Exploring Elite Soccer Players' Attentional Focus in Performance Tasks and Game Situations

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Thesis submitted to the Faculty of Graduate and Postdoctoral Studies

in partial fulfillment of the requirements for the

Master of Arts degree in Human Kinetics

School of Human Kinetics

Faculty of Health Sciences

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Abstract

The purpose of this study was to investigate elite soccer players' attentional focus during their best performances, better understand the strategies they use to enter or re-enter optimal attentional states, and explore potential attentional differences according to soccer positions, performance tasks, and game situations. No previous studies have explored elite soccer players' attentional skills from a naturalistic and qualitative perspective in such detail. The growing interest in soccer among Canadians provided further justification for this study. Data collection consisted of individual semi-structured interviews with eight elite soccer players from five main soccer positions, namely goalkeeper, defender, wing, midfielder, and forward. Cross-case thematic analysis indicated positive thinking and pre-performance routines as important sources of optimal focus. Attentional focus varied according to soccer positions and performance tasks. Information processing, sport expertise, and attentional systems theoretical frameworks informed the discussion of results. Applied and theoretical implications were drawn and future studies were recommended.

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Acknowledgements

This project counted with the collaboration and support of several people and institutions:

- My wonderful wife, who has been an amazing partner and a great inspiration in all times, and my amazing and supportive family, especially my mom, my dad, my grandma, my brother, my "thousands" of siblings, my uncle, and others. Thank you all for having always supported my choices and encouraged me to make my dreams come true.
- My supervisor, Dr. Terry Orlick, for teaching me the essential role *focus* plays in our lives.
- My committee members, Dr. Diane Culver and Dr. Penny Werthner who were extremely supportive and helpful.
- My mentors, Dr. Brad Young and Dr. Audrey Giles.
- All those who helped with the recruitment of participants for my study.
- My UOttawa friends, for the support and inspiring discussions. Tiago for the life changing question: "Why don't you apply to UOttawa?", Jenny for amazing proofreading and feedback, Katie for the great support, Brittany for the guidance, encouragement, and partnership, Kylie for the great exchange of ideas, experiences, social support and motivation, and many other colleagues both from the applied and the research stream Alex, James, Corliss, Kara, Maria, Rita, Larry, Dina, and others.
- Other professors for their support and encouragement, especially Dr. Jennifer Brunet, Dr. Martin Camiré and Prof. Stella Sarmento (from Brazil).
- UOttawa staff - Lise, Bettyna, Catherine Cusson-Garneau, Catherine Coulombe, and others.
- My friends who are back in Brazil and the new ones I made in Canada.
- My participants, athletes who kindly accepted to collaborate with this study.
- The University of Ottawa for offering me this great opportunity.
- And last but not least, the Social Sciences and Humanities Research Council of Canada (SSHRC), for funding this project through the Joseph-Armand-Bombardier Canada Graduate Scholarship (766-2012-0656).

Thank you all!

Rafael Tedesqui

Chapter I: Introduction

The ability to maintain an optimal focus and prevent thinking about uncontrollable aspects of performance has been identified as a key mental skill for achieving excellence in athletic performance (Orlick & Partington, 1988; Orlick, 2008). Abernethy (2001) stated that it is hard to imagine a skill that is more important to the learning and performance of sports skills than the ability to focus attention on the task at hand. Based on a large number of studies with high performance athletes as well as elite performers in many other high performance disciplines, Orlick (2008) situated focus as the main driver of the wheel of excellence, a model he developed which contains the seven critical elements required to excel in any sport or high performance domain. These seven elements of excellence include focus, commitment, mental readiness, positive images, distraction control, confidence, and ongoing learning.

Even though focus has been identified as a key factor influencing consistent high level performance, virtually no research has been done on the attentional focus of elite soccer players from a naturalistic and qualitative perspective. The purpose of this study was to explore elite soccer players' attentional focus in different performance situations and tasks and to better understand their focus in best and less-than-best performances. This research study aimed to answer the following research questions: (a) What do elite soccer players focus on during their best and less-than-best performances?; (b) What strategies do they use to enter or re-enter optimal attentional states?; and (c) Are there different or specific characteristics of attentional focus in different soccer positions (e.g., goalkeeper and forward) and in different performance tasks and situations (e.g., before passing or facing poor officiating)?

Few studies have explored the focusing skills of elite soccer players. Findings of this research study may help aspiring young soccer players as well as professional athletes and coaches better understand the "keys to success" in high level soccer. More specifically, the findings may help them better understand some of the key mental strategies used by elite soccer players and how they use these strategies. Coaches may also discover some useful soccer-related tools that they can use to help their athletes achieve higher levels of performance excellence and greater consistency with best performances. Those who seek performance improvement or excellence in other life domains might also benefit from the findings of this study since psychological skills for sport improvement can also be applied to an individual's personal and professional pursuit of excellence (Orlick, 2008). The findings of this study may also be relevant to the field of sport psychology, especially for performance enhancement practitioners who may discover useful tools for working with athletes, and for applied researchers who might be inspired to find new relevant information to build a stronger knowledge base in our field.

Chapter II: Literature Review

In the following section, previous literature related to the topic under study is described in detail. First, the worldwide popularity of soccer and the growing interest in soccer among Canadians and Americans provide justification for this particular study. Then, the potential contribution of this study to the field of applied sport psychology is presented. The field of sport psychology is still growing. This study which explores the focusing skills and attentional characteristics of top athletes in the world’s most popular sport can certainly make a contribution to better understand the relationship between focusing skills and high level performance in sport. Finally, we present previous studies related to attentional focus of

high level athletes, including soccer players, and the theoretical framework that informed this research study.

Soccer

Considered the most popular team sport on the planet (Dunning, 1999), soccer–normally called football outside of North America–is gradually gaining importance among Canadians. Whenever asked about Canada's most popular sport, many will say hockey without hesitation. It seems to be an obvious answer. However, findings from surveys conducted by Statistics Canada (Clark, 2008) revealed that soccer is the organized sport with the highest participation rate among Canadian children and teenagers between 5 and 14 years old. In fact, it might be rather surprising for some Canadians to know that 20% of 5- to 14-year-old Canadians reported soccer as the sport in which they participated regularly (i.e., at least once a week in the last 12 months). Swimming came next with 12% participation, followed by hockey with 11% participation.

It is interesting to note that participation studies in 1995 found soccer was not as popular as it is today (Clark, 2008). At that time, soccer was played by 12% of the same age group, whereas swimming and hockey were practiced by 17% and 12%, respectively. It is evident that the interest in soccer is growing in Canada. In addition, the survey showed that the amount of money that is invested on sport depends on what is left after the coverage of essential household expenses. If compared to hockey, for instance, the required equipment for soccer (e.g., soccer cleats and shin guards) is much cheaper than that of hockey (e.g., hockey stick, skates, gloves, helmets, and a number of pads). Consequently, the relatively low cost of soccer (e.g., soccer cleats ranging from $20 to $70, with hockey skates ranging from $35 to $300 in a department store such as Canadian Tire) adds to the attractiveness of the sport (Sports & Rec., 2011, December 8). Furthermore, from a high performance

perspective, the historic bronze medal won by the Canadian women's soccer team and the gold medal won by the US women's soccer team in the 2012 London Olympic Games also demonstrate the competitive rise of elite-level soccer in North America. This bronze medal was Canada's first Olympic medal in a traditional team sport at the Summer Games since 1936. In addition, the CBC Sports staff voted for the Canadian Women's Soccer Team as the Canadian team of the year, and the fans chose the captain of the team, Christine Sinclair, as Canada's athlete of the year for 2012 (Rycroft, 2012, December 18).

Given the increasing popularity of soccer in Canadian society, the study of the psychological characteristics of high level soccer players could be of great value due to the possibility of revealing mental factors related to high level sport achievement in soccer-specific contexts.

Sport Psychology, Mental Skills, and High Performance

Sport psychology was defined by Weinberg and Gould (2001) as the study of the influence of psychological factors over the physical performance, and the influence of sport and physical activity participation on psychological development, health, and well-being. According to Martens (1974, as cited in Kontos & Feltz, 2008), psychological kinesiology is the study of the psychological aspects of human movement. In their review on the nature of sport psychology, Kontos and Feltz (2008) considered Martens' concept to be a comprehensive view of the study of behaviour in sport. Of particular interest to this study is the branch of sport psychology concerned with the psychological skills that influence high level sport performance enhancement.

Psychological strategies or mental skills related to high performance have been one of the main focuses of theoretical and applied research in sport psychology in the last few decades (Horn, 2008). Weinberg and Gould (2001) advocated that just like physical skills,

psychological strategies such as focusing concentration, arousal regulation, confidence improvement and sustaining motivation can be learned, but need to be systematically trained and integrated to daily practice.

In 1977, Mahoney and Avener conducted an exploratory study to identify psychological factors and cognitive strategies used by U.S.A. Olympic gymnasts. They pointed to self-verbalizations, mental imagery, and coping with competitive stress as relevant strategies for high level performance. More than a decade later, in a review of studies that used psychological interventions with athletes in competitive situations, Greenspan and Feltz (1989) concluded that relaxation-based interventions (i.e., those that did not attempt to modify cognitions) and remedial cognitive restructuring strategies were effective in improving the competitive performance of collegiate and adult athletes.

The number of studies related to the effects of mental skills on athletes' performance has grown considerably in recent years. A quick Boolean search in SPORTDiscus, a major database in the sports field, demonstrated its significant growth. A search of the words (mental OR psychological) AND (skills OR strategies) AND "sport" in the abstract field revealed over 1200 peer reviewed works published over the last 20 years (i.e., between 1993 and 2013). Despite the growth of the literature on the relationship between psychological skills training and performance enhancement, Thelwell, Greenlees, and Weston (2010) have called attention to areas of research that still need development. They cited the following areas: the provision of a rationale for the choice of skills in interventions, the influence of intervention on performance subcomponents, and the effect of mental skills on performance throughout competition. Their research findings provided evidence that intervention development and delivery should consider specific sport roles as well as their related psychological priorities.

According to Taylor's (1995) conceptual model, each sport has specific physical, technical and logistical demands that impact the mental preparation that athletes use. Sports may be explosive and anaerobic (e.g., 100m sprint), require endurance and aerobic capacity (e.g., marathon), involve fine motor skills (e.g., golf putting) or gross motor skills (e.g., power lifting), may last less than a minute (e.g., diving) or more than an hour (e.g., soccer and hockey). These differences have an implication on the psychological priorities of the sport. These priorities may be high intensity and narrow focus in 100m sprint, or high confidence and motivation, and ability to shift focus in aerobic and long duration sports. Sports such as soccer, hockey, and basketball which involve a combination of different skills and physiological demands also require different psychological skills during different moments of the performance. This research study addressed these needs by exploring the soccer athletes' psychological priorities related to attentional requirements in high level performance, and the role of attentional focus on different performance subcomponents (e.g., passing, controlling the ball, and taking a penalty shot).

Attentional Focus and Elite Soccer Players' Performance

In order to better understand elite soccer players' attentional focus, it is important to note that there is much overlap between the concepts of attentional focus, attention, and concentration in the literature. According to Taylor (1995), *concentration* is defined as the "ability to focus on performance-relevant aspects of the attentional field" (p. 341). For Vealey (2007), *attentional focus* is the ability to direct and sustain focus. And Boutcher (2008) defined *attention* as the ability to switch focus from different sources of information. The similarity between these concepts is evident, which provided justification for the inclusion of the broader concept of attention in the literature review of this research study.

Attention has been considered a vital aspect of sport performance (Abernethy, 2001; Boutcher, 2008). Nideffer (1976) considered the ability to direct and control the attention as the most central variable to performance. Similarly, Janelle (2002) stated that "attention to the most relevant and information-rich areas of the visual scene is critical for effective sport performance" (p. 237). As Abernethy (2001) noted, in many team sports (e.g., hockey, basketball, and soccer), attentional demands are complex, since the athletes are required to perform two or more skills at the same time (e.g., dribbling the ball while scanning the field to find an open teammate to pass the ball).

In 1890, William James stated, "without selective interest, experience is an utter chaos" (p. 402). The individual constantly focuses, either consciously or unconsciously, their attention on certain stimuli, while other stimuli remain as background (Boutcher, 2008). According to Baumeister and Heatherton (1996), since attention is the first stage in information processing, most cognitive models of behavioural control begin with this psychological skill. Baumeister and Heatherton considered attention management as the most common and effective form of self-regulation. They added that effective management of attention was a decisive step in controlling thoughts, emotions and moods, impulses, and task-performance processes.

Attentional focus and performance. The role of attentional focus on performance is also well established in the sport psychology literature. According to Werthner (2002), what is required to succeed at the highest level of sport is a clear focus on the execution of the game plan. In addition, extensive performance consulting and in-depth interview research with hundreds of high level performers in different high performance disciplines led Orlick (2008) to place focus at the centre of his wheel of excellence model. Applied research and consulting work with high level performers in many different domains led him to believe that

a positive and fully connected focus is the main psychological factor leading to performance improvement and personal excellence in all high performance domains. By focusing on the task at hand or on the here and now, the athlete does not engage in rumination (e.g., thinking about previous mistakes) or anticipation thoughts (e.g., worrying about the end result or what the coach will say) which could act as distractions by removing the athlete's focus from task-relevant cues.

In a study about focusing strategies of elite marathon runners, Benz (2009) found that being in the moment was one of the most essential elements that contributed to the athletes' best focus and best performance. She found that, during their best performances, elite marathon runners had a positive and fully connected focus which they adapted to meet different demands at different points in the marathon. Among the focusing strategies used by these elite athletes, she found visualization allowed them to focus on task-relevant cues and to achieve a positive and confident perspective. The ability to shift from a relaxed to an intense focus, according to the changing demands of the race, was also considered an important skill by the runners in her study. Refocusing strategies were used when athletes experienced distractions such as task-irrelevant and/or negative thoughts, and included focusing only on what was under the control of the athlete, turning negatives into positives, and replacing distractions with task-relevant cues (e.g., pace or running relaxed). Athletes reported using key words or self-talk as a common strategy to refocus or deal with distractions, manage emotions, and cope with fatigue.

Focusing was identified as one the most important mental skills in Barbour’s (1994) study on National Hockey League players' mental skills. He stated that due to the great number of games and practices in a short period of time, NHL players found it difficult to be fully focused during every game and every practice. Nevertheless, despite the challenge of

sustaining a positive and connected focus, all high performance NHL athletes who were interviewed (n = 10) referred to their mental state or focus during the game as a critically important skill that accounted for differences between best-ever and poor performances. In the words of one NHL player, "I think that the main thing mentally in hockey is to focus on what's in front of you, not the past or what might happen if you do well or you don't do well" (Barbour, 1994, p. 46). Findings from that study also suggested that focusing fully on what is front of you played an even greater role during playoffs than during regular season.

Similarly, Orlick and Partington (1988) referred to the critical influence of focus in the performance of Olympic athletes. Athletes who performed their best were focused in the moment, on executing their task. Athletes who did not perform their best at the Olympics were often focused on distractions. In their large-scale investigation involving 235 Canadian Olympic athletes from numerous sports, including soccer, they found that distractions were one of the three main barriers to optimal performance. "When they stepped into the arena these athletes (who did not perform to capacity) were often focused on the crowd, on the cameras, on the possible outcome, on self-doubts, or on the strength of their competitors" (Orlick & Partington, 1988, p. 115). In a study on baseball players' emotions, Snyder and Ammons (1993) identified some focusing strategies players used in game situations in order to prevent distractions that could hinder their behavioural and psychological control, and ultimately their performance. One player described being at bat and batting successfully in the following way, "I try to block out everybody in the stands and try to picture just me and the pitcher" (Snyder & Ammons, 1993, p. 124).

There appear to be two general ways by which attentional focus is defined or understood. It can be viewed as the direction of attention (e.g., focus on the task or focus on the crowd), such as in Orlick and Partington's work (1988) or it can be viewed as a

psychological state (e.g., to be fully focused or to have a fully connected focus), as presented in Orlick's (2008) wheel of excellence model. When viewed as the direction of attention, focus is considered as a cognitive variable that needs to be managed appropriately in order to provide the desired results (e.g., high performance in sports). When viewed as a psychological state, focus is considered as a goal to be achieved, which ultimately produces high level performance. In this thesis literature review, attentional focus is considered from both perspectives. Attentional focus is both a process and a goal and seeing it this way helped gain insight from different kinds of data, that is, data about mechanisms associated with optimal attentional functioning, and data on the antecedents of optimal attentional states.

Theoretical frameworks. Boutcher (2008) classified studies that investigated the role of attentional focus on performance according to three different theoretical frameworks used to understand this relationship, namely information-processing, social psychological, and psychophysiological perspectives.

Information-processing perspective. Information processing theories have looked at attentional selectivity (Boutcher, 2008), especially with respect to the concept of controlled and automatic processing of information (Schneider & Shiffrin, 1977). Control processing is related to the conscious effort the individual makes to direct attentional focus to task execution in order to perform well (e.g., in the process of decision making, or when learning a new skill). Automatic processing involves the execution of well-learned skills that require little controlled attention in order to be executed (e.g., ball control of an elite soccer player). According to Baumeister (1984), directing the attention to the execution of well-learned skills may impair performance, since the conscious effort to control the movements tends to interrupt the automatic processing involved in muscle movement and coordination that is

essential for effective performance. Baumeister explained that control processing tends to happen in high pressure situations (e.g., in a high-stakes competition match), when the individual realizes the importance of correct skill execution (e.g., scoring in a penalty shot), and attempts to ensure the accurate execution by monitoring the process of performance (e.g., attempting to consciously control the power of the kick and the position of the foot while kicking). He used the expression "choking under pressure" to describe the phenomenon of performing poorly when the stakes are high.

In relation to choking under pressure, Masters (1992) found that decrements in performance are more likely to happen in the skill of performers who possess a larger pool of explicit knowledge about the processes involved in the execution of the skill (e.g., knowing the combination of the leg and foot movements involved in the process of controlling the ball). Skills that are learned implicitly, without knowledge of the rules and processes implicated in their execution, are believed to be less likely to suffer under pressure. Masters's (1992) underlying principle was that when an athlete, who has acquired a skill implicitly, faces a pressure situation and attends to skill execution in order to exert conscious control over the performance, the athlete will not be able to break it down as thoroughly as an athlete who has learned it explicitly.

The automatic control of expert skill may impair the recall process of skill execution. According to Beilock and Carr (2001), the development of expertise tends to generate a phenomenon called *expertise-induced amnesia*. They referred to the difficulty experts may have to describe in detail the processes involved in the execution of well-learned skills. In other words, well-learned and highly practiced skills are performed in an automatic way, that is, they are controlled by mental and motor programs and carried out with little requirement of conscious attention to processes. Thus, because well-learned skills are performed with

little attention, their recall and verbal description may be impaired. It is important to note that while the description of motor skills and cognitive processes that happen under automatic processing of information may be impaired, high performance athletes can still describe the feeling of the connection and their overall experiences during best performances.

The direction of the attentional focus also has an influence on performance. Wulf and Prinz (2001) reviewed the differences between the internal and external attentional focus and their influence on performance outcomes. They defined external focus as the individual's attention that is directed towards the movement effects (e.g., focusing on the ball going to the top-right corner of the goal before taking a penalty shot) and internal focus as the individual's attention that is directed to the movements themselves (e.g., focusing on the foot position before taking the penalty shot). They found support for the beneficial effects of adopting an external focus of attention, especially directing attention to movement effects, which seems to allow the automatic control processes to regulate the movement. In contrast, an internal focus of attention was found detrimental to performance, once the internal focus constrains the motor system, by interfering with the automatic control. Two recent reviews carried by Wulf (2007; 2013) helped confirm these findings and provided support for the beneficial effects of an external focus of attention for performance outcomes.

An interesting information processing theory was developed by Wegner (1994). He used the expression "ironic processes of mental control" (Wegner, p. 34) to illustrate that in some situations, specifically when the capacity to achieve mental control is reduced due to distraction, cognitive load, stress, or time pressure, the attempt of the individual to control the mind fails. For instance, in a hypothetical situation, before the player takes the penalty shot, he/she may try to exert control over his/her mind in two detrimental ways. First, by thinking that he/she must remain calm, the monitoring attentional process will look for signs

of calmness, therefore directing attentional focus to the player's physiological state (e.g., pulse, breathing, and muscle tension). Second, by trying to avoid kicking "too high" as the player or a teammate might have done in a previous shot, the attentional focus is directed to over the bar where the ball was kicked in the previous attempt. "Ironically", the chances are greatly increased that, in an attempt to exert mental control, the athlete may raise his/her anxiety level by noticing physiological anxiety symptoms and may kick the ball over the bar by focusing exactly on the undesired spot.

Posner and Boies (1971) proposed three components to human attention, namely alertness (i.e., ability to maintain sensitivity to external stimuli), selectivity (i.e., ability to select information from one source rather than another), and processing capacity (i.e., limitation in the amount of information that can be processed at one time). In 1990, Posner and Petersen further developed an information-processing model to explain the human attentional system.

The attentional systems framework proposed by Posner and Petersen (1990) and systematically explained by Carr and Hinckley (2012) is briefly outlined now. According to this framework, the attentional system is as a set of mental functions that are separate from sensory, memory, language, and motor information-processing systems, and are executed by a different set of neural systems. This framework divides attention in three systems that perform different functions. The first system is responsible for the functions of alerting, arousal, and vigilance and it prepares the individual for task performance. Levels of arousal are negatively correlated with the complexity of the task. In simple tasks, high arousal levels are beneficial. In complex tasks, lower levels are desirable. In addition, there is an optimal level of arousal which tends to maximize task execution, while higher or lower levels than the optimal level tend to harm performance (Carr & Hinckley, 2012).

The second system is the selective attention system whose role is to orient toward and select sources of information from the external world and the memory (Carr & Hinckley, 2012). It regulates the flow of information by giving (i.e., facilitating) or reducing (inhibiting) priority to stimuli according to the task goals. For instance, priority to stimuli stemming from the crowd will be reduced, especially if it is loaded with negative content (e.g., away crowd booing). This inhibition of task-irrelevant stimuli allows the individual to act according to task goals. Inhibition is also triggered by the detection of conflict or ambiguity. Conflict refers to a situation where two or more thoughts compete to be attended or two or more actions compete to be performed. Another situation requiring the inhibition of information is when the individual experiences task-irrelevant thoughts or "mindwandering" (Carr & Hinckley, 2012, p. 74). In such a situation, mental activity drifts away from the boundaries of the task and attention switches between external (i.e., task) and internal (i.e., introspection) contexts. When the individual has task-irrelevant thoughts, attentional focus is less directed to external perceptual input, and more to self-related inner thoughts.

Working memory is the third attentional system (Carr & Hinckley, 2012). It performs the functions of executive control and supervision of goal-directed task performances. Therefore, it is responsible for temporary maintenance and manipulation of information including the shifting of attentional focus, which may happen intentionally or reflexively. While the intentional shift is regulated by executive control processes called endogenous control, the reflexive attentional shift is "driven by the sudden onset of a new, high-intensity, or potentially important stimulus in the environment" (Carr & Hinckley, 2012, p. 68). This latter kind of executive control is called stimulus-driven exogenous control.

Drawing from the attentional systems framework, a player with exceptional attentional focusing skills is one who is able: (a) to successfully manage his/her arousal level

to an optimal level, that is, appropriate to the task (e.g., low arousal levels to control an air ball); (b) to successfully deal with conflict monitoring by giving or reducing priority to stimuli according to the task goals (e.g., defender being able to disregard the forward's deceptive movements); and (c) to intentionally shift attention to relevant information while negotiating potentially disturbing reflexive attentional shifts (e.g., penalty kick taker avoiding being distracted by the goalkeeper's moves).

Social psychological frameworks. Social psychological perspectives have emphasized the role of distraction theories in explaining that decrements in performance are caused by factors that attract attentional focus to task-irrelevant cues (Boutcher, 2008). These theories have also pointed to the relevance of automatic functioning (Baumeister, 1984), and the individual's attentional style (Nideffer, 1976). According to Nideffer (1976), the focus of attention can vary in width (i.e., broad or narrow) and direction (i.e., external or internal), and it changes according to task demands. For instance, in a soccer penalty shot, the task requires the player to use a narrow (i.e., eliminating other sources of information such as the crowd) and external (e.g., on the ball or at the desired corner of the goal) attentional focus. Nevertheless, if the player in this hypothetical situation does not manage the attentional focus appropriately, and instead uses a broad and/or internal focus, the attention would be directed to task-irrelevant cues such as thoughts related to the fear of failure (e.g., "I can't miss") or evaluative concerns (e.g., "what will the coach say?").

Performance worries such as the exemplified fear of failure and evaluative concerns may be rooted in the individual's anxiety levels. According to Wine (1971), anxiety can be regarded as a potential source of distraction and differences in the focus during performance may be partly explained by the level of anxiety the individual presents. During task performance, highly anxious individuals divide the attention between self-relevant and task-

relevant variables. In contrast, individuals with lower levels of anxiety tend to focus the attention more fully on the task.

As previously described, from an information-processing perspective, explicit monitoring theories or self-focus explanations of choking under pressure (e.g., Baumeister, 1984; Beilock, 2010; Beilock & Carr, 2001; Jackson & Beilock, 2008; Masters, 1992) suggest that performance decrements occur due to conscious attentional focus being directed to the automatic processes of skill execution, thus disrupting the autopilot. Nevertheless, from an alternative perspective, distraction theories such as the processing efficiency theory (PET; Eysenck & Calvo, 1992) and the attentional control theory (ACT; Eysenck, Derakshan, Santos, & Calvo, 2007) emphasize the role of performance worries on performance drops. According to distraction theories, in pressure-filled situations (e.g., final matches of a tournament), individuals tend to experience high levels of cognitive anxiety. In turn, such high levels of anxiety draw the individual's attention to performance worries (e.g., "I can't miss this shot"). As a result, little attentional resources are available for processing task-relevant stimuli which impairs performance.

Oudejans, Kuijpers, Kooijman, and Bakker (2011) investigated the attentional focus of expert athletes to better understand which attentional focus they experienced more frequently whenever they performed under pressure. Through retrospective verbal reports and concept mapping they investigated whether attention to skill execution (i.e., self-focus) or attention to performance worries (e.g., fear of failure) were responsible for performance decrements under pressure. They found expert athletes' attention was often focused on performance worries and rarely on movement execution. Therefore, they found evidence to support distraction theories in the explanation of choking under pressure as opposed to a self-focus explanation of choking.

In addition to the intensity dimension of anxiety, research has shown that the direction of anxiety is also an important dimension that must be taken into account (Hanton, Wadey & Mellalieu, 2008). The direction dimension refers to a continuum where anxiety can be interpreted as either facilitative or debilitative to performance (Jones, 1995). Therefore, athletes who experience high anxiety levels will not necessarily present inferior performance, especially if they interpret their anxiety levels as facilitative to performance. Previous research comparing non-elite versus elite athletes showed that athletes vary in their coping responses to anxiety symptoms according to their expertise levels (Hanton et al., 2008). While non-elite performers tend to use psychological strategies to reduce the intensity of anxiety symptoms (e.g., relaxation strategies), elite athletes tend to maintain their anxiety levels and use strategies to help them interpret anxiety-related responses as facilitative to performance (e.g., self-talk). It is interesting to note that Hanton et al. (2008) also found heightened attentional focus as one of the underlying causal mechanisms that enabled athletes to avoid performance decrements under pressure. They explained that by using psychological strategies, the athletes were able to feel more comfortable with their anxiety responses (i.e., interpreted as facilitative to performance), which allowed them to allocate the available attentional resources to task-relevant stimuli, thus avoiding performance decrements.

Psychophysiological perspectives. Psychophysiological theories highlight the relationship between attentional focus in sport performance and cortical and autonomic responses (Boutcher, 2008). This relationship has been investigated through the study of brain activity, cardiac rates, and eye gaze (Boutcher, 2008). Research findings from the eye gaze or visual search behaviour literature are of particular interest to the current study. Visual search behaviour was defined as "the way the eyes move around the visual display in an

attempt to direct visual attention towards relevant sources of information" (Williams, 2002, p. 169). Visual search behaviour is typically examined through eye movement registration systems which record participants' eye movements and the visual fixations as they perform a task.

Research has shown that experts have fewer gaze fixations on the target and longer quiet eye periods (Janelle, Hillman, Apparies, Murray, Meili, Fallon, & Hatfield, 2000; Mann, Williams, Ward, & Janelle, 2007; Vickers, 1996). The quiet eye period was defined as the temporal duration between the moment the eyes are fixated on the target and the initiation of a motor response (Vickers, 1996). Vickers (1996) found the longer the quiet eye period (e.g., on the desired corner of the goal), the more optimal to performance the preparatory period will be. Therefore, expert athletes were found to make greater use of information from critical locations on the target than non-experts and with a greater economy of gaze behaviours. Specifically, expert athletes presented lower frequencies and longer duration of fixations on critical locations of the target compared to less expert counterparts. Longer quiet eye periods are believed to allow performers an extended duration of motor programming while minimizing distraction from irrelevant cues.

Roca, Ford, McRobert, and Williams's (2011) findings contrast with those reported by Vickers (1996). Roca et al. (2011) investigated the visual search behaviours of skilled versus less skilled soccer defenders. Skilled participants' visual search strategy involved more fixations of shorter duration, alternating gaze more often between the opponent in possession of the ball/the ball itself and other areas of the display. Skilled players spent more time fixating on the attacking players and areas of free space comparing to less skilled players. The less skilled group fixated more on the player in possession of the ball and on the ball movement.

Among others, this contradiction led Williams and Ford (2013) to conclude in a recent review that findings on gaze behaviour are not entirely consistent across studies. In some studies, no differences in gaze characteristics were reported across skill groups. In these cases where gaze behaviour was not different across skills groups, Williams and Ford (2013) explained that variations in performance were likely due to an increased ability of experts to recognize information through peripheral vision or to extract greater quality and/or quantity of information per fixation.

Related frameworks. Several concepts and variables are related to the attentional focus of elite athletes either as antecedents, outcomes, moderators, or correlates. These factors include but are not limited to perceptual and cognitive expertise (e.g., Causer, Janelle, Vickers, & Williams, 2012; Williams & Ford, 2013) and shared cognitions (Reimer, Park, & Hinsz, 2006). We briefly outline them now.

Perceptual and cognitive expertise. Perceptual-cognitive skills refer to the way "performers allocate limited attention resources within the visual field and the manner in which the different components of the visual system (i.e., the fovea, parafovea and periphery) are employed to capture relevant information to guide action" (Causer et al., 2012, p. 306). Helsen and Starkes (1999) emphasized that in dynamic sports settings (e.g., team sports), where the environment is constantly changing, decisions and responses must be made quickly and accurately. Research has shown that compared to non-expert soccer players, expert players are better able to meet the constantly changing demands of the game due to enhanced anticipation and decision-making skills (Williams & Ford, 2013).

According to Causer et al. (2012), perceptual-cognitive skills are amongst the foundations of expert anticipation and decision-making. In a meta-analysis on the perceptual and cognitive expertise in sport, Mann et al. (2007) found that anticipation and decision-

making are important skills discriminating between expert and non-expert athletes. Specifically, Mann and colleagues found expert athletes anticipated their opponents' intentions significantly quicker and made more accurate decisions when compared to non-expert counterparts. Roca et al. (2011) investigated perceptual and cognitive differences between skilled and less skilled soccer defenders. They found that skilled players were more accurate in anticipation and decision-making judgements in comparison to their less skilled counterparts. Differences were also found in the processing of information picked up by the visual system, with skilled participants displaying more verbal reports of cognitive processes (e.g., higher proportion of evaluation, prediction and planning) than less skilled ones. Therefore, Roca et al. (2011) concluded that skilled players' more advanced memory representations enabled them to easily retrieve task-specific information and make better judgements than less skilled players.

Causer et al. (2012) summarized the perceptual-cognitive skills that underpin anticipation and decision-making in sports. They cited the following abilities: (a) to efficiently and effectively move the eyes around the display to extract relevant information, (b) to pick up advance information from opponents' postural orientation, (c) to identify familiar patterns or sequences of play, and (d) to engage in forward thinking and predict likely choice options open to an opponent.

Shared cognitions. In addition to performing in dynamic environments (i.e., fast-paced and constantly changing), team sports athletes must perform tasks that are highly interdependent (Reimer, Park, & Hinsz, 2006). As a result, each athlete's actions must be coordinated with the teammates' actions and take into consideration the opponents' moves. Despite being one of the most effective ways of coordinating efforts, communication is severely constrained in dynamic sports settings and teammates do not have time to discuss

strategies or plan changes. In addition, by overtly communicating intentions and plans, teammates may end up providing opponents with crucial information to anticipate and prevent such plans from taking place. Therefore, in order for a team to build coordinated plays and conceal intentions from the opposing team, its members must have shared and coordinated cognitions or mental models. Mental models refer to knowledge structures or cognitive representations (e.g., beliefs, thoughts, and opinions) used to describe, explain, and predict events, and to guide social interactions (Reimer et al., 2006).

When cognitions or mental models are shared in a team, knowledge and thoughts about the sport, the teammates, the important cues, the goals, and the roles are shared among its members and coordination is improved (Reimer et al., 2006). For instance, if cognitions are shared in a team, when the defender intercepts an opponent pass, a midfielder immediately finds an open space to receive the pass from the defender and makes the ball quickly reach the forward players who will have run toward an open space in the opponent defence structure. Therefore, they will have quickly developed a counterattacking situation, because they will have noticed the opponent team's defence was not organized yet. On the contrary, if the teammates do not share an understanding of the most relevant cues to attend in that situation, the play may not be efficiently built and the midfielder may pass the ball back or sideways to another midfielder because he/she may believe it is important to build the counterattack play through the wing, for instance.

According to Reimer et al. (2006), it is crucial that teammates coordinate their attentional processes. This means attending to priority cues according to different roles and knowing the teammates' priorities so attentional resources can be allocated effectively. In addition to sharing attentional mental models (i.e., beliefs and thoughts about relevant cues), players must also share cognitions in the phase of anticipating events. Even if players share

cognitions related to the most relevant cues to attend, if they do not share an understanding of how these cues will influence the opponents' subsequent behaviour, coordination may not be achieved and performance may be harmed. For instance, if two defenders notice an open space in their defending scheme but one of them thinks the opponent will run in the open space with the ball, but the other believes the opponent will wait for another opposing player to occupy that space, the defenders' actions may not be coordinated.

Rationale for the current study. Recently, Thelwell, Greenlees, and Weston (2010) conducted a research study on the use of psychological skills throughout a soccer performance, which is particularly relevant to the present study. They found that the use of mental skills allowed athletes to become aware of the game's ongoing requirements, which enabled them to focus on their specific role on the team and on performance subcomponents such as passing, first touch, and tackling. However, their study did not explore the athletes' attentional focus in an in-depth way, nor did they explore in detail the differences in the athletes' attentional focus between their best and less than best performances and across different tasks.

Several arguments also provided justification for this study. First, Boutcher (2008) argued for the need of applied research to advance the understanding of how athletes' attentional capabilities can be improved. Studies that have investigated athletes' attentional focus have generally adopted experimental designs which differ from the natural conditions encountered by athletes (Bernier, Codron, Thienot, & Fournier, 2011). Also, closed skills (i.e., self-paced skills) such as the penalty kick have been the main focus of these studies (e.g., Savelsbergh, Williams, Van der Kamp, & Ward, 2002; Wood & Wilson, 2011) with open skills obtaining little attention from researchers (see Roca et al., 2011, for an exception). As a result, Bernier, Thienot, and Codron (2009) argued for the need of

expanding the knowledge on the attentional processes of closed skills to the open ones. Finally, according to Bernier et al. (2011), few studies have investigated expert athletes' attentional focus. Bernier and colleagues advocated for the importance of understanding the attentional focus naturally experienced by expert athletes, that is, from a naturalistic perspective.

The current study addressed the aforementioned needs by exploring expert soccer players' attentional focus with respect to performing closed skills (e.g., penalty kick and free kick) and open skills (e.g., passing and dribbling). In addition, instead of using an experimental approach in a laboratory setting, this study followed a qualitative and applied approach by investigating athletes' attentional characteristics from a naturalistic perspective.

Chapter III: Methodology

According to Crotty (1998), the selection of a methodological approach depends on the research question and also justifies the choice of methods to achieve the desired outcomes. This study used a qualitative exploratory and descriptive approach. A description of the epistemological stance and the methodology is presented below.

Epistemology

The epistemological position adopted in this research is a constructionist one, which claims that meaning is constructed through the interaction of the individual with his/her realities, in opposition to an objectivist epistemological view, whose fundamental assumption is that the existence of meaning and truth is independent of consciousness (Crotty, 1998). In a constructionist approach, the idea of the existence of a single truth is replaced by that of an interactive construction of meaning, which may vary between individuals in relation to a similar event (Crotty, 1998). Moreover, if we believe that

meaning is constructed throughout individuals' interactions and subsequent interpretations with the world, a singular truth is not expected to be discovered or revealed.

Accordingly, the findings generated by this research are not considered as objective truths nor the only valid descriptions of reality. On the contrary, our goal was to provide a useful interpretation of a specific phenomenon (i.e., elite soccer players' attentional focus). Therefore, the epistemological stance that informed this study allowed the achievement of this goal.

Qualitative Exploratory and Descriptive Study

A qualitative approach which is interpretive and aims to provide an in-depth understanding of phenomena (Denzin & Lincoln, 2005) was used in this study. More specifically, given the objectives of investigating and describing a phenomenon that was relatively unexplored (i.e., elite soccer players' focusing skills) this study was classified as exploratory and descriptive in nature (Gratton & Jones, 2010).

In order to achieve the goals of this study, an examination of specific aspects related to the attentional focus of high performance soccer players was conducted. This was accomplished through an investigation of elite soccer players' attentional focus in best and less-than-best performances, and according to different performance components (e.g., passing) and situations (e.g., before the game). Eight elite soccer players were recruited for this study for in-depth interviews. This provided an opportunity to gain a sound understanding of the phenomenon. In addition to coding each interview and generating themes, cross-case examination was used to explore similarities and differences across participants, which enhanced the potential for theoretical evaluation of the phenomena (Chmiliar, 2009).

This methodological approach was well-suited with the constructionist epistemological standpoint. The transfer of knowledge that takes place in qualitative research is mediated by a process by which the researcher condenses subjective experiences such as interpretations, opinions, and feelings into a textual account that is subject to the same process by readers of research (Stake, 2005). According to Stake (2005), a significant part of the learning process happens through vicarious experience. Through the integration of their experiences with the data, the researchers assist the knowledge construction process of readers. As a result, regarding the constructionist epistemological perspective chosen for this study, the qualitative exploratory and descriptive methodology fitted well with the purpose of the study.

In conclusion, this methodology corresponded to the objectives of this research study. In addition, it helped fill a gap in the literature since Bernier et al. (2011) argued that studies that had investigated athletes' attentional focus generally adopted experimental designs as opposed to a qualitative and naturalistic investigation. This approach also informed the choice of methods for data collection and analysis which we now describe.

Method

An overview of the methods of data collection and data analysis chosen for this study is provided below, along with a justification for their selection. Prior to the description of the data collection and data analysis strategies, an explanation of the sampling process is provided.

Participants

According to Stake (2005), the choice of participants is made following the criteria of accessibility, rather than representativeness, since little information can be obtained from unavailable or unreceptive cases. Sampling is a crucial step in the research process since it

determines the relevance and quality of the data and subsequently how well the problem can be understood. It was assumed that elite players had successfully developed mental skills and focusing strategies in order to reach such level and cope with the increased demands of high level soccer. This study investigated eight elite soccer players including at least one player from each of the five main soccer player positions, namely goalkeeper, defender, wing, midfielder, and forward. An examination of each position helped shed light into position-specific attentional demands, in addition to overall best and less than best focusing characteristics of the game.

The criteria used to determine whether a player would be considered for inclusion in the study were the following: (a) the players' age, that is, those who were over 18 years old; (b) the players' club standing, that is, preferably clubs that were in the main division of the national league; (c) the players' expertise, that is, at least 10 or more years of training experience (Ericsson, Krampe, & Tesch-Römer, 1993); and (d) the players' previous participation in the national soccer team (Hanton, Wadey, & Mellalieu, 2008) either professional or youth team (not an excluding criterion). In addition, preference was given to players who were currently performing, since the recalling process about focusing skills could be hampered for players who had been retired for a long time. Information regarding the players' previous participation on national teams was obtained through the athletes or found in FIFA's (Féderation Internationale de Football Association) website (Player Statistics, 2011). Table 1 summarizes the players' profiles according to the specified criteria.

Table 1

Participants' Age, National Team Appearances, Club Division, and Experience

Position	Age[a]	National team caps[b]	Club division	Experience in years
Goalkeeper (G)	19	No	Brazil 1st	11
Defender (D)	27	No	Brazil 1st	15
Wing (W)	20	Yes	Brazil 1st	10
Midfielder (M1)	22	No	Brazil 1st	*
Midfielder (M2)	23	Yes	Brazil 1st	*
Midfielder (M3)	23	No	Brazil 1st	10+
Midfielder (M4)	33	Yes	Brazil 1st	16+
Forward (F)	20	Yes	Brazil 1st	*

Note. $N = 8$.
[a]$M_{age} = 23.4$ years. [b]Metaphorical term for a player's previous appearance on a representative team, such as the national team.
* Information not found and/or not asked.

In qualitative research, some informants are likely to provide more understanding than others (Marshall, 1996). According to Creswell (2007), the qualitative researcher selects cases that offer greater possibility of understanding the central phenomenon being studied, which is called purposeful sampling. Given the potential difficulties related to accessing elite soccer players, the sampling techniques that were used to gain access to participants were purposeful sampling and convenience sampling, which is the selection of the most accessible subjects (Marshall, 1996), and snowball sampling, also known as chain referral sampling (Mack, Woodsong, McQueen, Guest, & Namey, 2005). Therefore, purposeful and convenience strategies were used to access the first participants. Access was gained mainly through the help of people who knew both the researcher and the player, or someone who

had access to the player such as a sport psychologist or a club administrator. After the first players or those who had access to the players were successfully contacted, they were asked to recommend other high performance participants, which characterized the snowball sampling (Marshall, 1996).

Data Collection

With the goal of gaining a deep understanding of elite soccer players' focus, the data collection method used in this study was the semi-structured interview (Rubin & Rubin, 2005). According to Fontana and Frey (2005), the interview is considered the main method of data gathering by both quantitative and qualitative researchers. In 2003, Culver, Gilbert, and Trudel carried a review of qualitative research studies published in three important sport psychology journals from 1990 to 1999. Regarding the method of data collection, a trend was observed amongst the qualitative research studies. The interview was the most prevalent method and the majority of the studies involved fewer than six participants. In line with Culver et al.'s (2003) findings, Brustad (2008) indicated that the individual interview is a current influential tradition in sport psychology research. In addition, Boutcher (2008) stated that the semi-structured interview is the method that represents most of qualitative research in sport psychology. He argued that interview methods can provide deeper understanding of psychological and emotional phenomena than surveys and questionnaires.

It is important to acknowledge, however, that the data collected through an interview is not necessarily a product of accurate accounts (Fontana & Frey, 2005). Fontana and Frey (2005) described interviews as "interactional encounters" (p. 699). As a result, the dynamic processes that take place in such contexts shape the kind of knowledge that is generated. Therefore, the choice of the interview as a research method was in agreement with the constructionist epistemological standpoint of this research study.

In this study, semi-structured interviews with open-ended questions were used to explore athletes' soccer-related attentional skills and to describe their attentional focus in best and less-than-best performances. In a semi-structured interview, a set of pre-established questions related to the topic is generated. Nevertheless, it is a flexible method with regard to the order of questions, the elaboration of probing questions, and the follow-up of unanticipated themes raised by the participants (Smith, 1995, as cited in Madill, 2011). The interview guide (see Appendix A) for this study was developed based on the literature review and on other high level performance studies that used similar methods (Barbour, 1994; Benz, 2009; Imai, 1995; Orlick & Partington, 1988). The interview guide included mainly questions about the athletes' thoughts and visual focus during their best performances and in comparison to less-than-best performances in varied situations (e.g., about to begin the game and facing fatigue and pain) and performance components (e.g., passing and taking a shot).

Two main reasons led us to privilege the investigation of the athletes' visual attentional focus and not the auditory or kinesthetic attentional foci. First, most information that must be processed by athletes is gathered from the visual field (Abernethy, 1991, as cited in Janelle, 2002). Second, vision is the dominant sensory system underpinning the planning of actions (Williams, Davids, & Williams, 1999). Therefore, we investigated mainly the athletes' visual attentional focus and did not regard auditory or kinesthetic attentional foci as main targets of this study.

Procedures

Following the previously described sampling process, for convenience reasons, all participants were recruited in Brazil, where the researcher had the most access to players or to people close to them. Once the potential participants were contacted, they were informed about the purpose of the study, and requested to participate in the study through face-to-face

interviews arranged at a convenient place and time for them (see Appendix B). Prior to the beginning of the interview, written informed consent was obtained from all participants in line with the University of Ottawa's Ethics Research Board guidelines (see Appendix C). All interviews took place in the athletes' training facilities either before or after training and were audio-recorded with the participants' permission. The interviews were conducted by the main researcher. The interviews lasted 30 minutes in average and yielded 200 double-spaced typed pages. The recorded interviews were transcribed verbatim and returned to the participants via e-mail to ensure accuracy and to allow the participant to provide their comments or to make modifications or clarifications on the interview transcripts if deemed necessary. Three participants replied the e-mail providing their approval on the interview transcripts without any modifications. Since the interviews were conducted in Portuguese, native language of the participants and the researcher, the transcripts were then translated into English. All steps (i.e., interviewing, transcribing, and translating) were taken by the same researcher which provided greater familiarity with the data. Furthermore, the fact that all the steps were taken by the same researcher also ensured consistency in this initial stage of the analytical process.

Data Analysis

According to Davis and Meyer (2009), the development of computer software to assist the researcher in the analytical phase of a research study was an attempt to facilitate the management of large amounts of data that is usually collected through qualitative research methods. Therefore, we used QSR International's NVivo 10 software (QSR International, 2012). The objective of using such a tool was not to substitute the researcher's role in analysing the data. Instead, it was intended to assist the organization and the management of the data.

The data was analyzed according to thematic analysis guidelines provided by Braun and Clarke (2006). According to Braun and Clarke (2006), thematic analysis is a method that helps the researcher identify, analyse and report patterns within data, which are also called themes. The identification of a theme is guided not by quantification of its appearance, but rather on the identification of its relevance to the topic being studied. As a result, in addition to identifying common themes, this analytical tool also assisted in the understanding of the participants' attentional particularities.

The approach adopted in this study included a theoretical or deductive and an inductive thematic analysis (Braun & Clarke, 2006). Due to the interest in identifying the attentional characteristics of the elite soccer players, the emphasis in the analytical process was in identifying themes that related to the topic under investigation such as focusing strategies, attentional characteristics, and position-specific and task-specific demands. In addition, the analysis was undertaken within the semantic level (Braun & Clarke, 2006). That is, the data was categorized into themes and interpreted in an attempt to theorize their significance and implications, as opposed to analysing at the latent level. In this latter approach, the data is analysed with the aim of identifying underlying ideas and assumptions that inform the semantic content (Braun & Clarke, 2006). Notes were taken throughout the process of data collection and analysis in order to record the researcher's initial impressions and not lose eventual insights.

In line with Braun and Clarke's (2006) work, data analysis was carried as a six-step approach. First, to become familiar with the data, the researcher read and re-read each transcript before coding and generated an initial list of notes, ideas and issues worthy of further exploration (e.g., three midfielders noted the detrimental role played by mistakes on subsequent performance, which should be further explored). Second, features that

represented the most basic elements of raw data were identified and initial codes were generated (e.g., "mistakes in the beginning hurt confidence") to organize data in meaningful groups. As previously explained, data was coded deductively (e.g., game situations such as "poor officiating") and inductively (e.g., "preparation and training facilitates focus, confidence and teamwork"). Third, codes were categorized into themes (e.g., focus during performance tasks) and subthemes (e.g., controlling the ball). Fourth, the themes were refined with some themes and codes being removed or renamed, while others were merged to form one overarching theme (e.g., "nutrition", "hydration" and "recovery" merged into a theme named "physical condition"). Fifth, the themes were named according to their definitions and meanings (e.g., "determinants of distraction or lack of focus"). Finally, sixth, the final analysis was written with data extracts that captured the most salient features of the data in relation to elite soccer players' attentional focus.

Trustworthiness

It is well known that in qualitative research, "the researcher is the instrument" (Patton, 2002, p. 14). Therefore, several strategies were used to ensure the quality of this study. First, the researcher has undergone a bracketing interview in order to bring into awareness potential biases and assumptions (Rolls & Relf, 2006). According to Rolls and Relf (2006), bracketing interviews aim to explore the influence of assumptions and experiences of the researcher in the knowledge construction process. Even though this strategy is commonly used for sensitive research topics (e.g., terminal patients' emotions) it also provided insights on preconceptions the researcher had, such as the researcher's assumption that elite athletes would have developed several focusing strategies and would be able to comment on those strategies in detail. Second, as previously mentioned, all steps in the data collection were taken by the researcher which provided consistency and helped

increase familiarity with the data. Third, the transcripts were sent back to participants so they could verify the accuracy of the content and express their comments on the material (i.e., member review). Finally, expert checking allowed verification of the analytical process. This was achieved through discussions about the analytical process and the themes generated with the supervisor of the study.

Chapter IV: Results

The results of this study were divided in two main sections: (a) focus and (b) distractions. In the first section, the meaning and importance of focus for the elite soccer athletes are described along with important characteristics of an optimal focus. Next, the athletes' attentional focus based on soccer positions and tasks is presented. Perceived sources of optimal focus along with strategies used by the athletes to enter optimal attentional states are also presented in this first section. In the second section, perceived causes of distractions or loss of focus along with game situations identified as potentially distracting are described. Strategies used by the players to prevent or overcome such distractions are also presented in the second section.

It is important to note that the players' comments are related to their own experiences and not all players spoke about the same soccer tasks (e.g., the defender was not asked about shooting at the goal, and the forward was not asked about blocking shots to the goal). Therefore, not all players shared their views with respect to all tasks. The results reflect what each of these players reported they personally did, focused on, or experienced when they played their role or position on the team.

All participants were Brazilian elite soccer players. In order to protect the players' identity and facilitate the understanding of specificities according to each player's position, their quotes were followed by their soccer position. For example, quotes from the goalkeeper

were followed by "(G)" instead of "(Brazilian elite soccer goalkeeper)" and quotes from the four midfielders were followed by "(M1)", "(M2)", "(M3)", and "(M4)" respectively.

Focus

Meaning and importance of focus. This section begins by providing the athletes' views related to focus, including its meaning and its relevance for their performance. For some athletes, being focused meant being in the moment, that is, concentrating in the here and now. One athlete commented:

> I believe [to be focused] it's when you're focused on making a good pass, on making a right move in the field, without thinking about what you'll do later on, but thinking only about what you're doing now…. I think you have to live the moment…. You have to live what's happening now with as much intensity as you can, instead of thinking ahead. (F)

In the words of the wing player, "To be focused is disconnecting from everything that doesn't involve what you are doing at the moment" (W). Being focused on the moment also involved losing track of time. As the defender noted, "In some games you don't even notice the time passing" (D).

The players recognized the importance of focusing skills for best performances. One participant commented, "To be focused is to be concentrated on what you will do…. And that's important for your performance on the field" (W). The forward placed a great emphasis on the relevance of focusing skills for the performance in the game. In his view, "Concentration in soccer is essential" (F). According to the goalkeeper, having an optimal focus allows the player to keep concentrated in the face of potential distractions. For him, "the main thing for the athlete is to have focus…. Because if you're focused on the game, the crowd may be calling you names or may be complimenting you, and you'll still be focused

[on the game] the same way" (G). For the defender, being focused meant "being ready so nothing disturbs me" (D). And a midfielder agreed that when he is focused, "nothing interferes, no thoughts that come from outside will interfere in any way" (M1).

Automaticity and autopilot. For all participants in this study, performing well-learned skills on *autopilot*, that is, automatically processing and responding to information was reported as essential for high level performances. For example, a midfielder said, "There are games where I play especially well. Games where I can't think. I just go and do my job" (M3). When speaking about his attentional focus during the execution of a high quality corner kick, a well-learned and practiced skill, another midfielder commented, "You kind of already know the shot, the power that you will apply on the ball…. You just make the movement" (M1). This suggests that autopilot takes over and controls the passing or striking of the ball and the player does not need to think about it because it consists in a well-learned skill execution.

Another example illustrating the execution of well-learned skills without conscious attentional control was provided by a midfielder, when he described his attentional focus before controlling the ball that came from a teammate. He explained, "Since you already know it's coming in a certain way, you may already look at something else. You can control it without looking at it" (M2).

With the automatization of a task, attentional resources become available for the athlete to extract relevant information from other sources in the visual field, such as an opponent player coming from behind to try to take possession of the ball. But, as a player emphasized, performing a skill without the need of conscious attentional resources is only possible after prolonged training. In his words, "I had to train it for some time. And with

practice, it gets automatic. By training every day, sometimes you perform a dribble, you do something that seems so normal, but which is complicated for another person" (M2).

Despite the automated motor component of the skill being executed under automatic processing, there was a controlled component, specifically the decision making, where conscious attentional focus was required. Before passing the ball to a teammate, the defender mentioned thinking about his movement options and consciously deciding on one of them, but he also reported not thinking about the actual skill execution. He commented:

> At the time of executing the pass, I usually don't think. The only thing that I think of is where I'll make that pass, where it'll be better for the player to receive it. But in regards to other things like how to do it, I think that goes on autopilot. (D)

Peripheral vision. Relying on peripheral vision was an important characteristic of the athletes' focus. Players reported counting on peripheral vision as a way to avoid providing anticipatory cues to opponents. For instance, to avoid indicating to the goalkeeper that a shot to the goal was about to be taken, a midfielder reported identifying the goalkeeper position through peripheral vision. He said, "Sometimes, with the corner of the eyes you look at the keeper. You're looking at the ball, but you know where the keeper is" (M2). Other times, to prevent the goalkeeper's anticipation in regards to the direction of the shot, the player will look at the ball when taking a penalty shot. The forward also reported relying on a peripheral view when taking a penalty shot. He noted, "I look at the ball and I take a powerful shot, regardless. I don't look at the keeper as much" (F). The goalkeeper acknowledged that penalty kick takers rely on peripheral view, which made him delay initiation of a movement response as much as possible to also avoid providing the kick taker with anticipatory cues. He said, "Because all the time he's looking at the ball. But in that

space [through peripheral vision], he can see the keeper and his moves. So, I try to wait until the last second to go towards the ball" (G).

Focus according to position-specific roles and performance tasks. In this study, attentional focus and requirements varied according to soccer positions and tasks. The most salient focus characteristics for different playing positions are presented in the section below.

Goalkeeper. Playing in a defending position, the goalkeeper focused his attention mostly on the ball. This was true in open play situations, "In your defending field you cannot take your eyes off of the ball" (G); and in self-paced skills such as the corner kick, "You're always looking at the ball, all the time, like I told you. So, according to the shot, you'll see if you can go for the ball or not" (G). In addition, the goalkeeper reported focusing on the opponent forwards' positioning and movements early in the game and even before the game, during tactical video training sessions. The goalkeeper also focused on managing the teammates' emotional states by helping them calm down when needed, "The goalkeeper tries to keep the team calm. Sometimes the team is nervous out there, and then the keeper says, 'take it easy, it's going to be all right'" (G). Finally, the goalkeeper emphasized the difference between attentional requirements in self-paced skills versus environmentally-paced skills. In self-paced-skills, since the ball is stopped, the goalkeeper has reduced time and spatial constraints, a situation which allows him to extract more relevant information to choose an appropriate motor response than when the ball is moving. He explained:

> When the game has stopped, you have a good vision of the ball…. you'll have the view of where it will go. If the ball is moving, it can complicate things. Many people get in the way between you and the ball. So, it's more complicated when the ball is moving. (G)

Defending a shot to the goal. The goalkeeper was the only player in our study who was asked about his attentional focus while defending a shot to the goal since it is a task exclusively performed by the goalkeeper. He emphasized the importance of having an optimal attentional state whenever defending a shot to the goal. He said, "We, the goalkeepers, have to be really alert…. Otherwise the guy [opponent] will surprise you" (G). He also reported defending a shot on the goal as being a situation requiring complex attentional focus switching. He must focus his attention on the ball but also on the opponent team attacking configuration and subsequently on managing his defending teammates' attentional foci by providing the team with orientation in regards to their positioning. He said, "In addition to be giving orientation to everyone about their positioning, you cannot take your eyes off of the ball" (G).

When an opponent player came with the ball in the direction of the goalkeeper's goal, he focused his attention mainly on the way the ball was controlled by the opponent. The opponent could be controlling the ball with short kicks, keeping the ball close to their body, or instead with long kicks, which allowed them reach the goal in less time. As a result, the goalkeeper's attentional focus on the opponents' ball control allowed him to anticipate the opponents' moves and to quickly react to an attacking situation that was potentially threatening to his goal. This situation was illustrated the following way:

> We, goalkeepers, look a lot at the way the forward is controlling the ball. If he taps the ball a little longer and you think "I can reach the ball", you get close to him and take his space away. Now, if he taps it short, offering danger to your goal, then you can't go towards him. So, you have to position yourself and wait for the kick. (G)

Asked about his attentional focus after the shot had been taken and the ball had left the opponent kicker's foot, the goalkeeper reported his attentional focus depended on the

kind of shot. If it was a long distance kick, he waited longer to initiate a motor response, in order to prevent being deceived by the ball curve. If it was a close range shot, he counted on previous tactical training to help decide the appropriate defending behaviour. In his words:

> If it's a long distance kick, you can wait a little longer, because there's time… these balls today have a lot of curve…. You have to wait a little so you're not caught by surprise. Now, in the short distance kick, or close range as they call it in soccer, the training counts more. That is something you have to decide in the last minute. That's more psychological, by studying the guy, right? Like I told you, we analyse, "hey the guy did this; he tries more that way." So, we really decide at the time it happens. (G)

When defending a penalty shot, the goalkeeper reported focusing mostly on the kick taker's positioning before the run up to the ball. This attentional focus allowed him to predict the likelihood of the player kicking in a specific corner and subsequently allowed him to respond accordingly. He commented:

> We train and we look at the position of the kick taker…. Cause sometimes he stays kind of to the side or more to the front. So, from these positions we can tell, we can have an idea of where he might kick. (G)

Another focus of the goalkeeper's attention was the kick taker's foot position. He explained that this was an important source of information since the position of the foot right before contact with the ball changed depending on the corner to which the player would kick. However, he noted that was really fast and almost unnoticeable if the keeper lacked full concentration:

> I try to look at his foot…. Because you can see. I mean, if you look… it's really, really fast…. but like, you're so focused looking there that you can tell by his moves,

> if he'll turn the foot and take a shot to the far post or if he'll kick normally [to the near post]. But if you're not concentrated, you won't notice that. (G)

Defender. The defender in our study emphasized his role did not allow for making mistakes. As he expressed, "Being a defender is different, right? Because a defender… uh, in my position you cannot miss a single ball" (D). The defender's focus was also characterized by a lack of improvisation and a highly reflected decision-making process. In his words:

> There's a good thing called improvisation, not worrying about anything…. I'm not like that…. I think this is why I'm a defender, because there's not that much [improvisation]…. The forward needs something different, like a sudden improvisation, something which is not my characteristic…. Because I try to foresee things, because I try to think "hey, if I miss here, what will the consequence be?" (D)

Blocking a shot to the goal. Blocking shots to the goal is mainly a defender's task, therefore only the defender was asked about his attentional focus when blocking shots to the goal. The defender reported having several options in his decision-making process whenever the opponent is about to shoot at the goal. This decision process included choosing to make a foul, placing his body in front of the ball trajectory, or running to the goal line. In his words, "There's thought in many things, 'hey, now I gotta make the foul; now I don't; now I'll anticipate; now I'll run to the goal line, I'll throw myself in front of the ball'" (D). This defender focused on anticipating cues which allowed him to make situation-appropriate decisions. Asked about his visual focus at the times he was blocking a shot to the goal, the defender answered:

> I read the situation, right? A quick reading of everything…. All that happens very fast. I do a quick reading like this, "man, the guy will kick there, if I put my leg here

> the ball will go to the goal", do you understand? I have to anticipate a little, I have to try to get close to his shot. (D)

Wing. Within a game, the wing has offensive and defensive roles depending on the play. Therefore, the wing attended to his position on the field and assessed the risks involved in attempting to dribble past an opponent versus passing to a teammate in order to decide on the most appropriate course of action. If too close to his team's goal, he would not attempt to dribble past the opponent:

> I try to see the player's position in the field, and the place in the field where I am. If I'm in a part of the field where there's risk to my goal, to my team, I won't dribble. I won't be able to do that, so I'll simplify the play. I'll kick it high in the air, or I'll pass it to the sides. (W)

If he decided to dribble past the opponent, he would look at the opponent's position and body configuration in order to play in the opposite direction the opponent was facing. For instance, "I try to see his position. If he's marking with the right side of his body, I'll try to throw the ball to the left side to make it harder for him" (W). However, if he concluded the appropriate decision was to make a pass, the wing would decide whether a pass should be made to the foot of the teammate or more to the front (i.e., through ball). The wing explained, "If he's fast and I'll make a pass, I can make a through pass more to the front, so he can receive the ball, because he's got speed. If he's slower, you have to pass it to his foot" (W).

Finally, another important focus of attention for the wing was the opponent team's wing, because this would be the opponent player the wing would face most of the time during the game. As a result, identifying the opponent wing's strengths and weaknesses was an important focus for this player. He said, "I'm a right wing. So, looking at how the

opponent team's left wing plays, and trying to identify his strengths and weaknesses. So that when I go in, I may explore that…. Neutralize what he's doing well" (W).

Midfielder. The midfielders felt that efficiently switching attentional focus between the ball, the teammates, the opponents, and the open space was important in order to know the available space for the next play. This would allow them to decide whether they should quickly pass the ball (i.e., first touch pass), control it and scan the field for an open teammate, or control it and dribble past the opponent if they were time and spatially constrained for the other options. This was achieved mainly through quickly looking to the sides, "You have to look at the space you have, [looking quickly to both sides], to see if you can control the ball or if you have to make a first touch pass. Always connected to what's around you" (M1).

The time allocated to the decision-making process depended on the situation of the player who controlled the ball. If the player was open and free, more time was allowed to scan the field in the search for the best positioned teammate. However, if an opponent was marking close, the available time to make that decision was constrained. A midfielder explained:

> I control it and if I see I'm open, then I look more to the field, if there's time to think, right? If I control the ball and I see the opponent is not close, I take a look around the field [before making the pass]. (M4)

Passing. According to a midfielder, "The fundamental skill in soccer is passing" (M1). As a result, of utmost importance is passing the ball so that it reaches teammates well, that is, with quality and in a way the teammate has enough time to take the next step before the opponent reduces the available space. Even though this section is about passing from the perspective of the midfielders, seven out of eight players highlighted the importance of

quality passing. A midfielder said, "I try to focus really well on the teammate, see where he is, make a firm pass, so the ball can reach his feet with quality" (M1). The players believed that forward thinking was key in passing. Some players noted the importance of anticipating the situation teammates would face upon ball reception to choose which teammate to pass to. One athlete mentioned, "I look for the best option, the teammate who is unmarked so he has time to control the ball and go on playing" (M2).

In passing, the player must attend to different visual stimuli to make an appropriate decision. It requires switching attentional focus between important areas of the visual field in order to extract relevant information. A midfielder described some relevant stimuli that needed to be attended to before passing:

> In addition, you also have to look at the opponent defender's positioning to see where you'll place the ball, where you'll pass it…. It's a lot of things in harmony. It's the kick power, the teammate's positioning, the open space, the [opponent] defender, and his positioning. (M3)

Forward. The forward in our study attributed great importance to scoring goals. In his words, "The goal is essential for me…. I think only about scoring goals and helping out" (F). Scoring opportunities derive mainly from taking shots to the goal, receiving air balls in a free kick or corner kick, or taking a penalty shot.

When shooting at the goal, the forward focused on the opponent defenders but especially on the opponent goalkeeper. This helped him assess his chances of beating the goalkeeper in the play. He said, "[If] I controlled the ball, consequently I already have to take a look at the keeper to get an idea. Because if I look at the keeper, I'll have great chances of taking him out of the play" (F).

Since the forward in our study did not usually take corner kicks or free kicks, during these situations, he stayed in the penalty box waiting for the ball to be kicked by a teammate. Therefore, in the corner kick and the free kick, he was asked about his attentional focus in relation to the air ball that resulted from the kick. In order to receive the ball, the forward reported focusing mainly on the open space. He said, "I try to look more to the open space, where he'll be able to pass the ball…. I try to move around inside the open space" (F). The forward also mentioned focusing on the ball if it came in his direction or on potential mistakes by the opponent defender. In his words, "I think that I have to focus on the ball or on potential mistakes by the defender. I look especially at the ball. If it doesn't come to me, I keep waiting for any mistake by the defender" (F).

Perceived Sources and Strategies to Enter Optimal Attentional States. As previously discussed, focus can be seen as a goal to be achieved. From this standpoint, we called such a desired state an optimal focus, which helped prepare the athlete for optimal performance. Optimal attentional state relates to the concept of alertness or readiness (Carr & Hinckley, 2012) and facilitates performance by preparing the individual to efficiently perceive and process task-relevant information, which ultimately allows proper decision-making and subsequent action (Causer et al., 2012).

Some players explained the occurrence of optimal attentional states as something that happened "naturally" or without conscious effort or specific strategy. The defender said, "I'm already focused by nature. I've always been like really focused. I take things seriously. I know the size of the challenges I'm facing" (D). As indicated by this comment, being focused seemed to come naturally for some people with ongoing practice and was also facilitated by having a high level of commitment.

Despite some athletes reporting they were naturally focused, several factors were perceived by them as being important sources for optimal focus and some strategies that helped them enter optimal attentional states were also described. To optimize space and emphasize the most salient perceived sources and strategies to achieve optimal focus, we report the main sources of focus for participants in this study, namely task-relevant thoughts, pre-performance routines, positive thinking and confidence, training, and optimal physical state.

Task-relevant thoughts. Having task-relevant thoughts was perceived by all athletes as a source of optimal focus. Thinking about and preparing for game-related issues helped the players develop an optimal attentional state which contributed to them having outstanding performances. When asked about their thoughts before best performances, a midfielder mentioned, "I was thinking only about the game" (M1). A midfielder explained he begins to think about the game, the game plan, and some tactics as game time approaches. He commented:

> From the moment of the coach lecture, then we go to the bus, then to the stadium, then I begin to think more about the game, and what I'll have to do considering what the coach explained to me, some tactics from the other team, the opponent player who will mark me, what I'll have to do to get rid of him, and the positioning. So, then I go and think about what I have to do. (M2)

The relationship between having task-relevant thoughts and having an optimal focus was found to be influenced by game-time proximity, the perceived importance of the game, and the level of anxiety. For some players, having performance-related thoughts closer to the game (e.g., minutes before the game) facilitated an optimal focus, while having those thoughts long before the game (e.g., a day or hours before the game) was actually perceived

as a source of anxiety. One athlete said, "I always try to take my attention away from anything that involves the game.… So, before the game I tried to relax.… And moments before the game, I also try to mentalize [imagine/visualize] what I'll do in the game" (M4).

In addition, having task-related thoughts closer to the game was not warranted if the game was perceived as an important one and the level of anxiety was already high. A midfielder noted that closer to an important game, and if he was experiencing a high level of anxiety, performance-related thoughts were not beneficial for him. He explained, "When the game is important, and you're kind of worried, 'hey, this is an important game and we have to win no matter what', I try not to think about it before the game" (M2).

In opposition to what the other players reported, the defender provided a testimony of his preference to have task-relevant thoughts long before the games, but avoiding them as game time gets closer. He commented:

> I like to think a lot about the game, like, a day before…. And before the game, I don't even like to think a lot…. I'd rather feel that adrenaline so I can get in the game well. I'd rather not even think about it much. I like to think about it a while before, a day before. (D)

This suggests the players' attentional regulation involves different mechanisms to deal with anxiety and to promote an optimal attentional state (i.e., facilitation and inhibition of task-relevant information) with some players preferring to have task-related thoughts closer to the game, while others only long before the game. In addition, for some players, long before the game, task-relevant thoughts are not those related to the game. For these players, task-relevant thoughts were those related to mental preparation (e.g., managing anxiety) and physical needs (e.g., nutrition and resting), instead of game situations. If these players kept having thoughts related to the game long before the actual performance time,

these thoughts were regarded as performance worries, cognitive anxiety, or anticipation thoughts. Therefore, when having performance worries, taking focus away from the game proved beneficial for them. Closer to the game, when attempting to anticipate different game situations in order to prepare for them, visualization and task-related thoughts were warranted and promoted an optimal focus.

Pre-performance routines. Pre-performance routines were defined as individualized and systematic cognitive and behavioural strategies carried out before performance (Hanton, Wadey, & Mellalieu, 2008). Pre-performance routines represented one of the major sources of optimal focus found in this study. Cognitive strategies included visualization and managing attentional focus to and away from performance-related stimuli, as previously explained in the Task-relevant thoughts section. Behavioural strategies included kicking the ball around and juggling, playing and talking with teammates and family, listening to music, reading, and religious behaviours (e.g., praying).

Visualization was an important pre-performance routine specifically mentioned by half of the athletes. As a midfielder said, "I always try to visualize the game. I try to imagine the plays on the side [of the field] I'm playing" (M4). The wing also emphasized how this strategy helped prepare him to deal with the situations when the time came:

> Sometimes the coach already shows us something about the opponent team, then when you are going to the stadium, you keep playing a movie of what could happen, what should not happen. And I go visualizing this so when I get to the field, I'm ready for this situation happening and I'll be ready to deal with them. (W)

In regards to behavioural strategies, some players reported preferring to talk to teammates and family members as a way to help them to be focused. For instance, the defender said, "I talk a lot in the locker room. That helps me externalize and it's already part

of my concentration" (D). While others mentioned preferring to be quiet and avoid talking much. A midfielder said, "I go quiet on the trip to the game. I stay quieter in the locker room" (M2). Listening to music was a frequently reported behavioural routine, either as a way of increasing the level of arousal and readiness, "You'll put a loud song, you'll pump yourself up" (D) or as a way to reduce the arousal levels and manage attentional focus away from performance worries, "I tried to take focus away from that. I listen to music a lot" (M4). Finally, another pre-performance routine reported was religious behaviours. As the goalkeeper mentioned, "What I always did were my prayers before training to keep the mind positive" (G). For the wing, the link between praying and having an optimal focus is even stronger. He said, "There's a prayer before the game…. Asking God for protection, so He can give me strength, right? And that strength will make me concentrate there, to be in a moment of trance" (W).

Positive thinking and confidence. All participants in our study reported that positive thinking was strongly related to an optimal focus and subsequent successful performance. For instance, the defender believed, "Thinking about good things attracts good things, thinking about bad things attracts bad things" (D). For other players, positive thinking seemed to be a necessary condition to be met in order for desired outcomes to be possible, "You have to have positive thinking so things can go well in the field" (W). The goalkeeper also perceived a link between previous positive thinking and subsequent focused performance. In his words, "I can't let the guy score on me. I have to 'be a wall', because then I'll feel good about myself. So, I wanna think that everything is going to be all right. I only think about positive things" (G). A midfielder made a comment about using positive thoughts as a refocusing strategy whenever negative thoughts arose. He said:

> There are a few things like that [distraction] that come [to the mind] even before the game…. "Hey, today it seems that something is not going well." Then I stop, "no, it will, it will and that's not going to happen." I try to override that thought with positive thinking so that it doesn't disturb the rest of the game. (M4)

Closely related to positive thinking, confidence was also perceived as a major source of optimal focus. For a midfielder, "If you're confident and well, you may make a mistake, many things may happen, but you'll always be focused" (M3). The goalkeeper also noted the importance of positive thinking and confidence to successfully defend the ball. In his words, "I get myself into the defending position, without blinking, confident I will defend it, believing in it. I always believe I'll reach the ball…. I never think I will suffer that goal" (G).

Training. Although not discussed by all players (i.e., specifically mentioned and discussed by six players), we found training was one of the most reported perceived sources of optimal focus. The defender said, "I think everything is linked to preparation, to training and of course to repetition…. I think the more you do it, the more at ease you are to focus on what you want to do" (D).

A desirable outcome of practicing is that teammates become more familiarized with each other's playing style (e.g., moving tendencies and preferences). One athlete said, "Knowing your teammates, by just looking at their eyes, you can see where he'll position himself" (M3). Training facilitated an optimal focus by enhancing teammates' coordination and increasing anticipation ability. With training, players became better at anticipating teammates' moves and became more coordinated through the development of shared cognitions (e.g., shared understanding about the best way a pass should be made between two teammates). The wing exemplified how training improved anticipation skills and shared cognitions, and led to an optimal focus:

> You have to be concentrated. You have to know how to read it. Like, even in training, you already have to know the characteristics of the player…. And *you get to know this in training, by getting group harmony* [emphasis added], then in game it will work. (W)

For a midfielder, if the player is well-trained and prepared, optimal focus will unfold as an expected outcome and the athlete does not need to make efforts to concentrate. As a result, isolation to prevent distraction will not be necessary either. As he explained:

> If a player is prepared, he'll be at ease, he'll be concentrated, focused…. He doesn't need to be closed by himself inside the bedroom without talking to anyone, without calling anyone. Because he'll be prepared, so he'll act naturally. He knows from the moment he steps on the field, everything will happen. (M2)

Optimal physical state. An important perceived source of optimal focus was having an optimal physical state. Being in an optimal physical condition helped players to fully concentrate on game-related demands. The defender said, "I think concentration is linked to preparation…. I'll sleep well, I'll feed myself well" (D). For a midfielder, "If he's physically well, he hardly loses concentration during the game" (M3). For him, the most important for the concentration of the soccer player "is to be well. Being physically well and prepared" (M3). Being physically prepared included respecting body limits and having appropriate nutrition, hydration, and recovery routines. Asked about what he did to achieve optimal focus during his best performances, the same midfielder answered, "I rested well, tried to feed myself well" (M3). The wing corroborated this view:

> And focus comes from that. At the time of concentration, we have to try to sleep early, be well fed, uh, not do the wrong things…. So when the time of the game comes, you can perform well and help the team leave the field with a win. (W)

Distractions

For the purpose of this study, distractions were considered situations where the athletes had task-irrelevant thoughts, focused their attention on task-irrelevant stimuli, or lost an optimal attentional state. Several factors were perceived by athletes as causes of distraction. The most salient causes of distractions are described below along with some game situations that represented potential sources of distraction for the players. These factors and situations include: mistakes, unsupportive home crowd, feint or deceptive movements, overconfidence and winning, poor officiating, and coaches' complaints.

Mistakes. We found that mistakes could disturb the player's attentional focus and cause distractions. The defender noted, "I think it [mistake] distracts me more than anything else. When you make a mistake, cause a penalty, or do something wrong, that keeps coming into your head during the whole game" (D). A midfielder provided the following perspective on mistakes:

> I think those games I did not play well was due to making a mistake and then it came into my mind, "hey, it's not working today; it's not working"…. then it began to grow and grow, and I could not perform the same way as I did in that game I told you about, where everything worked well. (M4)

One way mistakes caused a negative distraction was by prompting feelings of low self-efficacy or an absence of belief in one's true capacity. Self-efficacy beliefs can be defined as beliefs about the ability to organize and execute actions to achieve desired results (Maddux & Gosselin, 2003). Following a mistake, some athletes questioned their self-efficacy beliefs. The forward exemplified this feeling, "I'd get the ball and I'd miss it. I'd try to do something, but it wouldn't go well. Then I'd think, 'I wonder if I deserve to be here. I wonder if I'm gifted enough to be here'" (F).

Another way that mistakes caused negative distractions was by eliciting rumination and anticipation thoughts, which resulted in not focusing in the moment. Instead, after a mistake, some players found themselves attending to the past (i.e., the previous mistake) or the future (i.e., anticipating the negative consequences of the recent mistake). The defender provided the following account which helped illustrate this point:

> I think the mistake is what destabilizes me the most because you begin to think about other things at the time and not only about the game. You begin to think about what will happen, what can happen. You close your eyes and keep remembering the play. "Hey, why did I do that?" You get home and you can't sleep. (D)

The relationship between making mistakes and being distracted appeared to be moderated by the players' position. Mistakes had more negative consequences on defending players than on attacking players. A mistake made by a forward will have the immediate consequence of the team losing ball possession. While a mistake made by the goalkeeper or defender has a greater chance of leading to the opponent team scoring. As a result, the distracting potential–and consequence–is greater for mistakes made by defending players. As the defender emphasized, "I think that soccer is evaluated by positions, because each one has its own demands. Hey, if the goalkeeper or the defender makes a mistake, he's dead. It's just like that" (D). Table 2 helps illustrate this point.

Table 2

Word Frequency Count by Position

Position	Mistake[a]	Miss[a]
Defender	24	9
Midfielder	6.75[b]	6.25[b]
Goalkeeper	6	5
Wing	7	3
Forward	5	2

Note. This table shows the number of times the words "mistake" or "miss" (e.g., losing ball possession, missing a pass, or letting the opponent score) was mentioned by player position. The contrast between the defender and the forward shows the relative importance of making mistakes according to soccer positions.
[a]Including stemming words (e.g., mistakes and missing). [b]Average from the four midfielders.

The perceived importance of the play/game was also a moderator of the mistake-distraction relationship. A mistake had higher chances of causing a distraction if the play or game was perceived as important. For example, failing to prevent an opponent goal when the team is winning 3 vs. 0 is not as disturbing as making the same mistake when the game is tied. A midfielder commented on this, "Sometimes it's 2 vs. 0, then you'll take the [penalty] shot at ease. You know if you make a mistake, you're still winning 2 vs. 0 anyway and nothing [bad] will happen" (M2).

Given the negative effects mistakes may have on the players' attentional focus, a strategy reported by the participants in our study to prevent mistakes from causing distractions was attempting to reduce the likelihood of mistakes happening early in the game. The players noted that mistakes that happened early in the game had an increased potential to disrupt their focus and subsequent performance. A midfielder illustrated that point and emphasized the potential escalated consequences of making mistakes from the start:

> If you make a mistake in controlling that [first] ball, it sticks to your mind, "wow, I missed the first one." So, that may disturb the player…. When you miss the first ball you begin to wonder if you'll have a bad game…. Now, if you make another mistake in the second ball, then it gets more into your mind and you begin to lose focus. (M3)

As a result, it was important to perform well during the first few plays (e.g., appropriately passing or controlling the ball) which provided a sense of confidence and control, and strengthened the player's optimal focus. One way this was accomplished was by focusing on beginning with easy plays. As a midfielder explained:

> It is important that in the first or second ball that comes to me, I don't make a mistake…. Today, I already think, "the first ball and the second one I'll try to do something easy, a simple pass", maybe to help me gain confidence during the match…. I try to get as close as possible to my teammate. For it to be an easy pass, it has to be a pass to someone who's near you, right? Because if you're far away, the guy will pass to you, you'll have to control it and you'll be very far away, so you'll have to think about what you'll do. Sometimes the opponent will already be there marking you, you'll have to get rid of him, then you will lose the ball and that will hurt your confidence. So, I try to be the closest possible and to make the shortest pass possible to become confident. (M2)

After performing well in early plays, the players' confidence increased. Subsequently, they attempted performing tasks with greater difficulty. A midfielder illustrated, "I say 'hey, I'm gonna get this one right, then the next one'. And then I try a longer one, then the confidence comes back again" (M4).

As the players noted, mistakes are part of the game and they do happen. Therefore, to cope with a recently experienced mistake and prevent it from causing distraction, the players

reported using cognitive restructuring strategies. For instance, the goalkeeper noted the importance of accepting mistakes as part of the game and recommended forgetting about them. He said, "Sometimes we suffer a goal. We're susceptible to making mistakes and we have to deal with them, and keep on playing the game. So, you need to be calm, right? And forget what has happened" (G). And the wing corroborated, "You forget about it. You have to forget the mistake and go to the next play" (W).

Unsupportive home crowd. Even though the away crowd booed and attempted to discourage and distract the team, some players reported the away crowd did not interfere with their attentional state. For instance, the forward said, "I think that the away crowd does not interfere as much" (F). Other players reported focusing on the away crowd pressure and using that pressure as an incentive to perform even better. For example a midfielder said:

> I like playing with the crowd supporting me, but playing away is easier for me (smiling)…. It gives you more motivation when the crowd is against you, because you see that big crowd all against you, so you really badly want to shut down the crowd, right? Ha ha. (M2)

The goalkeeper agreed, "If I'm playing away, the crowd may be calling me names, trying to put me down, but I do the opposite of that. That motivates me even more to show them they're not right" (G).

However, when that pressure originated from the home crowd, the ability to turn the negative pressure into incentive was reduced. It was harder to keep an optimal focus and the players' performance suffered. Six out of the eight participants recognized the negative influence of an unsupportive home crowd. They felt that an unsupportive home crowd had a worse effect on their focus than an unsupportive away crowd. A midfielder said, "Sometimes you're home and not playing well, the fans are booing. It weighs a lot against you" (M1). The

forward agreed, "If you're home and the crowd is against you, then it can harm you" (F). The negative effects of an unsupportive home crowd led the defender to believe some players prefer to play away in order to avoid the potential negative effects of the home crowd pressure. He said, "Sometimes the player feels it [the pressure] more [at home]. He feels better playing away because it's much worse to have your own fans calling you names, than to have the opponent fans do that, which you already expect" (D).

In an attempt to cope with an unsupportive home crowd, some athletes reported attempting to remove focus away from the crowd to avoid performance decrements. A midfielder commented:

> When we play at home and the crowd is disturbing, we have to keep focused. We can't play for the crowd. I think we have to do what we've been talking in training and not change that, because we know if we change it, things may not happen…. So, sometimes due to an external anxiety [crowd pressure], we end up making mistakes in the game. (M4)

For other players, the optimal focus acted as a protective measure against the potential detrimental effects of an unsupportive home crowd. The goalkeeper explained:

> I'm a really focused guy. So, when you're focused like that, no matter how many people are there, you forget about everything. So, I try to stay focused on the game. I try to be automatically focused. I won't be listening to what the crowd will be saying or focus on what they will be doing. (G)

Feinting and deceptive movement. Players in our study reported "feinting" strategies, also called deceptive movement (Jackson, Warren, & Abernethy, 2006), as an important cause of distractions. Feinting strategies have the aim of either disguising intentions or deceiving opponents and misleading them to focus on task-irrelevant stimuli

and to make incorrect judgements (Jackson et al., 2006). For instance, in attempting to pass through the opponent defender, the forward leans his body to the right pretending he is going in that direction. Once the opponent defender tries to block the forward's right, the forward actually goes to the left, gaining an important spatial advantage. The defender interviewed in this study described the risks of being deceived by an opponent in his position. He said, "The forward chooses a side. If he makes a mistake, that's ok. If I miss the side he chooses, I'm dead" (D).

The goalkeeper revealed how common it is for the opponent players who come with the ball in the direction of his goal to hide their intentions from the goalkeeper. As a result, he noted the importance of refraining from reacting to those *fake intentions*. In his words, "the opponent is trying to hide it [the ball], cutting to the sides, looking to the sides, or whatever. But I can't take my eyes off of it [the ball]" (G).

A midfielder reported using a feinting strategy while waiting for a teammate to take a free kick. While disguising his intentions to go to a specific place, he deceived the opponent who was marking him by attracting the opponent to a different place from the one he intended to go, thus creating a potential time and space advantage for him. As he described it:

> M3- So, if you don't find that space, you try to kind of stay a little further away from the place you usually position yourself, so that the space is created…
>
> I- To be free?
>
> M3- To be able to run in the direction the ball is coming.
>
> I- Ok. Attracting the opponent's marking, right?
>
> M3- Yeah, that's right. (M3)

Despite the potential advantage a feint attempt may offer, it will not prove beneficial if teammates do not share mental models (i.e., shared thoughts, beliefs, and interpretations) regarding that play. As Reimer et al. (2006) noted, "The player passing the ball often has to look away from the receiver to fool the defender" (p. 393). Similarly, the receiver sometimes also pretends to go in one direction to deceive the opponent defender, and then actually goes in another direction to receive the pass with more space. Therefore, if teammates do not share mental models regarding that kind of play, in an attempt to deceive the opponent, the player may end up deceiving a teammate instead and feinting may backfire when teammates are not well-coordinated through shared cognitions. An athlete illustrated:

> Sometimes you're gonna make a pass to a player who is at one place. He pretends going somewhere, then he goes to another place and you end up passing to the place he pretended going, and you end up missing the pass. (W)

Overconfidence and winning. The perception of easy plays/games was also regarded by the participants as an important cause of distraction. The forward believed that players were more susceptible to losing focus and making mistakes when they thought the game or play was too easy. When the situation was perceived as easy, certain players were believed to perform with less care and attentional resources were not fully recruited, which resulted in poorer performances. The forward said:

> I believe that "situations that are too easy" can harm you, once you already think that you'll get it right [do it easily]. That's when things can go wrong, that's when you make a mistake, miss a goal, and make a wrong pass. (F)

A midfielder agreed, "This [distraction] can be caused by overconfidence…. In the field, you go, 'oh, it's easy'. And then, you get distracted" (M1).

The players in our study recognized the importance of keeping an optimal attentional sate for the entire duration of the game even if the team was winning. A midfielder said, "You have to be concentrated for 90 minutes. Then, if you score 2 vs. 0 in 10 minutes, you can't play the other 80 [minutes] relaxed" (M1). Nevertheless, we found the attentional readiness of the majority of the athletes was reduced whenever the team was winning. The same midfielder admitted, "Whether you like it or not, when you're winning, a score of 2 vs. 0, you get comfortable and settle down" (M1). And the wing said:

> Sometimes you're in the game, the team, like, in that really easy game, 4 vs. 0, then you kind of relax…. And when you relax, you end up failing. The other team scores, you end up causing a penalty kick. (W)

Poor officiating. We found poor officiating was regarded as a distracting stimulus by the players, especially if the player focused the attention on the referee instead of on his performance. For a midfielder, "Poor officiating usually distracts you. If you let yourself… if you keep talking to the referee, you will lose focus which is the ball" (M1). Poor officiating disturbed the players' attentional state especially under two circumstances: (a) if they attributed their work productivity to an uncontrollable factor such as the officiating quality, "Poor officiating, it takes concentration away a little, cause you think, 'man, I've worked so hard to get here and then the guy makes a mess like that and hurts us'" (D); or (b) if they overreacted to a bad call:

> Well, my concentration was taken away just once, playing against Barcelona, I think, when the referee ended up not calling an obvious penalty kick for us…. He ended up calling a free kick against us, so that was the only time I exceeded myself a little, I called him names and ended up getting a yellow card. (M4)

Even though players usually got angry with poor officiating, we found most of them were able to self-regulate and avoid being distracted by the referee's bad call. This was mainly achieved through attention management, which is the first stage in information processing (Baumeister & Heatherton, 1996). Whenever faced with poor officiating decisions, they recalled the potential negative consequences of overreacting. This attentional focus switch helped them refrain from arguing with the referee. For instance:

> We feel like calling him names or doing something else, but we think that we could hurt the team right away and you can hurt yourself by taking 180 days of punishment or a few games off. So, on the field we have to be really patient to try to accept it. (W)

A midfielder provided a similar response, "I get really angry. But I can control myself and get calmer…. [I] think that I can't be kicked out of the game at that time" (M2). Another reason given for controlling oneself was the possibility of the referee "marking" the player and then losing impartiality, thus becoming more prone to officiate in the opponent team's advantage. The defender explained, "Because if you keep putting pressure on him, he'll be against you. If you help him, he will make the calls with more peace" (D). One midfielder said:

> I try to keep calm when talking to the referee. Always politely, without gestures, because there's also that thing of the referee "marking" the player…. Then he begins to not call free kicks for us. If it was a free kick, he would just let the game go on. (M4)

Coach's complaints. Facing coach's complaints during the game was regarded as a potential source of distraction for some players. As a result, the coach's intervention ended up having the opposite effect as the intended one. The wing illustrated, "There are many

players that once the coach yells one or two times, the player begins to get more anxious, and to make even more mistakes" (W). Especially if the coach complained repeatedly, the player's attentional focus was directed to concerns over making subsequent mistakes. A midfielder explained:

> If he complains once that's ok…. Then you can still come back. Now, when he complains a lot, you begin to wonder, "hey, I have to do better, otherwise he'll take me out"…. So, this ends up being disturbing…. I think if the coach stays there complaining, demanding and demanding, that will hurt even more. (M3)

He further explained that some players benefit from the coach's complaints and it helps them increase their attentional readiness. But coaches' complaints do not have the same effect on all players and for some players the effect may be the opposite. A midfielder illustrated the differential effects of coaches' complaints on the performance depending on the athlete:

> There are players who need to be called to attention firmly in order to "wake up." Others do not. When I make a mistake, I know I did it, so I think that saying it once is necessary. Next time, I already have to know what is right or wrong. (M3)

As a result, the wing emphasized the importance of maintaining his best focus to not let the coach's complaints distract him. He said:

> When the coach complains to me, I do not let it put me down. I try to be focused…. If he's asking me to mark, I'll try to mark well. Mark and mark, so I can try to fix it. (W)

A midfielder also acknowledged that if the coach complained, some aspect of performance should be corrected or improved and the athlete should focus on following the coach's recommendations. He commented:

> It's trying to keep concentrated. Trying to make fewer mistakes, because you must be doing something wrong, or missing passes or being out of the position the coach

> wanted you to be. So, you have to do what he asked you to do, right? Try to get back to that focus and follow the recommendations. I think when the coach is complaining it's because something he said is not being executed. (M4)

Chapter V: Discussion

The purpose of this study was to explore and describe elite soccer players' attentional characteristics in best and less-than-best performances. More specifically, this study aimed to answer the following research questions: (a) What do elite soccer players focus on during their best and less-than-best performances?; (b) What strategies do they use to enter or re-enter optimal attentional states?; and (c) Are there different or specific characteristics of attentional focus in different soccer positions and in different performance tasks and situations? Therefore, in this Discussion, we address the three research questions identified for this study, discussing these findings with respect to previous literature and the theoretical framework that broadly informed this study.

First Research Question: Focus in Best and Less-Than-Best Performances

The first research question of this study concerned exploring and describing elite soccer players' attentional focus during their best and less-than-best performances. In regards to this research question, as the study progressed, it became evident that it would be difficult to answer this question completely in a single study. As demonstrated by the results of this study, there are different attentional demands and characteristics according to soccer positions, tasks, and game situations. Soccer is a dynamic game characterized by constant changes and requires the performance of varying tasks (e.g., blocking, passing, and shooting). Therefore, the athletes' focus was characterized by complex attentional focus switching between different stimuli on the visual field (e.g., the ball, the teammates' positioning, and the opponent players' positioning and body moves). As a result, any attempt

to answer the question about the athletes' attentional focus during their best and less-than-best performances is at least incomplete and would require a more extensive in-depth study. Nevertheless, the results of this study do shed light on some of the elite soccer players' overall attentional characteristics during their best and less-than-best performances. We found the players' attentional focus during best performances was characterized by having task-relevant positive thinking and being fully connected with the current moment of the game while performing on autopilot and relying on information extracted from peripheral vision.

The athletes' described their focus in best performances as having positive thoughts and being fully in the moment or focusing on the here and now. This is consistent with Orlick's (2008) extensive work with high performance athletes. According to Orlick (2008), athletes' focus on the here and now facilitates a full connection with the performance being executed which enhances the likelihood of a positive outcome. In addition, by focusing on the here and now, athletes do not dwell on uncontrollable aspects of their performance such as the past (e.g., previous plays) or the future (e.g., anticipating negative consequences of their performances). During their best performances, elite soccer players' attentional focus was characterized by executing well-learned skills on autopilot, that is, with a fully connected focus and without an attempt to consciously control their attention. This supports a substantial body of research on expert skill execution which states elite athletes who perform their best do not pay conscious attention to the execution of skills that have been automated during practice (e.g., Baumeister, 1984; Beilock & Carr, 2001; Masters, 1992, Orlick & Partington, 1988).

Research has found expert athletes make more use of peripheral vision to extract information than less expert athletes (Williams & Davids, 1998; Williams & Ford, 2013). In

line with previous studies, we found elite soccer players' focus in best performances involved automatically extracting information from peripheral vision. As a result, during their best focus, participants in this study were able to take a penalty shot without looking directly to the aimed corner of the goal. By focusing peripherally instead of directly fixating their eyes on the aimed corner of the goal, penalty kick takers avoided providing goalkeepers with anticipatory cues regarding the shot direction. At first glance, this finding appeared to be in contradiction with the existing literature on gaze behaviour. Previous research has shown that expert athletes have fewer gaze fixations on the target and longer quiet eye periods than less expert athletes (Janelle et al., 2000; Mann et al., 2007; Vickers, 1996). In activities like rifle shooting (Janelle et al., 2000) or basketball free throws (Vickers, 1996), it is understandable that high performance athletes focus their attention and fixate their eyes on the target as long as possible (i.e., on the bull's-eye or the basket). However, on a penalty kick, the kick taker may have to *avoid* focusing visual attention on the preferred spot in the goal where he/she wants to kick the ball; because, otherwise, the kick taker's visual focus could provide an excellent anticipatory cue for the goalkeeper to make the save. Therefore, the penalty kick taker would gain most by either looking at the goalkeeper, but avoid being distracted by the goalkeeper's potentially distracting moves or looking at the ball and focus on the desired corner of the goal with peripheral vision. However, looking at the keeper and avoiding being distracted by the goalkeeper's moves was reported as being difficult by Wood and Wilson (2010) who found that penalty kick takers were more distracted by a moving goalkeeper than a stationary one, especially under situations of high anxiety. In addition, looking at the ball and focusing attention peripherally on the corner of the goal may also be problematic as research has shown that with an increase in anxiety, the attentional field narrows and information available in the peripheral visual field might be missed (Janelle, 2002). Despite

these potential constraints, Williams and Ford (2013) argued expert performers may have a greater ability to extract information from peripheral sources and greater quality and quantity of information per fixation, which is in line with the findings of the current study. Relying on peripheral vision was an important characteristic of participants' best focus in this study, especially for those tasks where there may be an advantage in disguising one's intentions, such as taking a penalty kick.

During their less-than-best performances, elite soccer players in this study reported being distracted by internal stimuli such as performance worries and previous mistakes, or external stimuli such as opponents' deceptive movement (i.e., feinting), poor officiating, and coaches' complaints. This finding supports the work of Oudejans et al. (2011) on choking under pressure. Oudejans et al. (2011) found expert athletes focused on performance worries when performing under pressure. As previously shown, elite soccer players' performance requires ongoing and changing attentional demands. The dynamic nature of this sport requires expert soccer players to quickly process information and make several decisions in a short period of time. For example, in the moment of controlling the ball, a midfielder may have to attend to: (a) the trajectory of the ball to prepare an appropriate motor response, (b) the teammates' positioning to decide the target of the pass in the next play, and (c) the opponent players' positioning to decide in which direction the ball should be controlled to prevent them from taking ball possession. As a result, we found loss of concentration (i.e., distraction) due to performance worries (e.g., anticipation thoughts or fear of failure) or task-irrelevant thinking (e.g., rumination about previous mistakes) interfered with their best focus and successful motor performance. These results are supported by the work of Smith, Smoll, and Schutz (1990) with football players. Although football and soccer require different motor skills, the cognitive components of soccer and football do have some similarities as in both

sports players are required to mark opponents, find open spaces, deceive opponents, and locate teammates. According to Smith and colleagues, the high cognitive demands of football make players quickly process information and make decisions. As a result, "such demands would require attentional focus, and a loss of concentration due to intrusive thoughts would be expected to interfere with performance of the motor behaviours required for successful performance" (Smith et al., 1990, p. 277).

Second Research Question: Strategies to Enter and Re-Enter Optimal Attentional States

The second research question involved identifying the strategies used by elite soccer players to enter or re-enter optimal attentional states. All players reported adopting pre-performance routines to facilitate optimal attentional states. The pre-performance routines included the following cognitive and behavioural strategies: (a) visualization (e.g., imagining the plays while going to the stadium), (b) self-talk (e.g., thinking about doing their best and forgetting about external issues), (c) listening to music (e.g., to reduce anxiety levels or to increase arousal), (d) talking to teammates (e.g., providing support to and receiving encouragement from teammates), and (e) religious behaviours (e.g., praying).

Several studies provide support for the findings of this study with respect to the reported strategies used by elite soccer players. Wadey and Hanton (2008) found imagery (i.e., positive visualization) and self-talk were among the strategies used by elite athletes that enabled them to interpret or re-interpret anxiety symptoms as cues that could be facilitative to performance. They found one of the causal mechanisms responsible for that effect was increased attentional focus or increased feelings of familiarity and concentration. Results of the current study were also supported by the work of Pain, Harwood, and Anderson (2011). Pain et al. (2011) found that for some athletes the combination of music and imagery

facilitated focus and subsequent performance. Talking to teammates as a way of gaining or seeking positive social support, which was found in this study, was supported by the work of Holt and Dunn (2004) who investigated conditions associated with young elite soccer players' success. Holt and Dunn found the ability to perceive and use sources of social support was central to these athletes' success. In addition, Vealey (2007) considered interpersonal competence as "an important mental skill for elite athletes in terms of providing and using social support" (p. 291). Some findings in the current study (i.e., religious behaviours as a focusing strategy) are also supported by Maranise (2013) who argued that before competition, some athletes offer a prayer to God for safety, success, or strength.

Quality training was one of the factors that facilitated the players' optimal focus. One way physical and technical training led to optimal attentional states was by promoting the development of shared cognitions between teammates. Findings of this study provided further support for the importance of having shared cognitions (Reimer et al., 2006) and a shared understanding of the teammate's strengths and weaknesses (Tenenbaum, 2003) for the coordination of team sports. In training contexts, teammates have the opportunity to get to know one another and develop shared mental models about their playing styles and preferences, which can help them direct attentional focus in positive ways. A midfielder in this study talked about the importance of knowing the teammate well enough to know his preferred foot and adapt the pass accordingly. The wing also mentioned the importance of knowing the characteristics (i.e., behavioural tendencies) of the teammate in order to be able to adapt the pass (e.g., to the foot or to the front of the teammate).

In addition, the findings on deceptive movement (i.e., feinting) (Jackson et al., 2006) also supported the shared cognitions framework (Reimer et al., 2006). For example, the wing

in our study reported being deceived by a teammate who intended to deceive an opponent. A strategy originally designed to obtain an advantage over opponents (i.e., feinting) could backfire and actually turn into a disadvantage for the team if teammates do not share mental models about strategies, visions, or preferences. The example reported by the wing in our study showed how a lack of shared cognitions among teammates could lead to coordination loss in the team's performance.

Results of this study showed that making mistakes was often detrimental to an optimal attentional focus, which is supported by previous research (Bertollo, Saltarelli, & Robazza, 2009; Orlick & Partington, 1988). This was especially true if the mistake happened early in the game or if the mistake prompted task-irrelevant thinking (e.g., low self-efficacy beliefs or negative thoughts). Therefore, one of the strategies used by the participants in this study to maintain an optimal focus and prevent an early mistake from causing distractions was "starting off on the right foot" by beginning with easy plays. By focusing on performing easy plays in the beginning of the game, some of the athletes' goals were to prevent early mistakes from disrupting their optimal focus, confidence, and performance. We did not find any previous studies which investigated the importance of beginning with easy plays as a way to prevent mistakes from causing distractions.

In an attempt to cope with distracting stimuli, the participants in this study reported shifting focus away from potentially disturbing stimuli such as an unsupportive home crowd, poor officiating, and coaches' complaints to something positive that was within their control. The athletes emphasized the importance of focusing on controllable aspects of their performance to help them keep focused in the face of distractions (e.g., focusing on the next play after a performance mistake). These findings support Orlick's (2008) recommendation for performers to focus only on what is under their control.

Third Research Question: Attentional Focus in Different Positions, Task, and Situations

The third research question addressed specific characteristics of attentional focus for different soccer positions, performance tasks, and game situations. Results from this study supported previous research (Thelwell, Greenlees, & Weston, 2006; Thelwell et al., 2010; Williams & Ward, 2007) and clearly demonstrated that attentional demands differed according to soccer players' positions, soccer tasks, and game situations. This was a key finding in this study. Williams and Ward (2007) argued that each sport had unique visual requirements and suggested that visual demands were likely to vary according to different positions, in agreement with the work of Thelwell and colleagues (2006; 2010) with soccer athletes. In the current study, it was found that attentional priorities were not the same across all soccer positions. For example, while the goalkeeper needed to focus his attention mostly on the ball in order to be constantly ready to prevent it from entering the goal, the forward focused his attention mostly on the goalkeeper and the defenders' positioning in order to find open spaces to receive the ball and choose the appropriate corner of the goal to score on the goalkeeper in that play. Attentional focus also differed according to specific performance tasks. For example, self-paced skills (e.g., penalty kick) required focused attention on relatively little stimuli from the kick taker (e.g., directly on the ball and peripherally on the corner of the goal), while controlling the ball involved a much more complex set of attentional skills with the player needing to quickly scan the field to know the available space and make a good decision about the next play, keeping in mind the teammates and the opponents' positioning.

Williams and Ford (2013) speculated that skilled players present similar gaze behavioural patterns during closed skills (e.g., goalkeeper defending a penalty kick) and open

play situations in the field (e.g., a goalkeeper trying to defend a kick with the ball rolling). In contrast to Williams and Ford's (2013) hypothesis, the findings of our study indicated that attentional patterns during self-paced (i.e., closed skills) and environmentally-paced (i.e., open skills) situations actually differ. The greater complexity that characterizes open skills requires a different and more complex attentional focus. During open skill situations, players need to consider a greater amount of information in order to make appropriate decisions. For example, when marking an opponent player who is carrying the ball, the defender needs to direct his/her attention to the most relevant areas such as open opponents who may be targets for a pass, the position of teammates in covering these potential opponent targets, and the positioning and postural cues of the player in possession of the ball. This will allow the defender to extract the most relevant advance information that will allow him/her to appropriately anticipate the opponent's action and then make a good decision regarding which action to take. The goalkeeper's perspective may also help in understanding such differences. When speaking about closed skills (e.g., penalty kicks or free kicks), the goalkeeper mentioned that closed skills are "easier" since the temporal and spatial constraints are reduced. In an open-skill play, there is an increased temporal constraint because the shot may arrive at any time; thus the goalkeeper must be ready, "without blinking", all the time. Also, in an open-skill play, the goalkeeper's visual field is limited by the increased spatial constraint (i.e., opponent players and teammates who may be moving between the goalkeeper and the opponent player who is in possession of the ball), which makes the goalkeeper constantly focus his attention on the ball to not lose sight of it. As a result of these findings, it appears that elite soccer players' visual search behaviour differs between closed and open skill situations, with the latter ones demanding more attentional resources.

Thelwell et al. (2006) found position-specific psychological skills to be beneficial to role-specific performance components. Thelwell et al.'s (2006) findings support results from the current study which indicated that different performance components require different attentional resources, which in turn require specialized attentional training. For example, different attentional demands were found between attacking and defending roles. When the player was defending (e.g., the goalkeeper), his attentional focus was directed mostly at the ball. In a different way, the attentional focus of an attacking player (e.g., forward) was directed mostly to monitoring teammates and opponents' positioning and body configuration. These results provide further support to the work of Wilson (2002) who developed a framework for teaching tactical game knowledge. In addition to providing attacking versus defending differences, she also differentiated athletes' roles according to ball possession (e.g., on-ball attacker versus off-ball attacker). It seems logical that attentional requirements also vary according to whether the player has ball possession or not. Nevertheless, this study did not gather data on attentional differences between on-ball versus off-ball roles to substantiate this intuitive reasoning.

Findings of this study are also supported by Taylor's (1995) work. Taylor developed a framework to help practitioners identify sport-specific roles and their psychological priorities in order to develop effective intervention programs. According to Taylor (1995), in the development of competitive mental preparation strategies, practitioners should integrate the athletes' needs and the specific sport demands (i.e., physical, technical, logistical, and psychological). The current study highlighted important attentional demands in elite-level soccer. The findings of this study also identified specific attentional characteristics and demands according to the five main soccer positions in the field (i.e., goalkeeper, defender,

wing, midfielder, and forward). The findings of this study should be of help in informing practitioners in the development of position-specific focusing strategies in elite soccer.

In summary, this study showed different attentional characteristics for distinct soccer positions. According to Thelwell et al.'s (2006) study, even players in the same soccer position (e.g., midfielder) may perform different functions (e.g., attacking midfielder vs. defending midfielder). An attacking midfielder may have to focus on helping the team move forward and create scoring opportunities. A defending midfielder might have to focus on helping defender teammates reduce opponent players' space, block opponent shots to the team's goal, and regain ball possession for the team to counterattack. As a result, in addition to identifying players' psychological priorities to design position-specific intervention strategies, practitioners should also take into account the different attentional priorities of players in the same position who may perform different roles on the field.

Chapter VI: Conclusion

The key findings of the study and the implications for research, theory, and practice in sport psychology are summarized below. Next, limitations of this study are addressed and recommendations for future research are suggested.

In a review about football which included football, soccer, and rugby, Reilly and Gilbourne (2003) stated that, "From a football perspective, scientifically oriented sport psychology literature is a scarce resource" (p. 699). Most studies on elite soccer athletes' attentional focus have investigated its characteristics through laboratory-based tasks which involved manipulation of some variables to understand their influence on the athletes' behaviour (e.g., McMorris & Colenso, 1996; Savelsbergh et al., 2002; Williams & Davids, 1998). In addition, these studies focused on closed skills, with little research being done on open skills. The purpose of this study was to explore and provide a rich description of elite

soccer players' attentional focus from a naturalistic perspective. This study investigated elite soccer athletes' attentional focus according to different soccer positions in several game situations and performance tasks of both closed and open skills. We were not able to find any other interview studies in the literature that had taken this approach with elite soccer athletes. Therefore, this study constituted in a unique contribution to the field of sport psychology.

Thelwell and colleagues (2006; 2010) called attention to the potential shortcomings of applied-based studies in the field of sport psychology. They suggested there is an inconsistency in the provision of a rationale for the choice of specific psychological skills in intervention studies. They also stated that most applied-based studies neglected the importance of examining performance subcomponents in understanding overall performance outcomes. The current study contributed to the field of applied sport psychology in at least two meaningful ways: (a) by describing elite soccer athletes' perceptions of essential attentional requirements for performing to their capacity–thus providing practitioners with supportive arguments to justify the choice of attentional focus training for elite-level soccer players; and (b) by examining performance subcomponents and their attentional demands, thus allowing future researchers to use this knowledge to increase our understanding of overall positive performance outcomes.

Research findings from this study shed light on attentional focus requirements for high level performance athletes in soccer positions and tasks, and provide considerations for performance enhancement in soccer-related and other team-related sport performance contexts. For example, as previously noted, feinting or deceptive skills have the potential to offer a great advantage over opponents in competitive situations. Results of this study provided support for this claim and pointed out the importance of the systematic development and implementation of feinting skills training programs in high-level soccer.

Such programs may include training players to attend to relevant stimuli that allow deceiving opponent players and avoid being deceived by them.

In conclusion, a qualitative study of elite soccer-specific attentional skills was lacking. The present study addressed this need through an investigation of elite soccer athletes' attentional skills and characteristics related to performance tasks, specific game situations, and soccer positions. Finally, attentional focus has been found to be a core construct in mental skills improvement and overall performance enhancement in many high performance domains. This qualitative study helped us gain a better understanding of elite soccer players' focusing skills and represented a significant contribution to the applied and theoretical field of sport psychology.

Limitations

There were several limitations in this study. First, data was collected through eight interviews of a relatively short duration (i.e., 30 minutes in average). Culver, Gilbert, and Sparkes (2012) pointed to the limitations of single-shot interviews. First, this approach may not have allowed the study to reach data saturation. If it had been possible with these high performance professional athletes, multiple interviews with the same participants could have allowed follow up and elaboration on previous issues, which could have provided more depth and increased the chances of building better quality of trust and rapport. However, the difficulty involved in accessing these elite athletes was a determining factor influencing the choice of single-shot interviews as well as the number of participants interviewed. In addition, the absence of a demographic component in the interview guide and the relatively straightforward character of the questions asked (e.g., direction of attentional focus as opposed to the meaning of lived experiences) may have contributed significantly to the interviews taking approximately 30 minutes. Perhaps another reason for the relatively short

duration of the interviews was the "insider" dilemma, a phenomenon described by Grbich (2007). While the researcher's previous experience with soccer, not only as a recreational player but also in competitive settings, could be regarded as a positive aspect which facilitated both the development of a connection between researcher and participants and the comprehension of sport-specific terminology, it may have also resulted in the belief that there was a shared ideology or culture between researcher and participants. As a result, participants in this study may have felt too much elaboration was not required and that there was no need to explain in greater detail their attentional focus, because the researcher was also someone who had extensive previous knowledge about the game.

Second, the sport, gender, and nationality of participants may be regarded as limitations of this study. This study investigated male high performance soccer athletes from Brazil. Therefore, the applicability of the findings may be limited to this kind of sport and population, as there may be cultural particularities involved the results obtained. For example, the effect of an unsupportive home crowd on the athletes' focus could be more intense in the Brazilian culture than in the Canadian culture, which would limit the potential of transferability of the findings.

Third, all steps in the data collection process (i.e., interviewing, transcribing, and translating) were conducted by the main researcher. On one hand, this may contribute to promote familiarity and consistency in the data collection and analysis. On the other hand, the absence of an external member to perform such duties may, in some cases, lead researchers to being "over familiarized" with the data, thus possibly leaving out potentially relevant details.

Finally, another limitation concerns the difficulty of obtaining data on cognitive processes, especially about skills that happen on autopilot or under automatic processing of

information. Due to the absence of other data collection methods such as field observations or a stimulated-recall technique (Trudel, Haughian, & Gilbert, 1996), the researcher had to rely on the athletes' reports about what they did. Having other methods of data collection such as field observations in addition to interviewing could have worked as a form of triangulation and may have helped "explore the possible differences between what people say they do and what they actually do" (Culver et al., 2012, p. 272).

Future Directions

Some ideas presented in this study are speculative and unsubstantiated by empirical research. Therefore, further research is needed to confirm these ideas and to fill remaining gaps in the literature. Future research involving a greater number of participants, of both genders, and from varying nationalities may help confirm and advance the findings of this study. In addition, having coaches' perspectives on the attentional requirements in different performance tasks, game situations, and soccer positions could also enrich the results obtained. This study emphasized attentional skills with expert athletes in the sport of soccer. Future studies that examine other task-specific and position-specific psychological requirements from different sports and levels of expertise are recommended.

Future studies could also address other specific relevant performance tasks in soccer such as a sliding tackle or trying to steal the ball from the opponent, which is a very important action leading either to a ball possession change or to the team which possesses the ball gaining further advantage if the tackle attempt fails. Another performance task yet to be investigated is heading the ball, either from a defending or from an attacking perspective. Heading the ball is a complex and important performance task in soccer and anecdotal evidence shows that some teams are known for having a "long ball" playing style, which creates several heading opportunities during the game.

Although we found peripheral vision was an important characteristic of elite soccer players' best focus, it was beyond the scope of this study to gather detailed data on the players' focus when they rely primarily on peripheral vision for skill execution. Future investigations on this kind of skill execution would provide an even greater understanding about the role played by peripheral attentional focus on expert performance.

The ability to dissociate gaze and intention, however difficult it may be (Henderson, 2003), might be an important component of experts' deceptive movement repertoire (e.g., looking at a teammate but actually passing the ball to another teammate). Therefore, future research should attempt to help us better understand how feinting skills affect attentional focus and studies should also examine the effect of attentional focus on deceptive movement implementation (i.e., to gain advantage over opponents) and deceptive movement prevention (i.e., to avoid being deceived by the opponent).

Finally, another interesting avenue worthy of further investigation is the effect of mistakes on the athletes' attentional processes and the evaluation of the potential links between perfectionism and distraction. Since excessive concern over mistakes in performance is the major dimension of perfectionism (Frost, Marten, Lahart, & Rosenblate, 1990), perhaps perfectionist athletes are more prone to distractions following mistakes than non-perfectionist athletes. Future intervention studies may also test the efficacy of strategies and coping mechanisms aimed to deal with mistakes such as beginning with easy passes and the ability to quickly refocus or forget previous mistakes.

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Appendix A

Elite Soccer Players' Attentional Focus Interview Guide

I would like to talk to you about your focus, your concentration, and what you pay attention when you play well. The first question is:

1- What does it mean to be focused to you? Could you give an example?

Probe: What goes on your mind in those moments?

Now, try to remember your best performances, games you played really well.

2- How did you concentrate before those games? What did you do to concentrate? What were you thinking? Could you give an example?

3- What did you do to remain focused during those games? What went through your head?

Probe: What helped you keep focused? Could you give an example?

4- Now, I would like to know what goes through your mind and what you focus on in different situations during those games. What are your thoughts and your focus like:

a) About to begin the game

b) At the time of making a pass

c) At the time of controlling the ball

d) At the time of kicking to the goal OR defending/blocking a shot to the goal

e) At the time of dribbling past the opponent

f) During half time

g) Playing home vs. away

h) Playing under pressure

i) Playing outnumbered or with an extra player on the field

j) On the bench

k) Being yelled by the coach

l) Facing an unfair call from the referee

m) Before the free kick

n) Before the corner kick

o) Before the penalty kick

p) Feeling pain or injured

q) Feeling tired

r) Being in front or behind in the score

5- Do you ever get distracted in practice? How about in games?

Probe: What distracts you the most? How do you usually deal with those distractions?

6- Tell me about your focus and thoughts when you played below your potential. What were you thinking during different moments of the game?

7- What is the most important for the concentration of elite soccer players?

8- Is there anything you would like to add that I may have missed? Any final comments?

Appendix B

Recruitment Letter

Title of the study: Elite Soccer Players' Mental Skills: An exploration of focusing strategies.

Principal Investigator: Rafael Tedesqui
Master's student of
University of Ottawa
Ottawa, ON

Thesis Supervisor: Dr. Terry Orlick
Professor of
University of Ottawa
Ottawa, ON

Invitation to Participate: You are invited to participate in the abovementioned research study conducted by Rafael Tedesqui and his supervisor Dr. Terry Orlick. This project is funded by the Social Sciences and Humanities Research Council. The purpose of this study is to understand the focus of elite soccer players during their best performances. Eligibility criteria include: both genders, being 18 or over 18 years old, previous participation in the national soccer team in an international competition, and being an active player or recently retired. Your participation will consist of participating in one interview, and providing feedback regarding the transcribed interview via e-mail afterwards. The interview will last no longer than 90 minutes and will be scheduled at a time and location convenient for you. Participation selection will be based on a first come, first served basis.

Risks and Benefits: This study is an opportunity to provide practitioners and researchers relevant information related to elite soccer players' focusing skills that allow them to perform their best. Potential benefits for the participant include the recognition and the strengthening of mental skills that may contribute to the improvement of performance and the consistency of high-level performance. The results of this study will be compiled as the principal researcher's dissertation study and will be presented at future research conferences and published research manuscripts. Any information that may reveal your identity will be safeguarded. Specific quotes from your interview may be used to display the results of this study. Your name will be replaced by a pseudonym unless you choose to keep your name in all proceeding disseminations of the results.

Confidentiality and anonymity: All information that you share will remain strictly confidential. In order to preserve confidentiality, all names and quotes will be replaced by

pseudonyms unless you choose to have your name shared in the dissemination of the research results.

Voluntary Participation: Your participation in this study is entirely voluntary. You are under no obligation to participate and you can withdraw from the study at any time, without suffering any negative consequence. If you choose to withdraw, all data gathered until the time of withdrawal will be excluded from analysis and destroyed. If you choose to participate in this study, you will be provided with a Consent Form before the interview begins containing the same information detailed in this letter. At this time, you will be asked to read through the Consent form and sign your name confirming your participation in this study. You will also have the option to choose whether or not you would like your name to be used in the dissemination of the results. You will receive two copies of the Consent Form, one of which is yours to keep. Please contact the principal researcher if you have any other questions and to schedule the interview if you choose to volunteer for this study. Thank you for your time!

Appendix C

Consent Form

Title of the study: Elite Soccer Players' Mental Skills: An exploration of focusing strategies

Principal Researcher: Rafael A. B. Tedesqui, MA Candidate, School of Human Kinetics, Faculty of Health Sciences, University of Ottawa, Canada.

Thesis Supervisor: Dr. Terry Orlick, School of Human Kinetics, Faculty of Health Sciences, University of Ottawa.

Invitation to Participate: I am invited to participate in the above mentioned research study conducted by graduate student Rafael A. B. Tedesqui. This project is funded by the Social Sciences and Humanities Research Council. The purpose of the study is to understand the focus of elite soccer players in their best experiences. My participation will consist of sharing experiences related to my best performances as a soccer player in one audio recorded interview lasting no longer than 90 minutes, scheduled at a time and location that is convenient and chosen by me, and providing feedback regarding the transcribed interview afterwards. All names will be removed from all data reviewed and analyzed to ensure confidentiality. However, I may choose to keep my name within the interview transcripts and future research manuscripts.

Risks and Benefits: This study is an opportunity to provide practitioners and researchers relevant information related to elite soccer players' focusing skills that allow them to perform their best. Potential benefits for me include the recognition and the strengthening of mental skills that may contribute to the improvement of my performance and the consistency of high-level performance. The results of this study will be compiled as the principal researcher's dissertation study and will be presented at future research conferences and published research manuscripts. I am assured by the researcher that any information revealing my identity will be safeguarded. I am also aware that specific quotes from my interview may be used to display the results of this study. I have been assured by the principal investigator that my name will be replaced by a pseudonym unless I choose to keep my name in all proceeding disseminations of the results.

Confidentiality and anonymity: I have received assurance from the researcher that the information I share will remain strictly confidential. In order to preserve confidentiality, all names and quotes will be replaced by pseudonyms unless I choose to have my name displayed in dissemination of the research results. All of my information (i.e., audio recorded interview, transcribed interview, and feedback from the transcribed interview) will be

safeguarded through password protected files only accessible by the principal researcher and his thesis supervisor.

Conservation of data: The data collected will be kept in a secure manner in a locked filing cabinet in the office of the supervisor, Terry Orlick. It will be accessible only to Rafael Tedesqui and his supervisor Dr. Terry Orlick. All of my information (i.e., audio recorded interview, transcribed interview, and feedback from the transcribed interview) will be conserved for five years. Any inquiries about any part of the research being conducted should be addressed to Rafael Tedesqui or to his supervisor Dr. Terry Orlick.

If I have any questions regarding the ethical conduct of this study, I may contact the Protocol

Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street,

Room 154, Ottawa ON, K1N 6N5, (613) 562-5387, or by email at ethics@uottawa.ca

Voluntary Participation: I am under no obligation to participate and I can withdraw from the study at any time and/or refuse to answer any questions, without suffering any negative consequence.

If I choose to withdraw, all data gathered from my audio recorded interview, transcribed interview, and feedback from the transcribed interview will be excluded from analysis and destroyed.

Acceptance: I, _____, agree to participate in the above research study conducted by graduate student Rafael Tedesqui and his thesis supervisor Dr. Terry Orlick of the School of Human Kinetics, Faculty of Health Sciences at the University of Ottawa.

Identity Information: I, _____, may choose to include or not include my name in the dissemination of the results of this study (which may include personal quotes). I will check the corresponding space below confirming whether or not I will allow my name to be used in this study.

___ Yes, I will allow my name to be used in this study.

___ No, I would like my name to be replaced by a pseudonym to assure confidentiality.

Participant's E-mail Address (for receiving the transcribed interview and providing feedback):

_____

There are two copies of the consent form, one of which is mine to keep.

Participant's signature: _____ Date: _____

Researcher's signature: _____ Date: _____

Appendix D

E-mail Script

Dear soccer club manager,

This email is intended to invite elite soccer players to participate in a research study conducted by Rafael Tedesqui and his supervisor Dr. Terry Orlick.
Please, find attached a letter of information containing more details about this study.
We really appreciate if this letter could be forwarded to players who fit the inclusion criteria for participation in the study.

Thank you for your kind attention,

Rafael Tedesqui

Master's student in Sport Psychology
University of Ottawa
Ottawa, ON

Appendix E
Follow Up E-mail Script

Dear soccer club manager,

This email is intended to check if you have received the e-mail previously sent containing an invitation letter for elite soccer players to participate in a research study conducted by Rafael Tedesqui and his supervisor Dr. Terry Orlick.
In case you have not received the previous e-mail, please find attached a letter of information containing more details about this study.
We really appreciate if this letter could be forwarded to players who fit the inclusion criteria for participation in the study.

In case you have received the previous e-mail, I apologize for the inconvenience of reading this.

Thank you for your kind attention,

Rafael Tedesqui

Master's student in Sport Psychology
University of Ottawa
Ottawa, ON

Appendix F

Ethics Approval

File Number: H06-12-17 **Date (mm/dd/yyyy):** 07/17/2012

Université d'Ottawa University of Ottawa
Bureau d'éthique et d'intégrité de la recherche Office of Research Ethics and Integrity

Ethics Approval Notice

Health Sciences and Science REB

Principal Investigator / Supervisor / Co-investigator(s) / Student(s)

First Name	Last Name	Affiliation	Role
Terry	Orlick	Health Sciences / Human Kinetics	Supervisor
Rafael Alves Ballon	Tedesqui	Health Sciences / Human Kinetics	Student Researcher

File Number: H06-12-17

Type of Project: Master's Thesis

Title: Elite Soccer Players' Mental Skills: An Exploration of Focusing Strategies

Approval Date (mm/dd/yyyy)	Expiry Date (mm/dd/yyyy)	Approval Type
07/17/2012	07/16/2013	Ia

(Ia: Approval, Ib: Approval for initial stage only)

Special Conditions / Comments:
N/A

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File Number: H06-12-17 **Date (mm/dd/yyyy):** 07/17/2012

Université d'Ottawa University of Ottawa
Bureau d'éthique et d'intégrité de la recherche Office of Research Ethics and Integrity

This is to confirm that the University of Ottawa Research Ethics Board identified above, which operates in accordance with the Tri-Council Policy Statement and other applicable laws and regulations in Ontario, has examined and approved the application for ethical approval for the above named research project as of the Ethics Approval Date indicated for the period above and subject to the conditions listed the section above entitled "Special Conditions / Comments".

During the course of the study the protocol may not be modified without prior written approval from the REB except when necessary to remove subjects from immediate endangerment or when the modification(s) pertain to only administrative or logistical components of the study (e.g. change of telephone number). Investigators must also promptly alert the REB of any changes which increase the risk to participant(s), any changes which considerably affect the conduct of the project, all unanticipated and harmful events that occur, and new information that may negatively affect the conduct of the project and safety of the participant(s). Modifications to the project, information/consent documentation, and/or recruitment documentation, should be submitted to this office for approval using the "Modification to research project" form available at: http://www.research.uottawa.ca/ethics/forms.html

Please submit an annual status report to the Protocol Officer four weeks before the above-referenced expiry date to either close the file or request a renewal of ethics approval. This document can be found at: http://www.research.uottawa.ca/ethics/forms.html

If you have any questions, please do not hesitate to contact the Ethics Office at extension 5387 or by e-mail at: ethics@uOttawa.ca.

Kim Thompson

Protocol Officer for Ethics in Research
For Daniel Lagarec, Chair of the Health Sciences and Sciences REB

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