions (e.g., presence of large crowds, negative self-defeating thoughts) by distancing him/herself from them (i.e., exhibiting a "who cares" type of attitude). However, performance of this player whose arousal level is too low will suffer because the physical energy this player is exerting is not adequate to match the physical intensity of the opposition or the pace of the game. On the contrary, the player whose arousal level falls towards the panic end of the continuum will face further attentional disturbances that will continue to increase the tension and affect the athlete's natural ability to perform (J. Lennox, personal communication, August 25, 1988).

It would seem, then, for a player to attend to the task demands of the sport, a suitable level of arousal should be present. The decision to maximize performance outcome by selecting the most appropriate level of arousal or to cause performance decrement by selecting an inappropriate arousal level is a function of accurately perceiving the present situation (Landers & Boutcher, 1986). During an important soccer game, the highly aroused athlete is moved more

by the presence of the crowds and how the coach feels than the athlete who is not so highly aroused. A strong feeling towards the situation will cause an increase in arousal, whereas a less strong feeling will lower the arousal level. Depending on this level of arousal, performance will be enhanced or hampered. The perspective held by sport psychologists on the effect of arousal on attention and subsequently performance is quite similar to the previous account held by the 1984 college soccer coach of the year, Jim Lennox.

Two valuable theories have been advanced to explain the relationship between arousal and motor performance. In their drive theory, Spence and Spence (1966) stated that low skilled persons will perform poorly under arousal conditions, whereas high skilled persons will perform well under high arousal conditions. For example, a novice basketball player will score 3 out of 10 baskets under pressure and will continue to do so because missing is the dominant response. The veteran basketball player will score 8 out of 10 baskets because success is her/his dominant response under pressure.

In support of the drive theory, experts have stated that there are no limits to the amount of arousal an athlete may tolerate before performance deteriorates (Landers & Boutcher, 1986). In fact, however, studies (Bond & Titus, 1983; Freeman, 1940) have shown that, under moderate arousal conditions, athletes have performed better than under high arousal conditions. Other researchers (e.g., Easterbrook, 1959; Landers, 1978, 1980)

provided ample support for the notion that the drive theory does not account for variables involved with task complexity (e.g., decisions, perceptions, specific sport skills). This suggests that task-specific variables may also be responsible for performance decrement (e.g., the novice basketball player who scores 3 out of 10 baskets will continue to do so, not because her/his performance is affected by his/her arousal level but because the position of his/her hands was not correctly placed on the ball). Finally, those results that support the drive theory have shown trivial practical significance because their effects are too small (Bond & Titus, 1983; Landers, Snyder-Bauer, & Feltz, 1978).

The inverted-U theory (Landers, 1980) has gained more support than the drive theory and, from a practical point of view, seems more favorable. The central premise is that high skilled athletes can only perform well so long as the arousal level does not reach a certain threshold limit. Further increase in arousal would cause a decrease in performance. Kahneman (1973) and Landers (1980) both noted that low aroused and low skilled athletes failed to discriminate between relevant and irrelevant cues, whereas high skilled and high aroused athletes narrowed their focus of attention to the limits of their cue selecting capabilities. Any further increase in arousal would result in the athlete choking or losing focus on task-relevant cues. For more complex task-oriented sports, optimum arousal levels peak at a lower level than for less task complex sports (Yerkes & Dodson,

1908). The complexity of the attentional demands of the sport will determine the level of arousal required (Landers & Boutcher, 1986). For example, a highly complex sport like soccer requires much thought, perception, and quick reactions to an everchanging environment. Consequently, the soccer player must be attentive at all times.

Bacon (1974) and Easterbrook (1959) suggested that arousal effects depend upon the degree of attention the stimuli attract and that sensitivity is lost systematically to those cues that attract less attention. Easterbrook suggested that arousal acts to narrow the range of cue utilization and this results in the typical inverted-U pattern of responses. The under aroused performer has a broad perceptual range and is more likely to accept irrelevant cues uncritically. The moderate to optimal aroused performer is capable of narrowing her/his perceptual range, increasing his/her process of selectivity, and exerting more effort in eliminating task irrelevant cues. Arousal that increases beyond this optimal point results in further perceptual narrowing and performance deterioration.

Easterbrook (1959) inferred that, for each individual, there is a point on the arousal continuum beyond which performance will deteriorate and, that if arousal increases, the attentional span becomes narrower and narrower until the athlete eventually "chokes."

J. Lennox (personal communication, August 25, 1988)

contended that arousal levels are predetermined for each sport by the task demands of the sport itself. If the coach organizes the practice sessions so they are match related, each athlete will be given the opportunity, where possible, to practice regulating arousal to the correct level. This would ensure control of arousal during heightened conditions and game situations by replicating them in the practice situation. Without the correct arousal level, effective attention cannot be established.

The results of research studies that have used non-real world sport skills (e.g., Babin, 1966; Levitt & Gutin, 1971; Wood & Hokanson, 1965) should not be disregarded because their results confirm the findings of other research studies that have used real world sport skills. For example, Fenz and Epstein (1967) conducted studies with sport parachutists that revealed inverted-U relationships among physiological measures, self-report measures, and jumping efficiency. Similar inverted-U performance patterns were found with studies on high school basketball players (Klavora, 1979). These results, compared to the research findings on the drive theory, seem to show a more plausible explanation for the relationship between arousal and athletic performance.

The Relationship Between Auditory and Visual Cues on the Attentional Processes of Soccer Athletes

The paramount importance of visual and auditory skills in the application of both technical and tactical soccer skill execution cannot be emphasized enough. Experts in the field of attention

(e.g., Kahneman, 1973; Landers & Boutcher, 1986; Nideffer, 1986) have stressed the importance of visual skills in their definitions of the operational constructs of attention. In soccer, better players are able to select their best option from a field of potential options.

Several studies have suggested that very little information is taken in while eyes are in motion (Ditchburn, 1959; Latour, 1966) and that eye movements will orient towards the object of thought (Kahneman & Lass, 1971). This may also suggest that athletes see what they wish to see and that their visual control is governed by their thought processes. The application of the orientation to thought hypothesis and the studies by Ditchburn and Latour seem to suggest that, if soccer players are aware of the correct cues to look for in a game situation (i.e., technical and tactical skill execution that maximizes options and scoring opportunities), then the eyes will fixate on them. Naturally, then, for the attentive player, the eyes will fixate only on the relevant cues, while for the inattentive player the eyes may fixate on a range of cues, some of which are irrelevant.

Similarly, the ability to attend to specific verbal communication forms the basis for understanding auditory attention. Auditory skills are also related to the field of attention with the emphasis, though, on the direction of the gaze (Argyle & Dean, 1965; Exline, 1971; Kendon, 1967; Strongman, 1970). During a collegiate soccer game the content of verbal communication

varies between the spectators, the coach(es), and the players themselves. The context of what is said is quite often too confusing and difficult to hear, irrelevant, and misdirected. Verbal communication from the crowd is made up of jeering and cheering, sometimes in the form of singing that creates a hearing blockade among the players on the field, preventing them hearing each other. Verbal communication among the players on the field involves a lot of irrelevant ordering, negative criticism, and meaningful information. It is difficult, or more accurately nearly impossible, for a soccer player to discriminate between simultaneous irrelevant verbal and relevant verbal communication from four/five players if s/he is not technically equipped and tactically aware.

Makeworth (1976) suggested that our auditory senses tune into the pitch and localization of what we hear and that, until we attend to such stimuli, we cannot perceive where the sound is. Thus, a player pays attention to what Makeworth calls "the useful field of view" or otherwise known as the area where the focal point rests. From this useful field of view, an attentive player equipped with all the ingredients of success will perceive where the sound is located and tune only into the relevant stimuli.

The magnitude of this ability/inability may well be the basis of the decision making process between a favorable or an unfavorable passing option, resulting in the execution of a goal. The speed of the decision making process to recognize

opportunities is also vital to a player's success and tactical awareness (Beckenbauer, 1978; J. Lennox, personal communication, January 23, 1987).

Specificity of Attention in Soccer

In the game of soccer each situation is ideally manufactured by the execution of specific movements on and off the ball. Each player carefully weighs the pros and cons for each situation before continuing to play. In a typical soccer situation, wherein the environment is continuously changing, each specific skill executed is made up of a variety of attentional cues to which the player is sensitized. The more complex a task is, the greater the demands are (Kahneman, 1973). Complex situations in soccer (e.g., mobility of the player on the ball and players off the ball to maximize their alternatives for each other) demand visualization and divided attention (i.e., sensitive to both ball and player) from the player (Vogelsinger, 1970).

Visualization is the skill that measures a person's ability to imagine and memorize possible game situations (i.e., seeing in your mind what you want to happen). Berman (1986) stated that successful athletes visualize positive thoughts about their performance before it actually happens and, if they dwell on the positive thoughts, their chances of success are limited. In competition the athlete must maintain visual concentration to perform well. If visual concentration decreases as the game wears on and fatigue sets in, too much visual energy may be spent

on things that should not require a conscious effort. Each athlete possesses this inner power to utilize her/his inner subconscious mind to actually perform as s/he desires, although many of them do not know how to utilize this power. It is a fact that the subconscious mind cannot readily differentiate the real from the imagined (Berman, 1986; Maltz, 1960). Therefore, athletes can increase their chances for success by repeated mental rehearsal of their desired outcome. Visualization in soccer is very useful during the process of learning or executing set team plays (e.g., penalty-kicks).

Visual skills in soccer vary in concept and function and are directly related to the athlete's ability to effectively concentrate. These visual skills include central peripheral field awareness, visual reaction time, eye-hand/foot coordination, and dynamic visual acuity (Berman, 1986). The application of these skills to the game of soccer demonstrates the player's role to function effectively on and off the ball in the most appropriate manner, which will keep the game as simple as possible.

Central peripheral field awareness is the visual skill that measures how well individuals see that which is directly in front of them and that which is on their periphery. Peripheral vision is also known as "seeing out the corner of your eye." Good peripheral vision is demanded by nearly all sports. Bowling, for example, requires little to no peripheral vision, whereas soccer requires a great deal. Visual skills play a large role in a soccer player's

decisions both on and off the ball. Effective peripheral/central vision can be improved through proper training and practice. For example, each run a player makes must be timed so that s/he and the ball will meet in the space at the same time. In all aspects of soccer, running off the ball to receive it or to create space requires the use of vision skills. The timing of a run in soccer is dependent on vision as the form of communication. The player off the ball tells the player on the ball where s/he wants the ball to be played by the direction and speed of her/his run. The player on the ball, by his/her composure and cue(s) to play the ball (i.e., raising of the head, eye contact), tells the players off the ball when to make their runs. The vision of the player on the ball is critical so that the correct decision is made as to whether the run is to create space or to receive the ball.

Eye-hand/foot coordination and dynamic visual acuity are also important in the decision making process for the player on the ball. Eye-hand/foot coordination is the visual skill that determines how effectively the visual system guides movement. The eyes lead the hands and feet, not the other way around (Berman, 1986). The mastery of this visual skill increases the player's ability to estimate distance, judge strength, and improve her/his penultimate touch (i.e., direction component of attention).

Dynamic visual acuity is the visual skill that determines how well athletes are able to see while they and the object they are looking at are moving (Berman, 1986). It would seem that

this is probably one of the most difficult vision skills to master and is mastered only by elite players. Mastery in this skill not only develops judgment of strength and estimation of distance but would appear to improve technique and self-confidence to play the more difficult ball in a complex game situation.

Visual reaction time is the visual skill of how rapidly a player can respond to various visual stimulations (Berman, 1986). This visual skill, if applied correctly, will deny attackers from making penetrating runs and defenders from maintaining balance over the defense. If both teams are technically and tactically equipped with the proper ingredients to play successful soccer (i.e., good visual attentiveness), then the score should be 0-0. Because few teams are perfect in all aspects of the game, a 0-0 draw is unlikely as a result of equal talent.

Summary

This chapter has sought to explain in some detail the relationship between attention and athletic performance. With specific reference to soccer, the task demands make it clear that this sport is composed of many complex perceptual-motor tasks. Attention plays a key role in the task demands of soccer. The variables discussed in this review, in one way or another, all seem to affect a player's performance and his/her ability to attend effectively. The task demands include both physical and mental skills. A soccer player must be able to recognize an opportunity quickly and make decisions without any hesitation or

time delay (Beckenbauer, 1978). Clues (1980) contended that the speed at which a player can mentally participate in the game, while focusing on the correct cues for each situation, will reflect the speed with which the brain translates thought into action.

Nideffer (1976a) constructed an instrument to assess attentional behavior, using the two major components of attention he defined as width and direction. The construction of other sport inventories (Dunphy, 1983; Etzel, 1979; Ford, 1981) to assess attentional behavior have used Nideffer's instrument as a framework.

One variable found to affect athletic performance is arousal. During high arousal conditions attention tends to narrow (Easterbrook, 1959; Kahneman, 1973; Wachtel, 1967). Narrowing of attention may also cause performance decrements if the athlete's focus of attention is not appropriate for the situation (Landers, 1980; Nideffer, 1976a). Two theories, the drive theory (Spence & Spence, 1966) and the inverted-U theory (Landers, 1980), have also been examined to help explain the relationship between arousal and motor performance.

Research in the field of attention and how it specifically relates to soccer is limited. An analysis of Taylor's (1979) and Hooper's (1983) constructed soccer situations even further accentuates the need to identify the components of each skill that demand different attentional foci. The multitude of visual cues that are present in the soccer environment place heavy

demands on the soccer player's information processing capabilities. The application of Berman's (1986) conceptual analysis of visual skills and how various visual components affect playing successful soccer clearly identifies and clarifies the task demands of the sport. After considering many possible variables that affect a player's ability to effectively attend, the successful player will exhibit a flexible style of attention and a level of arousal that is neither too high nor too low.

The work of the early theorists in their attempt to conceptualize and define the field of attention has laid down the foundation for our understanding of attentional focusing in complex soccer situations.

Chapter 3

METHODS AND PROCEDURES

The methods used in this study are explained in this chapter. It includes the following sections: (a) selection of subjects, (b) testing instruments, (c) methods of data collection, (d) scoring of data, (e) treatment of data, and (f) summary.

Selection of Subjects

The subjects in this investigation (N = 88) were male varsity soccer players presently attending eight colleges/universities in the eastern region of the United States. Four NCAA Division I and four Division III schools participated. Letters explaining this study were initially sent to seven Division I and seven Division III soccer teams. Of the 14 teams initially chosen, 13 responded and 8 agreed to participate. Of the 15 subjects chosen from each team, there were between 10 and 12 players who actually took the tests. The players selected were those who had played the most regular games during that season. Goalkeepers were excluded from this study.

Testing Instruments

Two testing instruments were administered in this study, the 3TSAS (a revised TSAS) (Appendix A) to measure soccer athletes' attentional styles and the SS-RIA (Appendix B) to measure anxiety responses of soccer athletes in typical soccer situations. A VCR was used to display the situations on the soccer inventory. The 3TSAS consisted of 40 statements that

represented attentional demands specific to situations and skills in soccer. In many of the soccer situations shown on the VCR, more than one focus of attention was required to perform the task. To account for more than one focus of attention, the statements were organized into parts. Each statement explained the soccer situation presented. Five soccer players and two coaches were consulted to determine the task demands of each skill identified on the inventory. The situations were chosen so that they would be relevant and easily identified by both offensive and defensive players. Each statement pertained to one of Nideffer's (1976a) attentional scales. If a statement, after revision, still applied to more than one scale, it was deleted. The subjects responded to the situations on a 5-point Likert scale ranging from "never" to "always."

The instructions on the SS-RIA were self-explanatory. In this inventory 10 responses, five physical and five mental, across 15 situations were presented to each subject. The five physical responses were as follows: "mouth gets dry," "urge to urinate," "hands tremble," "yawning," and "get butterflies." The five mental responses were as follows: "get an uneasy feeling," "want to avoid the situation," "psychs you up," "the thought that you may lose keeps entering your mind," and "the thought that you may fail to do what you have to do." Subjects were instructed to mark on a 5-point Likert scale, ranging from "never" to "always," the degree to which each response reflected their own behavior.

Methods of Data Collection

Each athlete, upon entering the testing room, was given one HB pencil, an informed consent form, the 3TSAS, the SS-RIA, and a computerized answer sheet. The subjects were asked to sign the consent form if they were willing to participate in the study. All subjects signed. The data were collected on the same day the study was conducted. Tests were administered to all the players of a team at the same time. The investigator began by explaining the method and procedure of how questions on the inventories were to be answered. The first test administered was the 3TSAS. Subjects were informed that, for each time sequence of each game situation shown on the VCR, there was a corresponding question on the inventory. The second test completed was the SS-RIA. Approximately 3-5 weeks after the first administration of the tests, Division I (n = 11) and III (n = 11) college soccer players were retested to provide a measure of test-retest reliability.

Scoring of Data

The data from both tests were submitted to the computer on computer answer sheets. The Likert scale scores (A-E) were read and assigned an appropriate value from 1-5 for each response (A = 1, E = 5). These data were then transformed onto a disk file for future use.

Treatment of Data

The stability of the 3TSAS and the SS-RIA was assessed by

test-retest reliability coefficients after a 3-5 week interval. The internal consistency for each of the eight scales on the 3TSAS was examined using Cronbach's (1951) coefficient alpha.

Separate multivariate analyses of variance (MANOVA) assessed the effects of divisional level (I or III) on the eight attentional scales of the 3TSAS and the five physical and five mental responses of the SS-RIA. Follow-up analyses of variance (ANOVA) assessed which of the eight scales of the 3TSAS and which of the 10 responses from the SS-RIA were able to differentiate Division I and III players. Discriminant function analyses were also used as a follow-up test to the MANOVA to assess the major contributors to the overall significant between divisions difference.

Summary

The 3TSAS was constructed, based on Taylor's (1979) original TSAS. Soccer players (N = 88) from four Division I and four Division III college/university teams served as subjects. A convenient sample (n = 22) was retested after a 3-5 week period to determine test-retest reliability of the 3TSAS and the SS-RIA. Internal consistency for each of the eight attentional scales from the 3TSAS was reported. Separate MANOVAs assessed divisional differences in attentional and anxiety response. Follow-up ANOVAs and discriminant function analyses determined which of the attentional scales contributed to the significant between divisions difference.

Chapter 4

ANALYSIS OF DATA

The results of this investigation are presented in this chapter. The chapter is divided into the following sections: (a) test-retest reliability of the 3TSAS, (b) test-retest reliability of the SS-RIA, (c) internal consistency for the eight attentional scales of the 3TSAS, (d) multivariate and univariate ANOVAs and discriminant function analyses for division levels with the 3TSAS scales, (e) multivariate and univariate ANOVAs and discriminant function analyses for division levels with the SS-RIA responses, and (g) summary.

Test-retest Reliability of the 3TSAS

The test-retest coefficients for the 3TSAS scales for the 22 subjects who retook the test after a 3-5 week period are presented in Table 1. Test-retest reliability coefficients, measures of response stability over time, ranged from a high of .73 for the BET scale to a low of .38 for the OET scale.

Test-retest Reliability of the SS-RIA

The test-retest coefficients for the SS-RIA for the 22 subjects who retook the test after a 3-5 week period are presented in Table 2. Test-retest reliability coefficients, measures of response stability over time, ranged from a high of .92 for the response "get butterflies" to a low of .18 for the response "mouth gets dry."

Table 1

Test-retest Reliability (n = 22) for the Attentional Scales of the 3TSAS

Scale	r
BET	.73
OET	.38
BIT	.52
OIT	.40
NET	.47
NIT	.62
REDI	.49
REDE	.67

Table 2

Test-retest Reliability (n = 22) of the SS-RIA

Mode of Response Physical	r
"mouth gets dry"	.18
"urge to urinate"	.85
"hands tremble"	.80
"yawning"	.86
"get butterflies"	.92
Mode of Response Mental	**r**
"get an uneasy feeling"	.87
"want to avoid the situation"	.84
"psychs you up"	.86
"the thought that you may lose keeps entering your mind"	.65
"the thought that you may fail to do what you have to do"	.75

Internal Consistency for the Eight Attentional Scales of the 3TSAS

Internal consistency of the 3TSAS was estimated by Cronbach's (1951) coefficient alpha. Alpha reliabilities and the number of items for each of the attentional scales of the 3TSAS are presented in Table 3. Two coefficients are listed for some scales. Coefficients appearing in parentheses are values adjusted to improve internal consistency by deleting items correlating lower than $\pm$ .10 with the parent scale. Adjusted reliability coefficients for the 3TSAS ranged from a high of .78 for the REDI scale to a low of .57 for the OIT scale.

MANOVA, ANOVA, and Discriminant Function Analyses for Division Levels with the 3TSAS

MANOVA for division levels with the 3TSAS scales revealed a significant between divisions difference, $F(8, 79) = 4.90$, $p < .05$. The finding of a significant difference between the divisions led to the acceptance of the first hypothesis that there would be a significant difference between the scores on the 3TSAS for Division I and III soccer players.

ANOVA for division levels with each of the 3TSAS scales revealed significant division differences ($p < .05$). Division I players had higher means on the four effective scales (BET, BIT, NET, and NIT) and lower means on the four ineffective scales (OET, OIT, REDE, and REDI) than did Division III players. The results are presented in Table 4. Discriminant function analysis on the 3TSAS

Table 3

Internal Consistency of the 3TSAS

Attentional Scale	No. Items	alpha
BET	11	.79
OET	8	.70
BIT	5	.71
OIT	4	.44(.57)[a]
NET	8	.70
NIT	9	.67
REDE	15	.80
REDI	15	.76(.78)[b]

[a] Item 4 was deleted. [b] Item 36 was deleted.

Table 4

Means, Standard Deviations, and ANOVA for Division Levels with the Attentional Scales of the 3TSAS

Attentional Scale	Division I		Division III		
	M	SD	M	SD	F
BET	3.71	0.44	3.20	0.45	28.93*
OET	2.43	0.49	2.71	0.37	24.56*
BIT	3.66	0.54	3.07	0.49	9.05*
OIT	2.23	0.64	2.70	0.57	20.80*
NET	3.72	0.47	3.23	0.44	27.34*
NIT	3.68	0.38	3.21	0.39	13.06*
REDE	2.45	0.41	2.86	0.35	31.62*
REDI	2.43	0.46	2.82	0.34	25.70*

* $p < .05$.

variables revealed the contribution each variable made to the overall significant between divisions difference. The BIT scale contributed the most, followed by OIT and NIT.

MANOVA, ANOVA, and Discriminant Function Analyses for Division Levels with the SS-RIA

A MANOVA for division levels with the SS-RIA revealed a significant between divisions difference, $F(10, 77) = 2.75$, $p < .05$. The finding of a significant difference between divisions led to the acceptance of the second hypothesis that there would be a significant difference between the scores on the SS-RIA for Division I and III soccer players.

ANOVAs for division levels with each of the SS-RIA responses revealed significant ($p < .05$) division differences for only 3 of the 10 responses. Division I players revealed higher means on two of five physical responses--"urge to urinate" and "yawning"--and a lower mean on one of five mental responses--"psychs you up." The results are presented in Table 5. Discriminant function analysis on the SS-RIA responses revealed the contribution each response made to the overall significant between divisions difference. The largest single contributor was the response "the thought that you may fail to do what you have to do," followed by the responses "urge to urinate," "yawning," and "get an uneasy feeling."

Summary

Test-retest reliability was reported for the attentional scales of the 3TSAS and for the anxiety responses of the SS-RIA.

Table 5

Means, Standard Deviations, and ANOVA for Division Levels with the SS-RIA Response Variables (Physical and Mental)

Mode of Response	Division I		Division III		
	M	SD	M	SD	F
Physical					
"mouth gets dry"	2.59	0.63	2.56	0.49	3.33
"urge to urinate"	2.30	0.68	2.32	0.48	9.86*
"hands tremble"	3.06	0.54	2.79	0.54	1.93
"yawning"	1.65	0.56	1.79	0.42	14.51*
"get butterflies"	1.34	0.54	1.62	0.42	2.71
Mental					
"get an uneasy feeling"	1.45	0.63	1.61	0.49	0.05
"want to avoid the situation"	1.39	0.35	1.70	0.39	0.01
"psychs you up"	2.15	0.57	2.14	0.39	5.78*
"the thought that you may lose keeps entering your mind"	2.63	0.63	2.38	0.52	0.02
"the thought that you may fail to do what you have to do"	2.68	0.76	2.43	0.62	0.10

*$p < .05$.

Adjusted alpha reliabilities for internal consistency for the 3TSAS varied from a low of .44 for the OIT scale to a high of .79 for the BET and REDE scales.

As a result of a MANOVA for division levels with the 3TSAS, the first hypothesis, that there would be a significant difference between the scores on the 3TSAS for soccer players in Division I and III, was accepted. Further analyses revealed that Division I athletes differed significantly from Division III athletes in their responses to each of the eight attentional scales. Three of the scales (BIT, OIT, and NIT) explained most of the variance in the division group difference.

As a result of a MANOVA for the division levels with the SS-RIA, the second hypothesis, that there would be a significant difference between the scores on the SS-RIA for subjects in Division I and III, was accepted. Further analyses revealed that subjects in each division differed significantly on only 3 of the 10 SS-RIA responses. The response "the thought that you may fail to do what you have to do" explained nearly twice as much variance as the other three major contributing responses.

Chapter 5

DISCUSSION OF RESULTS

The results presented in chapter 4 will be discussed in this chapter under the following headings: (a) test-retest reliability of the 3TSAS and the SS-RIA, (b) internal consistency of the 3TSAS, (c) division level and the attentional scores on the 3TSAS, (d) division level and anxiety scores on the SS-RIA, and (e) summary.

Test-retest Reliability of the 3TSAS

The test-retest reliability coefficients for the eight attentional scales of the 3TSAS are reported in Table 1. These measures of response stability over time (3-5 week period) ranged from a high of .73 (BET) to a low of .38 (OET). Three of the four least reliable scales were ineffective (OET, OIT, and REDI). One plausible explanation for the low coefficients on the ineffective scales may be that the subjects were unable to accept failure on the two separate occasions. On the paper and pencil test and on the video portion of the test, the soccer performances that represented ineffective attentional style behavior could have been easily interpreted as failures. It should also be noted that more than one-half of the 75-item questionnaire represented ineffective style behavior (see Table 3).

The range of Taylor's (1979) test-retest reliability coefficients for his TSAS was much higher than that of the 3TSAS. The TSAS ranged from a high of .92 for both the BET and OIT scales to a low of .81 for the BIT scale. Overall, then, the

soccer athletes used in this study to assess test-retest reliability responded to the 3TSAS items comparatively inconsistently over the 3-5 week period. Test-retest results of the 3TSAS suggest that the instrument is not as reliable as needed for practical use in soccer environments.

Test-retest Reliability of the SS-RIA

The test-retest reliability coefficients for the SS-RIA are reported in Table 2. The coefficients for the SS-RIA responses ranged from a high of .92 "get butterflies" to a low of .18 "mouth gets dry." The response "mouth gets dry" does not appear to be ambiguous in any way. Unlike the mental responses, it is possible that this particular physical response is an involuntary process often performed subconsciously. If this is the case, the subjects' responses on the retest may have been dissimilar from their responses on the initial test because there was a greater opportunity to exercise a conscious effort to recall past behavior on the retest. The remaining physical response coefficients were otherwise all above .80.

All but "the thought that you may lose keeps entering your mind" and "the thought that you may fail to do what you have to do" mental responses showed test-retest coefficients above .83. Both these two mental responses are negative self-defeating thought processes, whereas the remaining three mental responses "get an uneasy feeling," "want to avoid the situation," and "psychs you up" are not. Overall, then, exclusive of the physical response "mouth gets dry," the soccer players used in this study to assess

test-retest reliability responded to the SS-RIA consistently over the 3-5 week period.

Internal Consistency of the 3TSAS

Coefficient alpha reliabilities for the attentional scales of the 3TSAS are presented in Table 3. In the 3TSAS, the alpha coefficient represents the degree to which all hypothesized items relate to the parent attentional scale. Thus, scales with high alpha levels contain items that were answered in a relatively homogeneous manner. The maximized alpha coefficients for the 3TSAS ranged from a high of .80 (REDE) to a low of .57 (OIT).

The internal consistency of the REDE (.80) and REDI (.78) scales of the 3TSAS approximated that of Taylor's (1979) RED (.76) and Hooper's (1983) RED (.84) scales. The RED alpha was also the highest recorded alpha on both their TSASs. Although neither Taylor nor Hooper used the internal or external dimensions of attention with the RED attentional scale, on the surface the RED items on their TSASs may well be as specific as the REDE and REDI items on the 3TSAS. Internal consistency for the REDE and REDI scales of the 3TSAS was consistent with both Taylor's and Hooper's RED scales.

Internal consistency for the BET scale (.79) of the 3TSAS also approximated that of both Taylor's (.74) and Hooper's (.76) BET scales. Internal consistency for the BIT scale (.71) of the 3TSAS was slightly lower than both Taylor's (.83) and Hooper's (.76) BIT scales. The BET and BIT scales would appear to have

internal consistency comparable to Hooper's and Taylor's BET and BIT scales.

Internal consistency for the NET (.70) and NIT (.67) scales of the 3TSAS were comparatively higher than the NAR scales reported in previous sports studies on attentional styles: Ford (1981) .43, Massey (1981) .33, and Taylor (1979) .67. The internal consistency of both the internal and external dimensions of the narrow scale for the 3TSAS approximated that of Hooper's NIT (.65) and NET (.68) alpha coefficients.

The OIT alpha .57 on the 3TSAS was the lowest recorded and contained the fewest number of items of any scale on the 3TSAS. The OIT alpha on the 3TSAS also approximated Taylor's (.79) and Hooper's (.82) OIT alphas.

Due to the specificity of the soccer situations on the 3TSAS, it was expected that the internal consistency would be greater than the internal consistency reported in previous sports studies and that the soccer situations would be more clearer and more easily interpreted. The results, however, do not support this expectation and suggest that further research has yet to be done in the construction of sport-specific attentional inventories if internal consistency scores are to be improved.

Division Level and Attentional Scores on the 3TSAS

MANOVA with the 3TSAS attentional scales revealed significant differences between Division I and Division III soccer

players, $F(8, 79) = 4.90$, $p < .05$. The finding of a significant difference between the divisions led to the acceptance of the first hypothesis that there would be a significant difference between the scores on the 3TSAS for Division I and III soccer players. The results support the expectation that Division I players would be different from Division III players in their ability to attend to the task demands of soccer.

ANOVA revealed significant division differences ($p < .05$) for all eight attentional scales (see Table 4). Significantly higher means were reported on all four effective scales (BET, BIT, NET, and NIT) for Division I players, and significantly lower means were reported on all four ineffective scales (OET, OIT, REDE, and REDI) for Division I players.

Division I players maintained more effective attentional styles during soccer situations. They were able to identify and integrate information without becoming overloaded, either internally or externally, and without becoming excessively narrow. Division III players, on the other hand, failed to effectively identify and integrate the appropriate cues in soccer situations and were drawn towards overloading and excessive narrowing of their attentional capabilities.

It was anticipated that Division I players would utilize the BET scale more effectively than Division III players. Division I players were better scanners of the playing field, allowing them to identify and select the appropriate cues. In a soccer game

where situations constantly change, players who possess a broad external focus can scan the options available to them in a short period of time. The higher BET results for Division I players would seem to suggest that these players, during the course of the game, are able to rapidly scan the soccer situations and filter out the appropriate cues.

On occasions where there is a little more time to analyze a soccer situation (e.g., when the fullback receives the ball from the goal keeper and carries it up field with no immediate pressure around him/her), the BIT attentional focus used to analyze, anticipate, and recall past behavior will also be utilized. It would seem, then, that having a flexible style of attention is optimal for attending to the continuous changing situations in soccer. The higher BET and BIT scores among Division I players shows this flexible attentional style or, as Nideffer (1976b) labeled it, a superior "flip-flop" mechanism.

The results also show that a narrow internal and external focus of attention are more likely to be utilized among Division I players than among Division III players. The NET scale is used to focus in a non-distractable way (Nideffer, 1986) on external cues (e.g., ball and player). This focus is often used to perform a skilled maneuver (e.g., receiving a ball on the chest so that it falls in the player's stride away from pressure) or parts of a skill (e.g., attacking a defender's front foot as the attacker attempts to dribble pass her/his opponent during a 1-on-1 situation). The NIT

scale is used to mentally rehearse specific soccer situations such as restarts (e.g., a penalty-kick) and/or to control arousal (Nideffer, 1986). In soccer, the importance of effectively narrowing attention during restart situations is important to the success of a team. Restarts are rehearsed situations where time is not an important factor. With practice and continuous rehearsal in training to perfect the restart, the opposing team is at a disadvantage. A number of different strategic plays can be executed without pressure from the opposing team. The NIT focus is also used to (a) concentrate on body feelings during the execution of a skilled maneuver (e.g., playing the ball with the inside surface of the foot to obtain an inswing effect), (b) assess a player's self-ability (e.g., thinking positive thoughts prior to executing a move), and (c) rehearse particular skilled maneuvers (e.g., making a blind side run during a one-two play).

Division I players seem to perform specific movements and technical skills habitually and without flaw more often than Division III players. The means of Division III players' 3TSAS effective scales were significantly lower than the means for Division I players. This does not indicate that Division III players are unable to perform the specific skills that Division I players exhibit, but it may suggest that Division III players failed to attend to the subtleties of the more complex skills (e.g., body feeling, angle of run, speed of approach) more often than Division I players. These failures seem evident from an examination of

the higher means of Division III players on the ineffective attentional scales.

The two overloaded external and internal ineffective scales (OET and OIT) usually occur as the result of failing to maintain a broad focus. On many occasions during the course of a soccer game, overloading occurs when a broad externally or broad internally focused player is confronted with a confusing situation. On these occasions where either scanning or analyzing the field of options become difficult for the player to do, confusion occurs as a result of being overloaded externally with too many cues and overloaded internally with too many thoughts and ideas. This ineffective type of attentional focus, in which the focus is directed towards too many environmental or cognitive stimuli, was more predominant among Division III players. These players lack the knowledge and experience to identify and integrate cues for rapid decision making. Slow decision making is a common trait of the unsuccessful player (Beckenbauer, 1978). During each new developing soccer situation, Division III players accepted the arising cues more uncritically. It is reasonable to assume, then, that Division III players maintained less of a cognitive order for each cue. Thus, they became confused and overloaded externally with information crossing the perceptual field and overloaded internally with multiple thought patterns. The implication of these results to enhancing soccer performance is that more effort needs to be

made in teaching coaches and players to be aware of both the intensitivity and selectivity components of attention during arising soccer situations.

The reduced focus of attention (REDE and REDI) refers to an ineffective attentional style in which the focus of attention is excessively reduced. The results show that Division III players were more reduced than Division I players. REDE leads to frequent mistakes as a result of failing to include all task relevant information. Division III players who scored highly on this scale concentrated too heavily on single cues (e.g., watching the player with the ball in a 2-on-1 situation) and are commonly called "ball watchers." A REDI focus also leads to frequent mistakes but as a result of excessive concentration on single thoughts. Division III players were less able to divide their attention in situations that required attention to be split among several important cues (e.g., the player on the ball in a 1-on-1 must be aware of her/his own speed on the ball as well as the speed of his/her opponent). Many times excessive concentration is given to a single irrelevant thought and less attention is directed to the more important cognitive cues (e.g., learned strategies).

The results of higher means on the OET, OIT, REDE, and REDI scales for Division III players are consistent with Nideffer's (1976a) model of attention. By attending to too much information (internal or external) or to too few stimuli (internal or external),

athletes hamper their sport performance. Sport performance may also be hampered if the appropriate visual cues are not attended to. The application of Berman's (1986) "visual skills" in soccer and the relationship between the eye and the focus of attention are also supported in the results.

If the proper visual skills are exercised effectively during a soccer game, the task of attending should be facilitated. Division I players appear to be better "readers of the game" and communicate with their teamates more effectively than Division III players. For example: Player A_1 is in possession of the ball in the mid-field. Player A_2 on the same team makes a run down the the right flank behind his/her opposing defender, Player B, who is caught ball watching. Player A_1 passes the ball to player A_2 who then enters the penalty area with the ball. In an attempt to recover, player B fouls player A_2 and a penalty is awarded. Player A_2 takes the penalty and scores.

In the above example, a BET focus of attention is used by player A_1 to visually identify player A_2. A BIT, NET, and NIT focus of attention is readily "flip-flopped" in order to execute the perfect pass behind player B and into the space that player A_2 is running. Defending player B fails to visually identify the important cue, player A_2, and is caught ball watching in an REDE attentional style. The penalty shot in this scenario highlights the effectiveness of the NET and NIT attentional foci.

The previous scenario illustrates typical playing

characteristics of Division I (A_1 and A_2) and III (B) players. The results support these characteristics and re-emphasize the importance of eye movements and their relationship to attentional processing. Berman (1986) stated that visualization is a common trait of successful athletes' ability to imagine positive thoughts about their performance. The NIT focus is used to monitor the player's composure and to practice self-talk, whereas the NET focus is used to concentrate on striking the ball at a pre-selected target area in the goal. The narrow internal focus of attention used to take the penalty-kick illustrates the usefulness of visualization. With no pressure around the ball, the chances to score are increased and are even greater with the aid of visualization. Unfortunately, this may still not be enough to score. Dwelling on positive goal-oriented thoughts may obstruct the penalty taker from "flip-flopping" the NET and NIT focus at ease. The flexibility of attentional foci to be flip-flopped among Division I and sometimes among Division III players must be partially accredited to the movements of the eye during mental processes.

Overall, then, the results of the MANOVA and ANOVA with the 3TSAS with each of the eight attentional scales shed light upon the specificity requirement that Nideffer (1976a) overlooked. The nature of the 3TSAS exposes the subtleties of the specificity requirement and meets the tasks demands of an open skilled sport like soccer. Hooper (1979) stated that one possible explanation

for the ineffectiveness of the TSAS in predicting soccer performance may be due to its inability to capture the subtleties of a team sport (i.e., the success of a player is partially controlled by that of her/his teamates). Not surprising, though, the specificity of soccer situations in the 3TSAS captures the subtleties of a team sport and thus, in accordance with Hooper's previous claim, is able to differentiate soccer players of different levels and possibly predict soccer performance.

Discriminant function analysis revealed that the BIT scale (.34) was the major contributing scale to the overall significant between divisions difference. Other major contributing scales were OIT (-.29) and NIT (.25). The previous literature documenting the task demands of soccer (Arlott, 1953; Taylor, 1979; Vogelsinger, 1970) has made reference to the importance of having both a broad and narrow external focus of attention for optimal performance. In this analysis the data imply that BET and NET do not seem to be important discriminating scales, whereas BIT and NIT are. These findings may be explained by the nature of the analysis and the variance that the BET and NET scales may share with each other. The discriminant function analysis identifies scales that discriminate but not independently of the other scales. Because the BET and BIT focus of attention are so frequently used in playing soccer and assess a "broad component," it was anticipated that these two attentional styles would be related. Without a correlation analysis, though, it is possible to

infer that the width portion of the BET and BIT scales (i.e., broad) and the NET and NIT scales (i.e., narrow) of the 3TSAS are shared in the discriminant function and possibly explain the same variance. This would imply that any discrimination BET and NET might show is already partially accounted for in the discrimination shown by the BIT and NIT scales. The reality of this finding implies that the BET and NET scales may be important, but not as important as the BIT and NIT scales in this study.

Possible reasons that may help explain the reality of these findings suggest that Division I players are more broad internal and more narrow internal than Division III players. In addition, Division I players are not more broad external than Division III players. By being broad and external, soccer players can keep their eyes on the ball and the player at the same time as well as integrating cues from arising situations away from the ball. Because each situation is unpredictable and cues arise all around the players, it would seem inevitable that this information is almost spontaneously attended to. On the contrary, attending to broad and internal cues does not appear to be as spontaneous. Broad internal focused players process cues through intuition, feelings, and past experience, which enables them to see what they want to happen in their mind's eye (e.g., strategically planning an attack). They analyze situations and anticipate moves and passes, picture in their minds successful plays, and recall past information. The results in utilizing the BIT attentional

style are rewarding. Players who are broad and internally focused often intercept passes, break down plays, and make reasonably sound decisions.

Narrow and internally focused players narrow their focus on individual thoughts and strategies that are appropriate for the specific soccer situation. This focus is used abundantly during skill execution and, in particular, when paying attention to the more subtle component parts of a whole skill (e.g., selecting the one best strategy). Switching from a broad internal focus to a narrow internal focus would seem important for optimal soccer performance. Division I players, who are evidently likely to be more successful and more experienced than Division III players, are more aware of the subtle component parts of the soccer skills illustrated in the 3TSAS.

The OIT scale was the second largest single contributor to the between groups difference. The significance of the negative score for an ineffective scale cannot be overlooked. Although this scale was a major contributor, the negative score signifies an adverse overall effect on the two divisions. The OIT focus is the attentional style players portray when they cannot focus broad and internally. Overloaded and internally focused players, who are unaware of which cognitive and proprioceptive cues should be selected and given priority over other competing cues, become confused with excessive information and multiple thought patterns. During the course of a soccer game the task demands

would be met successfully by the player who exhibits a broad and internal focus of attention. Soccer players who are overloaded internally, however, would not possess the attentional abilities to successfully meet the task demands of soccer because valuable thoughts and feelings essential to the success of a player's performance would be ignored.

Division Level and Anxiety Scores on the SS-RIA

MANOVA with the SS-RIA data revealed a significant group difference between Division I and III soccer players $F(10, 77) = 2.75$, $p < .05$. The finding led to the acceptance of the second hypothesis that there would be a significant difference between the scores on the SS-RIA for Division I and III soccer players.

The results indicate that differing levels of arousal exist between Division I and III soccer players. Nideffer (1986) stated that the factors and conditions that affect concentration must be defined. An inappropriate level of arousal, too high or too low, that has negative effects on sport performance is a major factor that must be regulated. Nideffer asserted that the control one has over his/her arousal level has direct results over the control one has over her/his ability to attend. If Nideffer's assertion is correct, Division I players would seem capable of controlling their arousal levels with greater success than Division III players because their foci of attention on the task demands of soccer are more effective and appropriate.

Massey (1981) found that high anxious volleyball athletes were more overloaded internally and externally than low anxious volleyball athletes and that low anxious athletes were able to narrow attention effectively. These findings would tend to support Nideffer's (1986) assertion (i.e., the control one has over his/her arousal level has direct results over the control one has over her/his ability to attend).

ANOVAS for division levels with the SS-RIA scales revealed significant differences ($p < .05$) for only 3 of the 10 anxiety responses. They were "urge to urinate," "yawning," and "psychs you up." From the ANOVA results, of the 3 scales capable of discriminating between Division I and III arousal levels two were physical and one was mental. The mean responses for "urge to urinate" and "yawning" were higher among Division III players. Thus, Division III players would tend to manifest anxious behavior like the "urge to urinate" and "yawning" more often than Division I players.

Division I players were more experienced and better able to control their arousal levels than Division III players. Bacon (1974) suggested that arousal effects depend upon the degree to which the stimuli attract attention. The results of this study support Bacon's suggestion (i.e., Division III players were more affected by the presence of large crowds than Division I players).

The mean response "psychs you up" was significantly higher among Division I players than Division III players. This may be

due to a superior readiness or may result from being able to recall similar anxiety situations from past experience. For example, Division I players were aroused by the presence of large crowds, booing, and poor refereeing in a positive, not a negative way. Familiarity with the anxiety situations in soccer may help explain why Division I players appraised the soccer situations positively by becoming psyched up in what appears to be an anxious situation that can generate worry and negativism.

One other mental response--"the thought that you may fail to do what you have to do"--deserves comment. This response did not reach a level of significance, although it was close to the .05 level of significance (.056). Bearing this in mind, the two mental responses--"psychs you up" and "the thought that you may fail to do what you have to do"--and the two physical responses--"urge to urinate" and "yawning"--suggest that coaches and players be made aware that these are very important behaviors to look for during anxiety-eliciting situations.

Discriminant function analysis on the SS-RIA scales revealed that the largest single contributor was "the thought that you may fail to do what you have to do" (-.838). Although this response did not reach a level of significance in the ANOVA, in this analysis it contributed nearly twice as much as the other major contributors, "urge to urinate" (.519), "yawning" (.465), and "get an uneasy feeling" (.406). The results reveal that Division I players were more affected by this negative self-defeating

response than were Division III players. A plausible explanation has been offered by Landers and Boutcher (1986), who claimed that performance disregulation often occurs as a result of anxiety brought upon by negative self-defeating thought processes. In addition, the expectations among Division I athletes to do their best without failing themselves or their coach is evidently greater than among Division III athletes. One should bear in mind though, that if the response "the thought that you may fail to do what you have to do" is permitted to consciously lodge itself in the player's mind, then the expectations that have been placed upon the player by him/herself or by the coach may be unrealistic and out of reach.

The results suggest that soccer coaches should be aware of how players are feeling during anxiety-eliciting situations. Additionally, the particular negative thoughts players may be thinking are likely to be experienced among all players but more likely affect higher level players. This would suggest that, regardless of the amount of experience an athlete may have with confronting anxiety-eliciting situations, even the superior athletes will allow negative thoughts to briefly enter their minds before casting them out.

Summary

Moderately low test-retest reliability coefficients were found for four of the eight 3TSAS scales. The lowest reliability coefficients were found for the ineffective scales, suggesting

that subjects may have had difficulty in accepting their failures on two separate occasions.

With the exception of the first physical response "mouth gets dry" on the SS-RIA, all test-retest reliability coefficients for the SS-RIA scales were fairly consistent. A range of .18 to .92 was reported to have been entirely due to the extreme low response "mouth gets dry." Possible reasons for this low response were discussed.

Cronbach's (1951) alpha reliability coefficients for the 3TSAS scales were comparatively inconsistent. A range of .57 to .80 was reported. The lowest internal consistency was found for the OIT scale. This scale was comprised of only four items. NIT and NET scales improved the internal consistency reported in previous sports studies that have used the NAR scale alone. The expectation that internal consistency would be higher for the 3TSAS scales was not supported in the results. Further research in the construction of sport-specific inventories was suggested to improve internal consistency.

MANOVA with the 3TSAS attentional scales revealed a significant difference between the two division levels. The first hypothesis, that there would be a significant difference between the scores on the 3TSAS attentional scales for Division I and III soccer players, was accepted. Division III players were found to be capable of performing the specific skills that Division I players exhibit, but failed to attend to the subtleties of the more

complex skills. The results from ANOVA and discriminant function analysis for division levels with the 3TSAS highlighted the importance of each scale. The BIT, NIT, and OIT scales contributed the most to the overall significant between divisions difference. The BET scale, expected to show prominently in the discriminant function analysis, was a subsidiary factor. This was due to the nature of the analysis and the "broad component" both the BET and BIT scales assess.

MANOVA with the SS-RIA anxiety responses revealed a significant difference between the two division levels. This finding supported Nideffer's (1986) assertion that the control one has over his/her arousal level has direct results over the control one has over her/his ability to attend. The second hypothesis, that there would be a significant difference between the scores on the SS-RIA for Division I and III soccer players, was accepted. The results from ANOVA and discriminant function analysis for division levels with the SS-RIA highlighted the importance of each response. Only 3 of 10 anxiety responses--"psychs you up," urge to urinate," and "yawning"--were found to be significantly different between the two divisions. Familiarity with anxiety situations in soccer explained to some degree why Division I players were found to appraise anxiety-eliciting situations more positively than Division III players. Discriminant function analysis revealed that the response "the thought that you may fail to do what you have to do" affected Division I players more than Division III players and

contributed nearly twice as much as the other discriminating responses--"urge to urinate," "yawning," and "get an uneasy feeling." The results suggest that familiarity with anxiety-eliciting situations in soccer may be helpful in appraising soccer anxiety situations positively and that even superior athletes will allow negative thoughts to briefly enter their minds before casting them out.

Chapter 6

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study examined the differences between attentional styles and anxiety measures for Division I and III soccer players. College male varsity Division I and III soccer players (N = 88) completed the following tests: Tests of Technical and Tactical Soccer Attentional Style (3TSAS) and a Soccer Situation-Response Inventory of Anxiousness (SS-RIA). As a measure of reliability for the testing instruments, 22 of the players (11 Division I and 11 Division III) were administered both tests on a second occasion 3-5 weeks later.

The 3TSAS consists of 40 statements (75 parts), which represent attentional demands specific to situations and skills in soccer. Each situation consists of one attentional focus. Eight types of attentional foci (BET, BIT, NET, NIT, OET, OIT, REDE, and REDI) are each represented by a separate scale. Each situation was shown on a video cassette recording machine (VCR). The instructions on the SS-RIA were self-explanatory. In this inventory 10 responses, five physical and five mental, across 15 situations were presented to each subject. The five physical responses were "mouth gets dry," "urge to urinate," "hands tremble," "yawning," and "get butterflies." The five mental responses were "get an uneasy feeling," "want to avoid the situation," "psychs you up," "the thought that you may lose keeps

entering your mind," and "the thought that you may fail to do what you have to do." Subjects were instructed to mark on a 5-point Likert scale, ranging from "never" to "always," the degree to which each response reflected their own behavior.

Test-retest reliability of the 3TSAS ranged from .38 (OET) to .73 (BET). Internal consistency coefficients of the 3TSAS revealed that scales were inconsistent compared to other reliable tests (e.g., Hooper, 1983; Taylor,1979). Coefficient alphas ranged from .57 (OIT) to .80 (REDE). Test-retest reliability coefficients of the SS-RIA ranged from .18 ("mouth gets dry") to .92 ("get butterflies"). With the exception of the physical response "mouth gets dry," fairly consistent test-retest reliability was found for the SS-RIA.

Two separate multivariate analyses of variance were performed to test the hypotheses. The first hypothesis, that there would be a significant difference between the scores on the 3TSAS attentional scales for Division I and III soccer players, was accepted. The second hypothesis, that there would be a significant difference between the scores on the SS-RIA anxiety responses for Division I and III soccer players, was also accepted.

Where significant differences were revealed, analyses of variance determined which attentional scales and/or which anxiety responses were able to discriminate the two division levels. All eight scales on the 3TSAS were able to differentiate Division I and III players, whereas only 3 of the 10 anxiety responses--"urge to

urinate," "yawning," and "psychs you up"--were able to do so.

Separate discriminant function analyses were employed to assess which attentional scales and which anxiety responses contributed significantly to the division levels group difference with the 3TSAS and SS-RIA. The BIT, OIT, and NIT scales of the 3TSAS revealed to be the most important variables that contributed to the division levels difference. The responses "the thought that you may fail to do what you have to do," "urge to urinate," "yawning" and "get an uneasy feeling" of the SS-RIA contributed the most to the division levels difference. The response "the thought that you may fail to do what you have to do" contributed nearly two times the value of the other major contributors.

Conclusions

The results of this study yielded the following conclusions:

1. The 3TSAS and the SS-RIA are able to differentiate soccer players of different ability.

2. The BIT and NIT foci of attention represent the most important attentional behavior among higher level soccer players, whereas the OIT focus of attention represents the most important attentional behavior among lower level soccer players.

3. Internal consistency of the 3TSAS remains moderate despite all the modifications made to upgrade its specificity.

4. Performances of superior level players are not likely to be negatively affected by anxiety as much as performances of lower level players even though they too experience the negative

self-defeating thoughts that typically accompany anxiety.

5. Superior performers appear to be able to harness their anxiety and turn it into an advantage.

Recommendations

The following recommendations for further study were made after the completion of this investigation:

1. Tests of attentional style based on the 3TSAS should be developed for other sports using appropriate sport-specific situations that represent the attentional scales recommended by Nideffer (1976a).

2. The 3TSAS should be administered in conjunction with tests for visual skills (e.g., visual perception, visual acuity).

3. A test of attentional style based on the 3TSAS should be administered among Division I and II soccer players and between Division II and III players to determine if significant attentional differences exist.

4. A large scale reliability study of the 3TSAS should be undertaken.

Appendix A

TEST OF TECHNICAL AND TACTICAL SOCCER ATTENTIONAL STYLE (3TSAS) ITEMS

1. I am about to receive the ball with lots of space around me. My head is up but as I receive the ball I play it too far ahead of me and end up losing it. (1)

2. I am on the flank faced with a 1-on-1 break.
   a. I attack right at the defender's front foot. (2)

   b. Even though I avoid being channeled, I fail to run with the ball faster than the defender can run backwards. I finally execute my move but a recovering defender has now taken up the first defender. (3)

3. a. I receive the ball with no immediate pressure on me. I look up and make eye contact with a forward. I play the ball into the space even though my teammate did not initiate where to run. (4)

   b. I'm a third attacker in the final attacking third of the field. I make eye contact with my teammate on the ball. I make no attempt to check for the ball and the defender steps up in front of me to intercept the pass. (5)

4. My teammate has just given the ball away in the final third. I am the sweeper now faced with a 1-on-1.
   a. I take the 50-50 chance and dive in. (6)

   b. My approach is too flat-footed and too square. (7)

5. My goalkeeper has just received the ball after a corner kick. I am on the flank about to receive the ball from my goal keeper.
   a. My run is not bent so I have to keep turning my head to see

Appendix A (continued)

where the ball is. (8)

b. I bend my run so that I can see the ball at all times as it is thrown in front of me. (9)

6. The opposition has possession of the ball on the flank in their attacking third. I am a balancing defender on the opposite flank. I am attentive to what is happening in front of me (i.e., where the play is) but not of what is happening behind me. I fail to position my body so that I can see the whole field. (10)

7. The ball is switched from one side of the field to another.
   a. I receive the ball on my chest so that it falls comfortably in my stride and away from pressure. (11)

   b. Immediately following the reception of the ball I quickly pick out my best option. (12)

   In this case it was the option of playing the 30-yd ball to a player running into the box or to carry the ball down the line.
   c. I decided to play the long 30-yd ball because it was my best option. My decision to play this ball was made up regardless of whether I could execute the technique of striking such a perfect ball. (13)

   d. I decided to play the long 30-yd because it was my best option and I knew I had the ability to execute the pass. (14)

   e. I decided to play it safe and take the ball down the line (i.e., passing up the best and quickest option). (15)

8. The ball is very high in the air as I position myself to head it. There is no pressure around me.
   a. I missed the ball because I was too sensitive to what was

Appendix A (continued)

happening around me (i.e., whether or not anyone else was going to challenge me). (16)

b. I missed the ball because I took my eye off the ball. (17)

9. Immediately following the previous incident, I have to deal with the high bounce that the ball takes. Facing the bouncing ball and the oncoming pressure, I position my body so as to receive the ball on my chest away from pressure and towards my own goal. (18)

10. My teammate is faced with a 1-on-1 situation. I am the closest player to the first defender. I fail to identify my supporting role as the second defender. (19)

11. a. I receive a one-touch ball from a teammate in the middle of the field. I am able to also play a one-touch ball to a third attacker making a run into the opposition's defending third of the field. (20)

b. I am the right back defending against a possible counter-attack. The ball is played one-touch in the midfield. I fail to see my man run behind me to receive the ball. (21)

12. I receive the ball from a knock down (e.g., a 50-50 head ball) in the midfield and fail to keep the ball or distribute it quickly enough because I am faced with pressurizing players from all angles. (22)

13. The ball is played nicely back for me to strike at goal. There is no immediate pressure.
a. I concentrate on the nature of the ball (e.g., whether it's bouncing or not, it's speed of approach). (23)

Appendix A (continued)

b. I concentrate on my feelings (i.e., how much strength I use) as I strike the ball, remembering to keep my body over the ball and if possible my toe down. (24)

14. a. I receive the ball with no immediate pressure around me. I lift my head up and make eye contact with a third attacker. I touch the ball again and again until the third attacker is already in the space. (25)

b. I am a third attacker who has just made eye contact with the midfielder on the ball. My run is too early and I get into the space before the ball arrives there. (26)

15. I am about to take a throw-in. A teammate checks for the ball but my throw is too high and too hard. (27)

16. I have the ball in the midfield. The early serve is on and expected. As the defender approaches, I chop the ball instead and outsmart the defender. I failed, however, to read through the first defender and lose the ball to the second defender. (28)

17. I check for the ball and receive it with pressure tight on me. I nicely play it off one time but, instead of running behind my defender on the blind side, I run right across his visual field. (29)

18. I receive the ball in the air from my goalkeeper's throw. Immediate pressure arrives as I receive the ball.
a. I lost the ball because my body was not positioned correctly to shield the ball as it arrives at me. (30)

b. I lost the ball because I used the wrong surface of my boot to receive the ball. (31)

Appendix A (continued)

19. a. I receive the ball with no immediate pressure on me. I fail to turn and allow the ball to run under my foot. (32)

    b. I run with the ball at speed but fail to keep the ball close to my feet. I end up overunning the ball. (33)

    c. When I run with the ball, my head tends to drop and I lose vision. (34)

20. I am faced with a 2-on-1 situation.
    a. I tend to dive in and sell myself. (35)

    b. I allow my eyes to follow the ball once it has been played. (36)

21. I receive the ball from my goalkeeper. My first touch is too strong and is played too far in front of me. The ball is intercepted. (37)

22. I am faced with a 1-on-1 situation just prior to giving the ball away. The attacker plays a one-two and I follow the ball. (38)

23. When faced to defend an attacker in a 1-on-1 situation, I tend to become eager to make play predictable. My flat foot approach only heightens my eagerness to dive in and win the ball. (39)

24. I receive the ball on the flank in the midfield. I identify two defenders taking up pressurizing defending positions. I am about to pass to a teammate but I see he has already been closed down. My head goes down and I fail to execute a maneuver. (40)

25. a. I have received the ball in midfield facing the way I am playing. I have time to back up and see what's on. I make

Appendix A (continued)

eye contact with a third attacker who fails to make any kind of checking run. I identify the space for him to run into. (41)

b. . . . and accurately play a good ball. (42)

c. I am an attacking forward in the final third of the field. My team has possession of the ball in the midfield. I make eye contact with the midfielder on the ball but fail to make any kind of checking run. Only when the ball is played do I react accordingly. (43)

d. I am defending an attacker in the final third. Their team has possession of the ball in the midfield with no immediate pressure around the ball. The player with the ball looks up at my man. I watch the player with the ball as he strikes it towards me. (44)

26. I receive a ball with a defender not too tight on my back. The ball is in play in the air but it hits the grass just as it arrives at me. The ball bounces of my foot 3 or 4 yd to my left. (45)

27. I am in possession of the ball, having just broken pressure. I see the perfect 30-yd pass that must be played instantly. I play the ball but it is not high enough. I rushed my decision and did not attend to the distance and height required by the pass. (46)

28. I am an attacker under no immediate pressure in the box as the ball is crossed over from the flank. As the ball floats in the air towards me, I have ample opportunity to shape up my body and prepare for a strike on goal. I completely miss the ball because:

a. I could not decide whether to strike it straight on or to

Appendix a (continued)

come across it. (47)

b. I lose focus of the ball because I was concerned about oncoming defenders. (48)

c. I planted my foot too far in front or behind of where the ball and my striking foot would have made contact. (49)

29. a. The opposing team has just given the ball away in their attacking third. I have the ball and recognize their slow transition. (50)

b. I identify this situation as a perfect time to counterattack and play the long 30-yd ball. (51)

c. I am the left back and balancing defender for my team as this situation arises. I fail to recognize this opportunity for their team to counter and, therefore, fail to release the pressure off the attacker I am marking. (52)

30. The counterattack is on against my team. I am the last defender. I make my recovery run to defend against the player on the ball. My speed of approach is too fast for me to slow down. The player on the ball chops the ball and, as a last resort, I dive in. (53)

31. I have the ball on the flank with no immediate pressure. I look and read a teammate's run into space. I am committed to playing the ball to him no matter what else is on. I play a poor ball straight into the path of a defender. (54)

32. My team has a free kick. The player on the ball is ready to take it. I am positioned 10-yd behind the ball. I leave my run into the space as late as possible. My timing of the run is on time

Appendix A (continued)

so that I reach into the space at the same time the ball does. (55)

33. The opposition has caught my team on a slow transition. The counterattack is on. I am the last defender faced with a 1-on-1.
    a. I identify how fast the player with the ball is running. (56)

    b. I do not commit myself to diving in. (57)

    c. I angle the player off and force him to play down the channel I have made. (58)

34. My teammate gets taken down in the midfield. I am the nearest player to the scene of the incident. As quickly as I can, I get the ball and take the free kick before the opposition can make the transition. (59)

35. The ball is being played around the back four in the direction towards the right back.
    a. I am a midfielder who makes a checking run for the purpose of creating space behind me. (60)

    b. I am the right back. I see the midfielder make the checking run towards me but cannot see the space created behind him. (61)

    c. I am the right back. I see the midfielder make the checking run towards me and I also see the space created behind him. I play the ball into the space for the third man making the run. (62)

    d. I am the right back. I play the ball with the inside surface of the foot giving the ball a slight inswing so that my teammate receives the ball in the direction towards the

Appendix A (continued)

goal. (63)

e. I am a central midfielder. I identify the space being created by the checking run from my teammate. (64)

f. I am a central defender. I leave my run into the space as late as possible in order to keep it alive. (65)

36. I have the ball faced with a 2-on-2 fast break. My options to beat the defender or pass to a teammate are available. The defender approaches me and makes play predictable by setting the angle he wishes me to play into. I dribble into the channel. (66)

37. a. I am a midfielder bringing the ball out of the back. I see the opening for a one-two. (67)

b. When executing a one-two maneuver, I portray an increase of acceleration during the second half of the one-two (i.e., the return pass). (68)

38. a. I check for the ball at an angle so that I can gain at least an extra 4 yd on my defender. (69)

b. I am able to read the game situation before and during my checking runs. (70)

c. After I have checked for the ball and played it off the first time, I immediately turn on the blind side of my defender. (71)

39. I am on the ball running towards a teammate.
a. A takeover seems to be the technical tactical maneuver in this situation. (72)

Appendix A (continued)

b. Because of the way I am guarded a takeover seems to be my best option. (73)

c. During a takeover when I am to take the ball, I always assume that I will take the ball unless my teammate chops it. (74)

40. I am attacking the end line and am ready to serve the ball. I serve the ball into one of the three goal scoring spaces (i.e., immediately in front of the near post, beyond the far post, and at the top of the 18-yd box) for my teammates to come on to. (75)

Appendix B

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

YOU ARE ON THE TEAM BUS APPROACHING YOUR OPPONENTS' SCHOOL. A FEW SPECTATORS RECOGNIZE THE VISITING TEAM AND BEGIN BOOING.

1. Get an "uneasy feeling" — A B C D E (not at all — very much)

---

2. Want to avoid the situation — A B C D E (not at all — very much)

---

3. Psychs you up — A B C D E (not at all — very much)

---

4. Mouth gets dry — A B C D E (not at all — very much)

---

5. Urge to urinate — A B C D E (not at all — very much)

---

6. Hands tremble — A B C D E (not at all — very much)

---

7. Yawning — A B C D E (not at all — very much)

---

8. The thought that you may lose keeps entering your mind		A	B	C	D	E
	not at all					very much
9. The thought that you may fail to do what you have to do		A	B	C	D	E
	not at all					very much
10. Get "butterflies" in stomach		A	B	C	D	E
	not at all					very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

YOU ARE IN THE LOCKER ROOM GETTING UNDRESSED FOR AN IMPORTANT GAME AND EVERYONE IS SILENT.

1. Get an "uneasy feeling" A B C D E
not at all very much

---

2. Want to avoid the situation A B C D E
not at all very much

---

3. Psychs you up A B C D E
not at all very much

---

4. Mouth gets dry A B C D E
not at all very much

---

5. Urge to urinate A B C D E
not at all very much

---

6. Hands tremble A B C D E
not at all very much

---

7. Yawning A B C D E
not at all very much

---

8. The thought that you may lose keeps entering your mind		A	B	C	D	E
	not at all					very much
9. The thought that you may fail to do what you have to do		A	B	C	D	E
	not at all					very much
10. Get "butterflies" in stomach		A	B	C	D	E
	not at all					very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

ONLY 2 MINUTES INTO THE GAME AND THE OPPOSING TEAM SCORES. THE CROWD BEGINS TO "CHEER."

1. Get an "uneasy feeling"	A	B	C	D	E
	not at all				very much
2. Want to avoid the situation	A	B	C	D	E
	not at all				very much
3. Psychs you up	A	B	C	D	E
	not at all				very much
4. Mouth gets dry	A	B	C	D	E
	not at all				very much
5. Urge to urinate	A	B	C	D	E
	not at all				very much
6. Hands tremble	A	B	C	D	E
	not at all				very much
7. Yawning	A	B	C	D	E
	not at all				very much

8. The thought that you may lose keeps entering your mind		A	B	C	D	E
	not at all					very much
9. The thought that you may fail to do what you have to do		A	B	C	D	E
	not at all					very much
10. Get "butterflies" in stomach		A	B	C	D	E
	not at all					very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

YOU HAVE BEEN IN THE GAME FOR 20 MINUTES AND HAVE NOT PLAYED AN ACCURATE PASS TO A TEAMMATE. A FELLOW TEAMMATE WHO RECOGNIZES YOU'RE NOT PLAYING TO YOUR FULL POTENTIAL WALKS UP TO YOU AND SAYS "IT'S OK TO MAKE MISTAKES."

1. Get an "uneasy feeling" — A B C D E (not at all — very much)

2. Want to avoid the situation — A B C D E (not at all — very much)

3. Psychs you up — A B C D E (not at all — very much)

4. Mouth gets dry — A B C D E (not at all — very much)

5. Urge to urinate — A B C D E (not at all — very much)

6. Hands tremble — A B C D E (not at all — very much)

7. Yawning — A B C D E (not at all — very much)

8. The thought that you may lose keeps entering your mind		A	B	C	D	E
	not at all					very much
9. The thought that you may fail to do what you have to do		A	B	C	D	E
	not at all					very much
10. Get "butterflies" in stomach		A	B	C	D	E
	not at all					very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

IT IS YOUR TURN TO TAKE THE DECISIVE PENALTY IN THE SHOOT-OUT. THE SCORE IS 4-4.

1. Get an "uneasy feeling"	A	B	C	D	E
	not at all				very much
2. Want to avoid the situation	A	B	C	D	E
	not at all				very much
3. Psychs you up	A	B	C	D	E
	not at all				very much
4. Mouth gets dry	A	B	C	D	E
	not at all				very much
5. Urge to urinate	A	B	C	D	E
	not at all				very much
6. Hands tremble	A	B	C	D	E
	not at all				very much
7. Yawning	A	B	C	D	E
	not at all				very much

8. The thought that you may lose keeps entering your mind		A	B	C	D	E
	not at all					very much
9. The thought that you may fail to do what you have to do		A	B	C	D	E
	not at all					very much
10. Get "butterflies" in stomach		A	B	C	D	E
	not at all					very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

YOUR TEAM HAS BEEN AWARDED A PENALTY-KICK AND YOU ARE TO TAKE IT WITH ONLY 1 MINUTE TO GO.

1. Get an "uneasy feeling" A B C D E
not at all very much

2. Want to avoid the situation A B C D E
not at all very much

3. Psychs you up A B C D E
not at all very much

4. Mouth gets dry A B C D E
not at all very much

5. Urge to urinate A B C D E
not at all very much

6. Hands tremble A B C D E
not at all very much

7. Yawning A B C D E
not at all very much

8. The thought that you may lose keeps entering your mind	not at all	A	B	C	D	E very much
9. The thought that you may fail to do what you have to do	not at all	A	B	C	D	E very much
10. Get "butterflies" in stomach	not at all	A	B	C	D	E very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

AS YOU WARM UP IN FRONT OF A LARGE CROWD BEFORE THE GAME YOU SEEM TO HAVE LOST YOUR TOUCH.

1. Get an "uneasy feeling"	A	B	C	D	E
	not at all				very much
2. Want to avoid the situation	A	B	C	D	E
	not at all				very much
3. Psychs you up	A	B	C	D	E
	not at all				very much
4. Mouth gets dry	A	B	C	D	E
	not at all				very much
5. Urge to urinate	A	B	C	D	E
	not at all				very much
6. Hands tremble	A	B	C	D	E
	not at all				very much
7. Yawning	A	B	C	D	E
	not at all				very much

8. The thought that you may lose keeps entering your mind		A	B	C	D	E
	not at all					very much
9. The thought that you may fail to do what you have to do		A	B	C	D	E
	not at all					very much
10. Get "butterflies" in stomach		A	B	C	D	E
	not at all					very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

AFTER 10 MINUTES INTO THE GAME YOU RECOGNIZE A SUBSTITUTE WARMING UP.

1. Get an "uneasy feeling"	A	B	C	D	E
	not at all				very much
2. Want to avoid the situation	A	B	C	D	E
	not at all				very much
3. Psychs you up	A	B	C	D	E
	not at all				very much
4. Mouth gets dry	A	B	C	D	E
	not at all				very much
5. Urge to urinate	A	B	C	D	E
	not at all				very much
6. Hands tremble	A	B	C	D	E
	not at all				very much
7. Yawning	A	B	C	D	E
	not at all				very much

8. The thought that you may lose keeps entering your mind		A	B	C	D	E
	not at all					very much
9. The thought that you may fail to do what you have to do		A	B	C	D	E
	not at all					very much
10. Get "butterflies" in stomach		A	B	C	D	E
	not at all					very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

A GROUP OF SPECTATORS CONTINUOUSLY "BOO" AND "JEER" AT YOU ON YOUR SIDE OF THE FIELD. THEY HAVE IDENTIFIED YOUR NAME FROM THE PROGRAM AND BEGIN TALKING ABOUT YOU VERY LOUDLY WITH THE INTENT THAT YOU CAN HEAR THEM.

1. Get an "uneasy feeling" A B C D E
not at all very much

---

2. Want to avoid the situation A B C D E
not at all very much

---

3. Psychs you up A B C D E
not at all very much

---

4. Mouth gets dry A B C D E
not at all very much

---

5. Urge to urinate A B C D E
not at all very much

---

6. Hands tremble A B C D E
not at all very much

---

7. Yawning A B C D E
not at all very much

---

8. The thought that you may lose keeps entering your mind	not at all	A	B	C	D	E very much
9. The thought that you may fail to do what you have to do	not at all	A	B	C	D	E very much
10. Get "butterflies" in stomach	not at all	A	B	C	D	E very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

YOU ARE ABOUT TO ENTER THE GAME FOR THE FIRST TIME AND YOU KNOW IF YOU MESS-UP YOU WILL BE REPLACED.

1. Get an "uneasy feeling" A B C D E
not at all very much

---

2. Want to avoid the situation A B C D E
not at all very much

---

3. Psychs you up A B C D E
not at all very much

---

4. Mouth gets dry A B C D E
not at all very much

---

5. Urge to urinate A B C D E
not at all very much

---

6. Hands tremble A B C D E
not at all very much

---

7. Yawning A B C D E
not at all very much

---

8. The thought that you may lose keeps entering your mind		A	B	C	D	E
	not at all					very much
9. The thought that you may fail to do what you have to do		A	B	C	D	E
	not at all					very much
10. Get "butterflies" in stomach		A	B	C	D	E
	not at all					very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

THE CROWD NEVER BOTHERS YOU, BUT THIS TIME YOUR PARENTS ARE HERE.

1. Get an "uneasy feeling" A B C D E
not at all very much

2. Want to avoid the situation A B C D E
not at all very much

3. Psychs you up A B C D E
not at all very much

4. Mouth gets dry A B C D E
not at all very much

5. Urge to urinate A B C D E
not at all very much

6. Hands tremble A B C D E
not at all very much

7. Yawning A B C D E
not at all very much

8. The thought that you may lose keeps entering your mind		A	B	C	D	E
	not at all					very much
9. The thought that you may fail to do what you have to do		A	B	C	D	E
	not at all					very much
10. Get "butterflies" in stomach		A	B	C	D	E
	not at all					very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

THE REFEREE HAS JUST NOTIFIED THE SCHOOL 20 MINUTES BEFORE KICK-OFF THAT HE WILL BE LATE.

1. Get an "uneasy feeling"	A	B	C	D	E
	not at all				very much
2. Want to avoid the situation	A	B	C	D	E
	not at all				very much
3. Psychs you up	A	B	C	D	E
	not at all				very much
4. Mouth gets dry	A	B	C	D	E
	not at all				very much
5. Urge to urinate	A	B	C	D	E
	not at all				very much
6. Hands tremble	A	B	C	D	E
	not at all				very much
7. Yawning	A	B	C	D	E
	not at all				very much

8. The thought that you may lose keeps entering your mind		A	B	C	D	E
	not at all					very much
9. The thought that you may fail to do what you have to do		A	B	C	D	E
	not at all					very much
10. Get "butterflies" in stomach		A	B	C	D	E
	not at all					very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

YOU HAVE JUST RECEIVED A HEAVY BLOW TO THE ANKLE. YOU CAN RUN IT OFF EVEN THOUGH IT HURTS TO PLAY. TEN MINUTES LATER YOU WITNESS YOUR TEAMMATE ENCOUNTER A SIMILAR TACKLE. HE HAS TO GO OFF THE FIELD.

1. Get an "uneasy feeling" A B C D E
not at all very much

2. Want to avoid the situation A B C D E
not at all very much

3. Psychs you up A B C D E
not at all very much

4. Mouth gets dry A B C D E
not at all very much

5. Urge to urinate A B C D E
not at all very much

6. Hands tremble A B C D E
not at all very much

7. Yawning A B C D E
not at all very much

8. The thought that you may lose keeps entering your mind	not at all	A	B	C	D	E very much
9. The thought that you may fail to do what you have to do	not at all	A	B	C	D	E very much
10. Get "butterflies" in stomach	not at all	A	B	C	D	E very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

YOU HAVE JUST RECOVERED FROM AN INJURY AFTER 6 WEEKS. YOU ARE ABOUT TO ENTER THE GAME FOR THE FIRST TIME SINCE YOUR INJURY.

1. Get an "uneasy feeling" A B C D E
not at all very much

---

2. Want to avoid the situation A B C D E
not at all very much

---

3. Psychs you up A B C D E
not at all very much

---

4. Mouth gets dry A B C D E
not at all very much

---

5. Urge to urinate A B C D E
not at all very much

---

6. Hands tremble A B C D E
not at all very much

---

7. Yawning A B C D E
not at all very much

---

8. The thought that you may lose keeps entering your mind		A	B	C	D	E
	not at all					very much
9. The thought that you may fail to do what you have to do		A	B	C	D	E
	not at all					very much
10. Get "butterflies" in stomach		A	B	C	D	E
	not at all					very much

Appendix B (continued)

REACTIONS TOWARDS SITUATIONS IN SOCCER (SS-RIA)

YOUR TEAM IS BY FAR THE UNDERDOG AND YOU ARE NOT EXPECTED TO WIN. YOU ENTER ONTO THE FIELD AND THE CROWD "BOOS" AND "JEERS" AT YOU AND YOUR TEAMMATES.

1. Get an "uneasy feeling" A B C D E
not at all very much

---

2. Want to avoid the situation A B C D E
not at all very much

---

3. Psychs you up A B C D E
not at all very much

---

4. Mouth gets dry A B C D E
not at all very much

---

5. Urge to urinate A B C D E
not at all very much

---

6. Hands tremble A B C D E
not at all very much

---

7. Yawning A B C D E
not at all very much

---

8. The thought that you may lose keeps entering your mind		A	B	C	D	E
	not at all					very much
9. The thought that you may fail to do what you have to do		A	B	C	D	E
	not at all					very much
10. Get "butterflies" in stomach		A	B	C	D	E
	not at all					very much

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