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**Mental Strategies of Football Quarterbacks
for Training and Competition**

**Duncan C. Anderson
School of Human Kinetics
University of Ottawa**

A thesis submitted to the
School of Graduate Studies and Research
in partial fulfillment of the requirements of the degree
Master of Arts in Human Kinetics

March 17, 1995



Duncan C. Anderson, Ottawa, Ontario 1995



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Dedication

This thesis is dedicated to my parents, who have taught me the value of stubborn perseverance, and other qualities understood mainly by Scots.

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Sandy, who is immune to hypnosis yet loves me anyway, who I love dearly.

Abstract

Orlick (1992) proposed a “Model of Human Excellence,” which was comprised of seven mental skills, including commitment, belief, full focus, positive imagery, mental readiness, distraction control, and constructive evaluation. Twelve individuals who had played the quarterback position at a high caliber of competition participated in a standardized interview to determine if this model accounted for their mental strategies for training and competition. The sample was divided into university (n=9) and professional (n=3) sub-groups. Structural, qualitative analyses were conducted on each transcript. Individual differences with respect to the use of mental skills appeared to be related to the level of play, with the best players in both sub-groups having the most comprehensive mental approaches and practices. The most marginal mental skills for the university quarterbacks were positive imagery and constructive evaluation.

Table of Contents

Dedication	p.2
Acknowledgement	p.3
Abstract	p.4
Table of Contents	p.5
List of Figures	p.6
List of Tables	p.7
Introduction	p.8
Review of literature	p.10
Method	p.29
Results and Discussion	p.36
Concluding Reflections	p.53
References	p.56
Appendix	p.65

List of Figures

Figure 1	Orlick (1992) and the Mental Skills of Football Players	p.23
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List of Tables

Table 1	Operational Definitions of the Components of the “Model of Human Excellence”	p.35
Table 2	Mental Components used by University Quarterbacks	p.37
Table 3	Mental Skills Sub-Components used by Quarterbacks	p.38

MENTAL STRATEGIES OF FOOTBALL QUARTERBACKS FOR TRAINING AND COMPETITION

Excellence in athletics is cultivated through many hours of physical and psychological preparation. Through physical training, athletes attempt to create the physiological and technical adaptations which will enable them to meet the demands of competition. Psychological preparation allows athletes to develop the ability to control their mental state "before, within and after an event" (Orlick, 1986, p.7). Acquiring such control may enhance the likelihood that repertoires of complex physical skills will be expressed during competitions and be recognized as human excellence.

Excellence in sport has been described as the capacity to "perform consistently at peak in highly stressful sport situations" (Davies, 1989, p.1). Efforts to acquire this capacity may be aided by psychological training, the objective of which is "to learn to consistently create the ideal mental climate that unleashes those physical skills which allow athletes to perform their best" (Williams & Straub, 1986, p.2). This ideal mental climate has been characterized as being one of "unselfconsciousness, the achievement of which hinges upon practicing the technically learnable part of activities to the point of repletion, then letting go of oneself" (Herrigel, 1987, pp.44-47).

Central to the concept of an ideal mental climate is the familiar notion that mind-body synergy is essential in efforts to create exceptional athletic performances. Davies (1989) pointed out the critical role of the psyche in this relationship, noting that "physiological output during a match is affected by motivation...[therefore]...the factors which contribute towards the player's motivation are crucially important" (p.117). Anshel (1990) suggested that these factors included "three primary sources: the athlete, the team leader (ie., the coach) and the environment in which these individuals interact" (p.2).

In terms of the athlete, empirical investigations have focused on personality, psychomotor behaviour, or cognitive focus. In cognitive sport psychology, the thoughts and images which contribute to athletic performances are the centre of attention. Orlick (1992) proposed that the cognitive processes of top athletes fell into seven categories. Commitment and belief were said to represent the core of personal excellence, while positive images, mental readiness, full focus, distraction control and constructive evaluation helped bridge the gap between potential and actual performance. Qualitative studies involving exceptional individuals in a number of sports contributed to the formulation of this model (Boulay, 1990; Kreiner-Phillips, 1992; McCaffrey & Orlick, 1989; Orlick & Partington, 1988).

Similar research designs have yet to be employed with participants in North American football. That is, the systematic collection and qualitative analysis of personal reflections on mental preparation, from a group of high calibre football players, was warranted. Such a study would provide insights into the psychological factors in football performance.

Each member of a football team must respond to a different combination of physical and psychological challenges. For roles requiring decision making, speed, and accuracy, calmness may contribute to enhanced performance, while aggressiveness may be the key in positions in which performance effectiveness hinges upon the efficient use of tremendous physical power (Kauss, 1978). One of the most visible positions in football is that played by the quarterback. Individuals occupying this position play a pivotal role in the execution of every offensive play. It demands physical agility, strong throwing skills and the ability to demonstrate affective control while making decisions in dynamic, interactive circumstances. Plimpton (1966) described these challenges as a participant in a Detroit Lions (N.F.L.) training camp.

First of all, you've got to keep the field position in mind--what down it is and so forth...[and]...fifteen or twenty...[offensive]...plays which ought to do well against the club you're playing. But the defense can throw four or five formations against those plays, which means almost one hundred possible situations you have to diagnose to see if you should go ahead with your choice of play. Then, after you call the checkoff, they can jump the defenses around on you, and you may be forced to call another. And the clock is running all the time, just a few seconds available for you to decide what to do (Plimpton, 1966, p.176).

Effective management of the psychological demands inherent to the quarterback position may require well refined mental qualities and mental skills.

Statement of the Problem

The aim of this study was to investigate whether Orlick's (1992) model of human excellence accounted for the mental strategies employed by football quarterbacks.

Review of Literature

There are large segments of contemporary North American society within which the sport of football is a "major obsession" (LeUnes & Nation, 1982). Consequently, a great deal of material pertaining to the sport has been published, including investigations in which psychological tests were administered in an effort to develop a profile of the "football type," and descriptions of mental training programs aimed at enhancing football performance. Non-scientific sources, such as football autobiographies, and interviews in popular sports journals, also were searched for possible insights into the mental aspects of the game.

Psychometric Studies of Football Players

Morgan (1980) reported that successful athletes in all sports possessed above

average mental health. His conclusion was based on studies with top American marathoners, middle-distance runners, wrestlers, and oarsmen who completed the Profile of Mood States (POMS). The test required that respondents rate their emotions from the preceding week, on 65 different words or phrases. A 5-point rating scale was used which ranged from "not at all," to "extremely." Test items were grouped into six general categories, including tension, depression, anger, vigor, fatigue, and confusion. Combined scores on each category allowed for the construction of a "mood profile" for each group of athletes. All three groups showed the "Iceberg Profile." That is, their scores fell below average on tension, depression, fatigue, and confusion, and well above average on vigour. Morgan interpreted the Iceberg Profile as a manifestation of "superior mental and emotional health" and generalized that it was "typical of elite athletes."

In 1982, LeUnes and Nation used the POMS, as well as Levenson's multidimensional locus of control scale (LOC), the California F-Scale to measure authoritarianism, and the Sport Mental Attitude Survey (SMAS) to study perceptions of the importance of mental factors in football performance. Their study involved 60 university football players, 60 former high school players who no longer played the game, and 60 males who were non-athletes. Group scores on the POMS indicated that, in comparison to the other two groups, college football players were significantly less depressed, angry, fatigued, and confused, but significantly more vigorous, thus supporting the Iceberg Profile. LeUnes and Nation encouraged caution in interpreting this as a sign that "a single psychological map is associated with giftedness in athletics, due to the lifestyle and economic advantages enjoyed by American college football athletes." However, the fact that the football players complied with the Iceberg Profile introduced the possibility that they might employ mental approaches similar to those of top performers in other sports.

In terms of the other tests in the battery, on the LOC scale, the college football players scored significantly higher only on the "powerful others" dimension. This was interpreted as "evidence of the extent to which the coaching staff influences the lives of the players." In view of the healthy profile projected in the POMS scores, this was considered a positive attribute. On the other hand, overall F-scale scores indicated that the varsity players were the most conservative and authoritarian group. LeUnes and Nation suggested that these traits may have evolved in response to the selection process to which the players had been subjected throughout their careers. As was noted, findings such as these raised the "same old issue: Cause or effect?"

A partial solution to the problem may have been found in the responses to the SMAS. Of the three groups, college football players placed greater importance on "mental attitude" as a determining factor in athletic performance. The authors surmised that the players cultivated "mental versions of an idealized state of readiness," to enhance confidence and productivity. However, descriptions of mental readying strategies, which may have included accepting the authority of powerful others, such as coaches, were not included in the discussion.

In a subsequent study Nation and LeUnes (1983) tested 108 American college football players with the same battery of inventories, excluding the SMAS. Comparisons were made based on position category (offensive linemen, offensive backs, wide receivers, defensive linemen, linebackers, defensive backs) classification (freshmen, sophomore, junior, senior) and redshirt status (playing, not playing). Overall, the offensive players were found to be significantly more anxious, depressed, and confused than defensive players. In terms of position categories, linebackers demonstrated "greater psychological disturbance" than the other positions, while defensive backs recorded psychological profiles consistent with the Iceberg Profile. Freshmen exhibited more confusion and fatigue, while

the redshirted players displayed more anger. This evidence suggested that psychological factors among football players varied between positions, and over the course of college careers.

A later investigation by Daiss, LeUnes and Nation (1986) involved 60 college football players who had participated in an earlier study conducted by LeUnes and Nation (1982). Forty-eight of the subjects did not play beyond the Division 1-A level, while 12 had continued on to play in the National Football League. The subjects completed the POMS, and a multidimensional locus of control scale. It was found that these two groups did not differ in mood or locus of control, however, their scores on depression, fatigue, confusion, and total mood disturbance were lower than those of "two other groups of college students from the same university; one had played football in high school but the other had never lettered in any sport." The former college players and the professionals scored higher on vigor and the powerful others dimension of the LOC than the comparison groups. The authors concluded, however, that the Iceberg Profile could not be confirmed in the professional football players.

Through the use of the POMS, the Self-Evaluation Questionnaire, which measured state and trait anxiety, and the abbreviated Tests of Attentional and Interpersonal Style (TAIS) McGowan and Shultz (1989) obtained additional information regarding the mental approaches of American college football players. Two hundred and fifty-seven players, from three different schools were grouped into three broad categories: (1) linemen; (2) linebackers, running backs, and receivers; (3) quarterbacks, and defensive backs. Differences between groups in state and trait anxiety, and attentional styles were not apparent. In terms of the POMS scores, defensive players scored significantly higher than offensive players on vigor. In addition, the anger score for defensive linemen and offensive linemen was significantly higher than that for players from all other

positions. McGowan and Shultz noted that differences in affect may have been "associated with differential task demands," although this relationship was not supported by the data. Furthermore, the study was conducted on the first day of a spring camp and proximity to the onset of practice was thought to have influenced the subjects responses. The results were suggestive, however, of position specific preperformance psychological states, and psyching strategies.

In a study which centered on locus of control, rather than mood state, Gross, Tiffany, and Billingham (1987) tested 387 football players from eight NCAA Division 1 athletic programs. The authors used Rotter's Locus of Control Scale and the Dalhauser Football Locus of Control Scale, both of which measured perceptions of internal or external control, in order to challenge the assumption that locus of control was "stable over time and across specific situations." Based on a comparison of the means obtained from the football players, it was determined that they were more internally controlled within the football environment. Expertise in football, acquired through intense training, was thought to have contributed to the players sense of internal control.

The effects of training on the mental state of football players was studied in more depth by Brone and Reznikoff (1989). Before and after participating in a 14 week strength training program, 37 American college football players completed Rotter's Internal-External Locus of Control Scale, Gough and Heilbrun's Adjective Checklist, which measured self-concept, and tests of their one repetition maximum in two exercises: the bench press, and the squat. The results indicated that pretest scores on locus of control and self-concept did not predict strength changes. In addition, no changes in locus of control were found. The only significant positive correlation found was between self-confidence and changes in total physical strength. Those whose strength improved most also gained the most confidence. It was suggested by the authors that these factors may have

been interdependent. That is, strength gains may have contributed to enhanced self-confidence, which in turn may have "motivated them to work harder and achieve the greatest strength gains."

Secunda, Blau, McGuire, and Burroughs (1986) studied physical and psychological factors as co-determinants of success in football. It was the authors intent to define the characteristics of successful football players, such that the efficiency and the effectiveness of selection processes might be enhanced. To achieve this end, 19 college players competing for the positions of halfback and fullback were asked to complete a series of physiological and football skills tests, as well as Cattell's Sixteen Personality Factor Questionnaire (16PF). In terms of the psychological test, it was found that aggressiveness and conservatism were the personality constructs which were significantly related to success in these positions. The authors described the desirability of these characteristics as coping mechanisms in the football context, but commented neither on their enduring effects, nor on how players might assume proactive rather than reactive roles in managing the psychological demands associated with playing football at the college level.

Garland and Barry (1988) employed the 16PF, as well as the Leadership Scale for Sports, in an investigation in which 272 football players from three American universities participated. It was found that players who perceived that their coaches used a less autocratic leadership style were more successful. In addition, the scores from the 16PF indicated that, among the players who received the greatest amount of playing time, group-dependence and toughmindedness were the most pervasive traits. Toughmindedness was related to self-confidence, by the authors. It was suggested, without considering cause or effect, that "highly skilled athletes possess more self-confidence than less skilled athletes." Garland and Barry concluded that these findings were

"consistent with Morgan's (1980) position that there is a relationship between athletic performance and personality." However, their observations of the impact of coaching styles illustrated that ensuring optimum football performance may be more complex than simply matching personality traits with position requirements.

Newby and Simpson (1991) stated that "football players who attend the major schools...[among American universities]...are typically bigger, faster, or more skillful than those participating at smaller schools." The results of a study, in which the authors asked 120 nonscholarship football players from a small American university to complete the POMS, indicated that psychological differences also may exist. After comparing scores obtained by LeUnes and Nation (1982) for scholarship players with those of nonscholarship players it was noted that the latter reported greater depression, anger, and fatigue. Mood state profiles of nonscholarship players also varied according to classification (offense or defense) position (offensive linemen, backs, receivers, and defensive linemen, backs, linebackers) and status (varsity or junior varsity). Citing the negative mood of junior varsity players, Newby and Simpson suggested that "success is associated with positive mood." The authors did not conclude, however, that positive mood caused success. Indeed, they observed that the success experienced by the varsity players "may have been due to higher anger," a negative affective mood. This suggested that positive mood among varsity football players may be an effect of success.

Anger, and sports orientation were measured by Greene, Sears, and Clark (1993) in a study which involved 19 varsity (full contact) and 20 intramural (flag football) male, college football players. The State-Trait Anger Expression Inventory was used to measure the subjects tendencies to experience anger, as well as their cognitive, emotional, and behavioral responses to it. The Sports Orientation Questionnaire was employed in order to test the players

competitiveness, goal, and win orientations. In terms of the anger inventory, no differences between groups were found relative to trait-anger predisposition. However, the varsity players expressed less internalized and externalized anger, and less anger control. Their tendency to express less anger in non-football situations was thought to have been a function of having opportunities to "take their anger out on the field." The ability to channel emotion was seen as a key to success in varsity football, in that it allowed the players to focus on task, while avoiding dysfunctional and distracting displays of emotion. In addition, it was found that the varsity players were more competitive and goal-oriented, but not more win-oriented than the intramural players. Goal-orientations among the varsity players were interpreted as indications that they favored the pursuit of individual goals, given that team success was influenced by factors over which they could not exert personal control. Strategies for focusing emotional energy, and setting personal goals were not described.

It is evident that a profile of the "football type," which would serve as a valid aid in the evaluation of football playing potential, has yet to be constructed. Those who were successful in their pursuit of high calibre competition in full contact football were greater in vigor, confidence, anger, and authoritarianism than non-football playing populations. However, the degree to which these traits were apparent seemed to vary according to player classification, position, and status. Also, their presence as cause or effect of playing the sport has yet to be resolved. Additional psychometric analyses with more refined inventories may be required in order to clarify these issues. It has been suggested, however, that personality may "only explain ten to fifteen percent of the athlete's performance, while some fifty to eighty percent is made up of behavioral factors" (Cox, 1994, p.43). Therefore, in order to enhance understandings of the links between psychology and football performance, and to supply practical information to

players, coaches, and administrators of the game, it was preferable to study the mental skills of successful football players.

Mental Skills of Elite Athletes

In order to determine the extent to which various psychological models accounted for the mental skills associated with elite athletes Barbour (1994) reviewed the literature from 1977 to 1992. Interview and self report studies were examined, as were reports based on authors experiences as athletes, coaches, and consultants. This review revealed that over time an increasing number of mental skills were identified, leaving open the possibility that additional skills may yet be defined. Of the 13 models cited, Orlick's (1992) "Model of Human Excellence" appeared to be the most comprehensive. It was the only model which incorporated each of the mental components of excellence which had been identified by different authors. According to Barbour "no other single model was capable of doing this."

The mental skills which comprised Orlick's model were defined after 20 years of work in high performance sport. Seven skills made up the "Wheel of Excellence." Belief and commitment formed the hub of the wheel, acting to "open the door to new possibilities or higher-level goals" (Orlick, 1992). Full focus, positive images, mental readiness, distraction control, and constructive evaluation were the mental skills which constituted the spokes of the wheel, their function being to "translate commitment and belief into action" (Orlick, 1992). The model appeared to be neither a hierarchy of mental skills, nor a mental training guide. Rather it seemed to represent a conceptualization of the complex interactions which may occur between key psychological components of athletic excellence.

Interrelationships between mental components have yet to be clarified, however, the components of the "Wheel of Excellence" have been confirmed in

qualitative studies of high achievers. For instance, in a case study of an Olympic gold medalist, and member of the Women's Canadian Alpine Ski Team, each of the model's elements appeared to have been employed to ensure complete mental readiness (Orlick & Lee-Gartner, 1993). Also, after interviewing 33 active surgeons, McDonald and Orlick (1994) concluded that these individuals sustained a high level of proficiency, in part, through practicing the mental skills contained in Orlick's model. Furthermore, after conducting interviews with 10 National Hockey League players, Barbour (1994) stated that commitment, belief, full focus, positive imagery, mental readiness, distraction control, and constructive evaluation "were common to all subjects." In the latter investigation the model did not account for the element of "fun and enjoyment," which the players indicated was essential to their continued participation in the sport.

Evidently, Orlick's model has been an effective vehicle through which to explore the mental skills employed by exceptional performers. Notably, among the studies which have used the "Wheel of Excellence" as a point of departure none have focused on the sport of football, or on a specific football position. The use of Orlick's model, as a framework for the qualitative analysis of interviews conducted with high calibre football quarterbacks, helped to enhance our understanding of the mental side of the game, and the position.

Mental Skills of Football Players

Citing data related to the rate of injury and death, Stone (1967) observed that American football was "one of the most overtly aggressive games played in civilized society" (p.419). In order to gain an understanding of the motivations underlying participation in the game the author collected objective, as well as clinical data from American, college football players. Based on these analyses he concluded that individuals were driven to succeed in football by needs to resolve the oedipal rivalry, to gain narcissistic satisfaction, in terms of status and

gratification, and to discharge instrumental and/or aggressive behavior. The sole mental skill identified was commitment. It was suggested that "a devotion to the game and to the development of one's body" (Stone, 1967, p.426) was an effect of the increased demands placed on players as they rose through the football ranks. It was implied that high levels of commitment were required of players in each position.

Using a clinical approach, Mandell (1974) distinguished between personality profiles of American, professional football players, who played various positions. According to the author, a precursor to success at the professional level was an appropriate fit between personality traits and position requirements. In his portraits of different "position types," Mandell also illustrated the contribution of mental skills to football performance. For instance, he suggested that commitment was requisite for success at every position. The relative importance of additional mental skills appeared to vary. That is, distraction control seemed to be a key skill for offensive linemen and defensive backs, while self-confidence and focus were critical for quarterbacks. Suggestions were not forthcoming as to how developing players might cultivate such skills.

Kauss (1978) studied 71 football players from a major American university in order to uncover the "behaviors that produced certain attitudes." The analysis of player responses to a self-report questionnaire indicated that football players, in general, played best when they were relaxed, as opposed to "worked up," and focused on task, not outcome. Differences in the mental readying strategies employed by players in various positions were observed. For instance, linemen and linebackers seemed to engage in more preevent "psyching," whereas quarterbacks, running backs, wide receivers, and defensive backs appeared to emphasize "calmness." Kauss' study underlined the differences between players, in terms of the means they employed to ensure mental readiness.

Based on their playing and coaching experiences, Pilkington and Pilkington (1984) prescribed a set of "positive psychology strategies" for kickers in football. The aim was to maximize player performance through the implementation of a series of cognitive techniques, including goal setting, competitive thought processing, positive imagery, and progressive relaxation prior to a kick during a game. The position-specific guidelines offered by the authors seemed to support earlier suggestions that appropriate mental states may vary between positions. However, they appeared to have been based on a single case, and had not been field-tested in a controlled investigation.

In 1987, Fenker and Lambiotte documented how a team mental preparation plan was developed and implemented at a major American university during one football season. Key elements of the program included the development of positive imagery skills, the identification by individuals of the factors which contributed to their optimal performance state, the encouragement of a shift in focus away from outcome and toward the process of playing, and the cultivation of relaxation or centering techniques among the athletes. After enduring a decade of losing seasons the team posted a winning record and, based on player evaluations, the mental training program made a significant contribution to team success. While the program was a success, the authors acknowledged that "it would be valuable to design more individualized programs for different positions."

Ravizza and Osborne (1991) also implemented a team mental preparation plan in a major American university football program. In this case, the purpose for instituting the plan was not to help turn around a losing program, but to help players play consistently at an "elevated level." Pregame strategies were not addressed. Rather, a cognitive-behavioral game focus routine was emphasized. Working on the assumption that players can best manage the distractions

associated with high calibre football by focusing on one-play-at-a-time, the authors utilized three cues, "ready, respond, and refocus," on each play during practices and games. Individualized programs were not constructed for players in different positions, but each athlete was required to participate in educationally based mental skills training prior to program implementation. Program efficacy was not reported, however, the authors noted that several players recognized the carry-over value of program concepts to non-football facets of their lives.

The "Model of Human Excellence" appeared to be one of the most comprehensive psychological models of excellence. It had accounted for the mental preparation strategies of exceptional performers in a number of fields. However, as was shown in Figure 1, a model of the mental skills associated with excellence in football had yet to incorporate all of the skills identified by Orlick (1992).

Orlick (1992) and Quarterbacking Excellence

Included in the following section were the reflections of high profile quarterbacks on the mental aspects of playing the position. These commentaries were drawn from non-scientific sources, such as popular sport journals and player autobiographies. The information in these sources was not the product of controlled research, neither was it subject to rigorous review, nor was it concerned, exclusively, with sport psychology. However, it often featured first hand experiences in managing the psychological dimensions of the game. These reflections were linked with readings in sport psychology in an attempt to assess how Orlick's (1992) model of human excellence accounted for the mental approaches of high profile quarterbacks to training and competition.

Commitment. Full contact football is physically and psychologically challenging. To be competitive at the highest levels demands commitment, or perseverance (Gross, Tiffany & Billingham, 1987). It has been observed that

Orlick (1992)							
	Commitment	Belief	Full Focus	Positive Imagery	Mental Readiness	Distraction Control	Constructive Evaluation
Stone (1967)	Devoted to game						
Mandell (1974)	Self discipline	Self confidence	Poise			Stay calm	
Kauss (1978)			Task focus		Relax or psych		
Pilkington & Pilkington (1984)				Imagine success	Relax	Process thoughts	Goal-setting
Fenker & Lambiotte (1987)			Present centered	Team & personal images	Personal plan	Center or relax	
Ravizza & Osborne (1991)			Present moment		Personal responsibility	Release last play	Reflect, learn, adjust

Figure 1. Orlick (1992) and the mental skills of football players.

successful football players get discouraged less easily, are less afraid of getting hurt, and are more convinced that sports build character (Templer & Daus, 1979).

These qualities may be a reflection of the desire to actualize personal potential.

Terry Bradshaw, a highly successful N.F.L. quarterback, demonstrated this drive in a discussion of his goals.

I was determined to be a quarterback. I wanted that glory position, that glamour position. I wanted to be in charge out on the field--to do something important on every play. Quarterback was the dream position and I wanted to play it (Bradshaw & Conn, 1973, p.24).

It has been suggested that higher levels of commitment to the pursuit of

personally meaningful training and competition goals may lead to higher levels of performance (Lynch, 1984; Orlick, 1992).

Belief. Extraordinary belief in their own abilities, as well as those of their teammates, may be a prerequisite for success as a quarterback. Quarterbacks are required to act as leaders, on the field, through the execution of tactics which implement offensive strategies. Top quarterbacks believe strongly in their abilities to make correct on-field decisions. John Unitas, who is ranked among the best professional quarterbacks, articulated this quality as follows.

You can't run a football game by having the committee meet and take a vote. Somebody has got to be the man who says what to do, and it had better be the quarterback...no coach on the sidelines can do as good a job of calling a game as a quarterback who sees what's going on out there and knows how to take advantage of it (Unitas & Fitzgerald, 1965, p.34).

The bristling tone of Unitas' comments conveys the personal conviction which may be demanded of quarterbacks. Such self confidence may be rooted in either "natural arrogance, or assurance from on high" (Mandell, 1974). No matter the source, according to Cox (1994) "athletes who are self-confident and expecting to succeed are generally the same athletes who do succeed" (p.219).

Full focus. To obtain positive performance outcomes athletes "must attend to the appropriate focal points that will fine-tune or lock in his or her concentration" (Ravizza, 1986, p.149). For instance, in football, "the quarterback must selectively attend to his receivers, while gating out...[ignoring irrelevant stimuli]...the sights and sounds of the huge defensive linemen who are lunging at him" (Cox, 1994, p.66). Former San Francisco 49'ers (N.F.L.) quarterback John Brodie described this process.

I experience a kind of clarity that I've never seen adequately described in a football story. Sometimes, for example, time seems to slow way down, in

an uncanny way, as if everyone were moving in slow motion. It seems as if I have all the time in the world to watch the receivers run their patterns, and yet I know the defensive line is coming at me as fast as ever. I know perfectly well how hard and fast those guys are coming and yet the whole thing seems like a movie or a dance in slow motion. It's beautiful (Brodie & Murphy, 1974, p.94).

In attempting to complete a pass a quarterback may attend to certain stimuli, however, that which is considered "relevant information" may vary throughout a football game. For example, Cox (1994, p.83) outlined how the attentional focus of a quarterback may shift from broad, as the quarterback "reads" the defense, to narrow, when the decision is made as to whom to throw the ball. This level of involvement with a performance may be indicative of that which Orlick (1992) referred to as being in the "zone."

Positive images. After summarizing research on the effects of imagery on motor skill acquisition Hall, Buckolz, and Fishburne (1992) concluded that imagery may be beneficial to both novice and accomplished athletes. The benefits of repeatedly visualizing flawless performances may be realized as a result of establishing "neural patterns in your brain, just as if your body had done the activity" (Porter & Foster, 1990, p.17). Accordingly, positive imagery may be incorporated in the preparation processes of quarterbacks. Veteran N.F.L. quarterback Earl Morrall described a visualization practice handed down from Clark Shaughnessy, a pioneer of offensive football strategies.

I lie in bed the night before and play the entire game...imagine situation after situation and supply the solution. It's a good exercise if you have the right sort of imagination--I mean if you imagined yourself *dropped* every time you wouldn't be in the best frame of mind the next day (Plimpton, 1966, p.178).

Porter and Foster (1990) also outlined visualizations for quarterbacks. Their guidelines incorporated a strong affective component, but lacked technical detail. That is, to link imagery with performance may require of quarterbacks that they tie together knowledge and motorsensory skills, by combining the use of film and videotape with physical practice (Musick, 1979). In so doing they may effectively create positive feelings about their capacity to perform at higher levels of competition.

Mental readiness. Syer and Connolly (1989) referred to preperformance psychological preparation as an "attunement" process. This process was comprised of mental preparation, or concentrating on task, as well as emotional preparation, or getting in the correct mood. In order to create the appropriate psychological climate quarterbacks may have to develop and refine mental plans which outline what they want to accomplish, focus on, and feel before and during practices and games.

Experienced quarterbacks recognized that preparation for competition started during the week of practice preceding a game and continued to the moment when the game began. Preparation time was divided between tactical meetings with coaches, physical practice, and mental training (National Football League, 1985). Positive personal orientations towards quality training may have aided efforts to enhance mental readiness. Terry Bradshaw, for instance, recounted how practices were more productive when the following procedure was observed.

I concentrated on getting up every day with my mind on exactly how I wanted to call signals, set up to throw, release the ball and all the little things that a quarterback does on the field (Bradshaw & Conn, 1973, p.135).

By adopting such orientations toward practice, quarterbacks may have more readily accomplished some of the objectives of training, such as the assimilation of strategic game plans. Learning the plan of attack in itself may not have secured

favourable performance outcomes. To increase the chances that they were in a frame of mind to execute, effectively, quarterbacks also may have employed structured, game-day mental preparation routines.

A proactive approach appears to have been applied to game-day mental preparation routines. Barnard (1981) for example, mapped the sequence of events entailed in the pre-game plan of Ron Jaworski, then the quarterback of the Philadelphia Eagles (N.F.L.). According to the author, Jaworski was in the team dressing room two hours before game time, studying his playbook. After 30 minutes of review he began to put on his equipment and in the process had a brief conversation with the head coach which was centred on tactics. In the next stage Jaworski used a pocket recorder with an earphone for further review of the game plan for the day. Putting away the plan, Jaworski then engaged in a "quiz" with his back-up. This drill consisted of the back-up presenting first of all, a variety of tactical problems and secondly, a series of hand signals, with Jaworski supplying solutions to the puzzles and interpretations of each signal (name and number of the play).

Following these exercises Jaworski and the rest of the team participated in a 45 minute, on-field warm-up which helped to "drive away the butterflies, but only temporarily" (Barnard, 1981). In the 15 minutes immediately preceding the game Jaworski visualized how the opposition would cover his receivers, put the importance of the game in perspective by looking at pictures of his wife and family, took part in a team prayer, and listened to the coach's pre-game address. The game itself was the culmination of a week of preparation, however, for Jaworski each game represented the "sum total of all the games he ever played" (Barnard, 1981) in that he could bring to bear in each game the knowledge and experience which he had accumulated through years of competition.

Game focus plans documented how an opponent's weaknesses were to be

exploited. Opinion was divided, however, regarding their importance (National Football League, 1985; Stevenson, 1980; Tarkenton, 1974). Nonetheless, at some point in their development, some quarterbacks may have found it advantageous to work with a game plan in which the field of play was broken down into zones, each of which had a distinct performance imperative (National Football League, 1985).

Distraction control. The ability to selectively attend to relevant information has been described as the "single most important cognitive characteristic of the successful athlete" (Cox, 1994, p.67). However, numerous potential distractions, which threaten to undermine self-confidence and focus, hover on the periphery of the quarterback's conscious. Witness the following challenge, which was presented to former N.F.L. quarterback Fran Tarkenton, by a sports journalist.

Tarkenton, they say you can't throw, they say your legs are giving out, they say your wife is going to leave you, your kids don't like you, and you can't win. What do you have to say to that? (Klobuchar & Tarkenton, 1976, p.119).

It has been suggested, when confronted with distractions, such as publicity, performance errors, coaches yelling, or negative self-talk, that the athlete make a conscious effort to "redirect your energy positively toward your goal" (Meyer and Plodzien, 1988, p.58). According to Suinn (1986) this may be accomplished through positive thought control, or the use of negative thoughts to "trigger a positive and corrective action" (p.19). Capacities for managing frustrations may have had an impact upon the quality and consistency of quarterback play.

Constructive evaluation. Learning may be reflected in changes in behaviour which may have occurred, in part, as a result of experience. According to Williams (1986) such learning in sport was facilitated by goal setting and journal

keeping. In this process, goals and the strategies by which they might be achieved were recorded in a journal, as were the athlete's daily assessments of progress toward goal attainment. It has been suggested that such self-monitoring may have contributed to a greater awareness of personal strengths and weaknesses, as well as self-control (Ravizza, 1986).

Personal performance feedback records may have helped athletes reach an edge, where components are "balanced appropriately and performance is maximized" (Ravizza, 1986, p.154). According to Williams (1986) "there is also merit in having someone else observe and evaluate your behavior" (p.319). Joe Theismann, a successful N.F.L. and C.F.L. quarterback, documented how the constructive, performance related criticism of a coach helped him to become "the only quarterback I could become. Me" (Theismann & Kindred, 1987, p.82). There was little evidence in the non-scientific literature, however, which suggested that quarterbacks engaged in structured, post-performance, constructive, self-evaluations. That is, personal reflections by some exceptional quarterbacks on their playing experiences suggested the importance of mental skills, including commitment, belief, full focus, positive imagery, mental readiness, and distraction control. Less apparent was the role of constructive evaluation.

Method

Instrumentation

In order to develop an understanding of the complexities of the mental preparation strategies employed by high performance quarterbacks the interview format was chosen. This qualitative study was neither naturalistic, as described by Hanson and Newburg (1992) nor interpretational, as explained by Coté, Salmela, Baria and Russell (1993). Rather, a structural approach was taken, based on the components of Orlick's "Model of Human Excellence," and the task

of the researcher was to "retrieve and make sense of that information throughout the data by working with a set of relationships whose nature is well established" (Coté, Salmela, Baria & Russell, 1993). To accomplish this end the "Football Interview Guide" was developed (Appendix A). The guide was based on the Partington and Orlick (1986) Athlete Interview Guide, and contained open-ended questions that allowed the subjects to describe their mental skills.

To initiate their interviews, Partington and Orlick (1986) started with, "When you 'got to the line' (or appropriate phrase) were you ready? (p.102)" In the current study the question was modified to read, "When the whistle blows at the start of the game are you ready to play?" In addition, below their initial question, Partington and Orlick (1986) wrote as potential probing questions, "If not ready, what was missing? What might have helped? What would you have done if you could have done something differently?" (p.102). It was decided that these would be included as core questions in the "Football Interview Guide," due to the ambivalent responses of pilot subjects to the initial question. As a result of such modifications, where the "Athlete Interview Guide" contained 12 core questions, the "Football Interview Guide" included 15. Additional questions, not written in the guide, were occasionally presented to subjects in order to obtain a more detailed explanation of a topic area.

Use of the guide was intended to allow for topics to be treated in a similar fashion, in the same order, with each subject. However, flexibility was required of the researcher when a subject was unable to answer a question when it was asked, in which case it was restated then, or later in the interview. Similarly, if in responding to a certain question a subject partially or fully answered another question, the latter question was dropped, or the order of questioning was changed. This approach was thought to be best suited to answering the research question.

Procedure

In order to prepare for the interviews with the subjects involved in this investigation, the researcher conducted and analyzed pilot interviews with two professional football players. These interviews demonstrated that, given some minor adjustments, the interview guide was an effective instrument to elicit detailed responses, and reinforced the researcher's confidence in the interview technique.

Interviews were arranged in three different ways. In one instance, acting upon a request made by the researcher, a personal acquaintance, who also was a professional football player, initiated contact with a professional quarterback. A telephone call from the researcher followed and a date, time, and place for the interview was confirmed.

A second means through which interviews were arranged involved the use of an information package. This package was forwarded to coaches of Canadian university football teams and communications directors of Canadian professional football teams. It contained a Letter of Information and Informed Consent Form (Appendix B) and a copy of the Football Interview Guide. The coaches and communications directors acted as intermediaries at this stage by informing the quarterbacks on their team that the study was being conducted. In turn, the quarterbacks informed these individuals as to their willingness to participate in the study. Interviews with two professionals, and seven university quarterbacks were arranged via this method.

In the third method potential subjects were contacted directly by the researcher, either in person, or by telephone. From among the individuals approached, two agreed to take part in an interview.

Quarterbacks who were willing to participate in the study were contacted either by telephone, or in person, in order to arrange a convenient time and

location for the interview. During these conversations it was made clear that they could refuse to answer any question and/or withdraw at any point without any penalty of any kind. In addition, it was pointed out that their results would remain strictly confidential, that their names would not be used in the presentation of results, and that the interview tapes would be destroyed upon the completion of the study.

Of the 12 interviews, 5 were conducted in person. These interviews ranged from 45 minutes to 1 hour in length. They were conducted at two locations: two professional quarterbacks were interviewed at their team clubhouse; three university quarterbacks were interviewed in the office of the private fitness centre at which they trained. The remaining seven interviews were conducted over the telephone, and lasted from 30 minutes to 90 minutes. No differences were noted in the quality of the interviews conducted in person, versus those completed by telephone.

Each interview was tape recorded in its entirety and later transcribed, verbatim. Two copies of the transcript were forwarded to the interviewees. Subjects were instructed to make changes in the text if they felt anything was not accurate and return it to the researcher. This was to represent the subject's validation of the content of the transcript. No written transcripts were returned, however, verbal confirmation of the accuracy of transcripts was received from four subjects.

Several measures were invoked in order to control potential interviewer bias in asking questions and eliciting responses. The "Football Interview Guide" allowed for all topics to be "treated in a standard way and in a particular order" (Orlick & Partington, 1988). Pilot interviews were conducted for the purposes of obtaining feedback regarding the interview guide and the interview process. Furthermore, the interview transcripts were reviewed by a second researcher who

ensured that the investigator complied with the interview guide and that the subjects were encouraged to clearly describe their experiences. Finally, the interview transcripts were returned to the subjects, such that they might review and validate them.

Subjects

Twelve individuals who had played the position of football quarterback in the Canadian Interuniversity Athletic Union (n=9) or the Canadian Football League (n=3) participated in the study. Each of the subjects decided, independently, to accept the invitation to take part in the investigation. That is, they were not systematically identified and selected by the researcher.

It was assumed that quarterbacks with experience in high calibre football "possess certain characteristics that are considered unique"(Hanson & Newburg, 1992). Participants in the current investigation satisfied this criteria in that, collectively, their experience in high performance football totalled 57 years. Their experiences included hundreds of football games and the execution of thousands of plays in a variety competitive situations.

All of the amateur subjects had earned recognition as a top performer at their high school. Each was recruited to play the quarterback position for a Canadian university football team. Two of these individuals distinguished themselves as the most valuable player in Canadian university football. Six of the nine university quarterbacks who took part in this investigation played for teams that participated in the Vanier Cup game.

Furthermore, one of the professionals had played in the Canadian Football League for 12 years. He appeared in eight Grey Cup games, winning five, and was once chosen as the league's most valuable player. A second professional subject also had made repeated appearances in the Grey Cup, and on two occasions was selected the game's most valuable player. The third professional

was a CFL rookie with impressive collegiate credentials, including an NCAA record for total yards produced by an offensive player.

Data Analysis

A large pool of data was collected in the process of conducting interviews with the 12 subjects. Two sub-sets of data were created: (1) university quarterbacks (n=9); and (2) professional quarterbacks (n=3). Data from the professionals was not included in the analysis of whether Orlick's (1992) model accounted for the mental strategies of quarterbacks, given the small sample. However, their mental skills were of a noticeably higher quality. This being the case, representative quotes from these subjects were included in the presentation of results.

The structural analysis of the data involved two stages. First, responses were grouped into seven broad categories. These categories were comprised of the seven components of the "Model of Human Excellence." Operational definitions used to differentiate between components were derived from Orlick's (1992) discussion of the model (Table 1). Each component was assigned a colour code and, while reading transcripts, the terms used by subjects which reflected the various categories were underlined and labelled.

A more detailed examination of each category also was carried out. A checklist of sub-components for each mental quality and skill was created, based on Orlick's (1992) original descriptions. Originally, 60 sub-components were proposed. After meeting with Orlick the list was reduced to 46 relevant sub-components. A subsequent meeting between the investigator, Orlick, and two more experienced researchers in sport psychology produced a list of 44 items. Sub-components of each category were analyzed item-by-item. Original colour codes were maintained. Next to a category label the name of a sub-component was written. The number of sub-components identified was thought to be a

Table 1

Operational Definitions of the Components of the "Model of Human Excellence"

1. Commitment: The willingness to do what is within one's capabilities in training and in competition in order to achieve group goals and/or personal goals.
 2. Belief: Confidence in one's ability to reach goals and/or perform to potential.
 3. Full Focus: Total concentration or total connection with the task even in the face of potential distractions.
 4. Positive Images: Visualizing and/or feeling the flawless execution of performance skills in one's mind and/or body, for example, in practice and competition situations.
 5. Mental Readiness: A state of mind which allows athletes to practice and compete effectively.
 6. Distraction Control: The ability to maintain or regain an effective task orientation when faced with potential distractions.
 7. Constructive Evaluation: Systematically assessing what went well while training, or competing, identifying what needs refinement, and acting on these lessons.
-

possible indication of the degree of development of a given category and, in turn, of overall strengths and weaknesses in mental strategies.

Interviews transcripts were read, thoroughly, several times and coded by the researcher. The data also was analyzed by a second researcher, who had over 20 years of experience in elite sport. Upon completing each stage of the analysis a frequency count was conducted to determine which of the categories, or sub-components were evident in the transcripts. Inter-rater agreement with respect to the existence or non-existence of each of the seven categories was 94%.

Following structural analysis, the remaining data was searched for elements for which the "Model of Human Excellence" could not account. This entailed the process of interpretational qualitative analysis described by Coté, Salmela, Baria and Rusell (1993). Meaning units were sought which could then be tagged and assembled into categories. Religious spiritualism was the only theme that emerged which stood outside the model. Some of the professional quarterbacks spoke about the importance of their faith, but the amateurs did not. As was noted above, data from the professionals was not included in the analysis of the question as to whether the model accounted for the mental strategies of quarterbacks. Hence, in the current investigation, a new category was not created for religious spiritualism.

Results and Discussion

The question as to whether Orlick's (1992) model accounted for the mental strategies of football quarterbacks was considered in terms of the number of subjects, from among the university quarterbacks, who talked about its seven components. Raw numbers recorded in the frequency counts were supported with quotations drawn from the interview transcripts of the university quarterbacks. To these were added quotes from the professionals, who were more advanced, in terms of playing experience and the use of mental skills.

Orlick (1992) and the Mental Skills of Football Quarterbacks

Orlick (1992) described seven mental skills that were associated with elite athletes. It is apparent from an inspection of Table 2 that five of those skills, including commitment, belief, full focus, mental readiness, and distraction control were present for all of the university quarterbacks. Positive imagery was utilized by 6 subjects, while constructive evaluation was included in the mental strategies of 8 of the 9 subjects.

Given the relatively low number of subjects who described using positive

Table 2

Mental Components used by University Quarterbacks

	<u>University Quarterbacks Who Used Component</u>
Commitment	9
Belief	9
Full Focus	9
Positive Images	6
Mental Readiness	9
Distraction Control	9
Constructive Evaluation	8

imagery it was speculated that it was not an important mental skill to some university quarterbacks, or its utility was unknown. In addition, it was evident in the data that the university players, in general, had less well developed imagery skills than the professionals. This observation raised the question as to whether enhanced mental imagery was a cause or an effect of success at higher levels of competition.

Commitment. According to Stone (1967) to satisfy certain motives, football players became increasingly devoted to the game at successively higher levels of competition. Evidence of their devotion was witnessed in the quality of training and competitive performances. Orlick's (1992) definition of commitment entailed nine specific elements. The sub-components of commitment, as well as the other components of the "Model of Human Excellence," were presented in Table 3.

In keeping with the findings of earlier studies (Barbour, 1994; McDonald & Orlick, 1994) subjects in the current study were highly committed. All of the subjects indicated that they were "Committed to Excel, " and "Committed to do

Table 3

Mental Skill Sub-Components Evident in University Quarterbacks

<u>Skill and Sub-Components:</u>	<u>Subjects*:</u>	<u>Skill and Sub-Components:</u>	<u>Subjects:</u>
1. <u>Commitment:</u>		4. <u>Positive Images:</u>	
Committed to Excel	9	To Feel Flawless Execution	3
Pursues Daily Goals	5	To Create Positive Feelings	2
Develops Mental Links	7	To Enhance Confidence	1
Does Everything to Excel	9	To Perform to Capacity	0
Makes Contribution to Team	8	To Imagine Being in Control	0
Allows Time for Regeneration	5	To Recall/Refine Technical Skills	5
Plays for Meaningful Reason	6	To Create/Sharpen Focus	6
Football is Focal Point of Life	8	To Regain Self-Control	0
Committed to Self-Acceptance	7		
2. <u>Belief:</u>		5. <u>Mental Readiness:</u>	
Relief in Meaningfulness of Pursuit	4	Uses Learning Opportunities	8
Believes Goal Attainment Possible	8	Develops Required Skills	9
Belief in Teammates/Coach	5	Uses a Training Plan	8
Others Believe in You	8	Uses a Pregame Plan	9
Thinking You Can Do It	2	Uses a Game Focus Plan	9
Acting Like You Can Do It	1	Relaxes Away From Team	7
Believing You Can Do It	0		
Knowing You Can Do It	3		
3. <u>Full Focus:</u>		6. <u>Distraction Control:</u>	
Plays(ed) in the "Zone"	9	Maintains Focus	8
Trusts Mind & Body to Perform	9	Regains Focus if Distracted	7
Takes Mental Breaks	8	Knows What Can Control	9
Attends to Relevant Cues	9	Identifies Distractors	9
		7. <u>Constructive Evaluation:</u>	
		Analyzes What Went Well	3
		Knows What to Refine	6
		Draws Lessons from Performance	8
		Acts Upon Lesson Learned	7
		Assesses Role of Mental Approach	3

Note: * Represents the number of subjects for whom this sub-component was evident.

Everything to Excel." This was apparent more so in the comments that were made concerning physical conditioning habits, than in those pertaining to mental training.

Q1: When I don't feel like training I just think about the quarterback spot. I want

to be the starting quarterback and if the second stringer is working out, and I'm not, I feel as if he's getting one up on me.

Q2: To train in the off-season was more of a habit than anything else. Sure, there were days when it was hard to do it. But after it was over I was glad I did it. I just knew it was to my benefit to do it. Being in the best possible shape gave me a mental edge. I felt I was in better control, mentally and physically.

Physical training appeared to represent a tangible route to goal attainment although, in contrast to the findings of Greene, Sears, and Clark (1993) who found evidence of goal-orientations among American college football players, the subjects in the current investigation seemed ambivalent about setting personal performance goals. Only 5 subjects spoke about pursuing goals, and within this sub-group the perceived importance of goals fell on a continuum from unimportant to extremely important. The divergent opinions of the subjects on the topic of goal-setting were reflected in the following quotes.

Q6: I don't really understand goals. I think you want to do well. You want to win. You want to play your best. In terms of specific goals, they're nice to have, but college football is so short--you get hurt in the first game and your goals go out the window. I think just to play up to what people expect is my goal.

Q8: I guess the immediate goal would be to become the starting quarterback. Other than that its to contribute as much as I can to the team in a leadership role, or any other role that I can. The main thing is to keep on working hard and whatever happens, happens.

Q4: I think I was able to push myself just by looking at goals. Being goal-oriented. Not only long-term goals, but short-term goals that were attainable and measurable. If I was training in the middle of July and it was ninety-

plus degrees, I'd have a goal for that particular day. I was somewhat goal-oriented.

In the following excerpt the most experienced professional quarterback interviewed described how he resolved his concerns over the goal-setting process.

P2: If you set the goal too low, it's too easy to make it. If you set the goal too high the sub-conscious can be sitting back saying, "Wait a minute. You know this is unreachable!" Because of that my goal would just be to be the Grey Cup champs, or to be the best I can be during that year...every day.

The ambivalence about the use of goals within the sample may have been a result of the failure on the part of some of the subjects to understand the link between the pursuit of short-term goals and the accomplishment of long-term dreams, as outlined by Biasiotto (1994).

Overall the findings suggest that this group of elite quarterbacks was committed to actualizing their performance potential. However, on certain sub-components of commitment, such as the pursuit of daily goals, there appeared to be room for improvement.

Belief. Greater self-confidence among college football players was associated with enhanced technical skills (Garland & Barry, 1988) and physical strength (Brone & Reznikoff, 1989). Orlick (1992) described eight psychological factors which influence confidence. One of these factors, confidence instilled by others, was the most important source of self-confidence for 8 of the 9 subjects.

Q8: I was encouraged to keep up with it and do a good job. When they show confidence in you it helps you build confidence.

Q4: It was also confidence bestowed upon me by my coaches. They made me believe that I was good. I think that was a big part of it...[self-confidence].

Q3: I found that without that person...[the offensive coordinator]...showing

confidence in you, or in your ability, that it was difficult for you to be confident in yourself.

These comments appeared to be indicative of the first of four stages in the development of belief, as described by Orlick (1992). Furthermore, the subjects descriptions of this stage seemed to agree, in part, with the results of locus of control research conducted within the population of college football players, which demonstrated the influence which powerful others, such as coaches, had in the players lives (LeUnes and Nation, 1982).

None of the CFL quarterbacks expressed a current need to feel as though others believed in them. Rather, in keeping with Mandell's (1974) observations, their belief in themselves was founded within themselves, and for one player in religious spiritualism

P1: A lot of it...[performing well]...is just having confidence in yourself. I have a lot...[of confidence]...in myself, what I can do on the football field, and what I can do to help our ball club.

P2: Earlier in my career when I'd say, "We're going to win this game," I'd stop and say, "Now wait a minute. Why are we going to be able to win it?" As I was saying it, "We can really win this game," something would be saying, "Screw you!" After winning a Grey Cup we'd gotten over that hurdle. My sub-conscious was feeling the same as my conscious mind. Now my sub-conscious knew we were going to win, as well as my conscious mind.

P3: Somebody who is in a higher authority than I am controls what happens. You know, all my blessings go to God. I don't think there are other powers that help you perform better or worse.

Planning for mental readiness seemed to be utilized most frequently by the university quarterbacks as a personal technique for developing or maintaining confidence. Plans for training, pregame plans, and game focus plans appeared to

help them enhance their confidence in themselves.

Q4: Try to be short-term goal oriented. For example, the next practice in pass skeleton try to be 80% to 85% proficient. Get confidence in just one pass, for example, in practice. Try to get it back. Not waiting for the next game. Try to get it...[self-confidence]...back that day.

Q5: If I'm not ready in the beginning its because my warm-up wasn't that good. Probably a lack of confidence during the warm-up. So I would relax a little more. If I threw a couple of bad ones, I wouldn't let that bother further throws. Maybe I would step away and let the other quarterback go in. Then think about it and relax. Maybe take a few breaths.

Q3: Number one...[on the field during a series]...I would be considering what I was comfortable with, or able to do. That was most important. If I wasn't comfortable with a play chances are I'm not going to perform it well. So, I would look at the situation, then think of a couple of plays that would work. They were always plays that I was confident in. I would rarely call a play that I didn't feel confident that I could do.

Various cues mentioned in the interviews, such as, "follow through", "stay calm", "stay relaxed", "look at the defense more", "don't try to be the hero", "find something you're doing well", "believe in yourself", "you've been here before and come back", and "I can do this" seemed to be used not only as reminders of what to focus on, but also to boost self confidence.

Full focus. Full focus involves totally connecting with a performance. Ravizza and Osborne (1991) referred to this as peak performance and characterized it as a state of "harmony, total involvement, relaxed concentration, and total confidence." According to the authors it was a "nonvoluntary state, that is, you cannot make it happen; you can only set the conditions that make it more likely to occur." All of the subjects described full focus in terms of their ability to

play in the "zone," or to trust the mind and body to perform in the manner in which they had been trained, and to attend to relevant cues.

Thoughts and feelings experienced while immersed in a high quality performance zone, which were consistent with Nideffer's (1976) description of the ideal focus for quarterbacks, were articulated by a university quarterback, and a professional quarterback, as follows.

Q6: You're seeing everything. You're not worried about failure. You're confident. You go in the huddle and you exude confidence when you talk to people. You know what's going to happen and you're not worried about anything going wrong. You see everything well and you have nothing in your mind, really. It sounds funny, but you don't have any doubts in your mind.

P2: It's a game that's kind of like slow motion. Those are the games where everything goes well. Your preparation and everything was good. The defense was doing what you expected. You threw a hook over the middle and the guy would be wide open. It looked like you could blow the ball there and it would get there before anybody could get there. Those would happen sometimes and the better your team the more often it will happen.

It appeared that thorough, advance preparation facilitated their realization of this state of mind. These preparations involved working not only on the practice field, but also in the film room looking for the cues which, during a game, would signify an opponent's defensive strategies. This relationship was reported by Christina, Barresi, and Shaffner (1990) and was referred to by one subject as follows.

Q5: In films we look for a certain rotation of the secondary. Our key reads are usually the safeties. If we know where the safety is going in a certain spot, then that tells us where we should throw the ball. If you watch certain spots,

then you see how it happens, and things open up, exactly like the coach tells you.

The nature of the game of football is that there are frequent breaks separating periods of intense action. Focus on the field also appeared to involve the readiness of subjects to take mental breaks, without being concerned that they would lose their best game focus. Of the 8 subjects who mentioned their ability to do this one described it as follows.

Q6: If I'm not caught up in the strategy I'll sit on the bench. You know, talk about the weather. Try to get my mind off the game. Try to relax. Get my mind off any tension.

Such an ability may have helped these individuals to sustain the high level of activation and the intense focus which is demanded in the heat of the competitive moment.

Positive images. Positive images may be used by athletes for a number of reasons prior to and/or during training and competitions. Imagery was employed by 5 of the subjects to recall and refine technical skills, and by 6 subjects to create and/or sharpen quality focus. Few, if any of the subjects utilized imagery for any of the other six purposes outlined by Orlick (1992). However, their imagery content was consistent with the recommendation made by Hall, Buckolz, and Fishburne (1992) that athletes imagine skills in the manner in which they wish to perform them. One subject described the process as follows.

Q5: When I'm visualizing I go right through my footwork to where I'm supposed to deliver the ball. Go through my throwing technique. Then watch the ball go until the receiver has caught it. Usually, I'm not even aware it there are defenders there or not. I'm concentrating on getting the ball to the receiver.

Members of the sample demonstrated a technical emphasis in their use of positive

imagery. There was little or no mention of its utility as a means of maintaining affective control, as described by Porter and Foster (1990). According to one of the professionals the probability was high that some of the circumstances visualized prior to a game would unfold during the game. In the event that this occurred it appeared to lead to a sense of *déjà vu* and, in turn, confidence and control, as a result of having preexperienced success in the situation.

Professional quarterbacks appeared to use positive imagery for a wider variety of purposes, and all of them had high quality images. As is evident in the quotations below, they used this mental skill not only to refine and feel the flawless execution of technical skills, but also to create positive feelings about their abilities, and to enhance feelings of confidence, readiness and self-control.

P1: What I would see is actually doing the play. You know, see myself on the twenty...[yard line]...in the huddle, breaking the huddle. I see all of that. Going through the steps. I see the whole picture. I can visualize me coming out of the huddle, going through the cadence and rolling out to my right, seeing the guy...[the receiver]...and me throwing the ball. I see myself going through that play and I never see myself messing up the play. I always see myself making the play successful.

P2: You could see yourself sitting there, waiting to the last minute, then spinning around. Then, as you're wheeling, you see the flow. That's what you're looking for from the defense. You see your receiver and out of your peripheral vision you see somebody coming. If they're behind him, coming with him, then you go ahead and throw the ball. If they're in the area that he's coming to, now you've got to look and see if you're going to do it before the guy gets there, or after.

Images from an internal perspective, such as those described above, were predominant among the professional quarterbacks and appeared to help them to

focus on performing.

Although imagery was one of the mental skills which was most familiar to the university quarterbacks it is apparent that it was used in a limited way. Those who employed imagery tended to incorporate it only in their game day activities to review technical execution and game strategies, and not with the same depth or precision as the professional quarterbacks.

Mental readiness. Mental readiness is a state of mind which is centered on helping athletes perform well on a more consistent basis. Various studies of the affective mood states of college football players indicated that the appropriate frame of mind for high caliber football players seemed to vary with position. University quarterbacks involved in this investigation had developed preperformance routines similar to the "attunement" process described by Syer and Connolly (1989). In most cases pregame plans included a sequence of activities. These activities started after the final practice session prior to the game, and continued to the kick-off. Providing themselves with appropriate nutrition, getting adequate rest, and directing their energies and attention toward peak performance were primary concerns.

Q2: I would go home Friday night...[the night before the game]...and not do anything, not talk to anybody--just keep to myself. Get up in the morning and not get into heavy conversations with anybody. Eat a good breakfast then play some music. I would arrive at the field two, to two-and-a-half-hours before kick-off. I wasn't involved in a lot of taping, but I had my own rituals for getting dressed. Get the pads in the pants, get the pants on, get the shoes on, then sit around and wait. I wouldn't get my shoulder pads on until just prior to going out. [Then]...I would make sure that I had a good stretch and warm-up. I wouldn't want to be talking to any specific player about what we were going to do that day, or anything like that. I'd just start

gathering my thoughts.

Q4: There were times, for example, game day, when some people were there early getting ready for the game. I'd show up at the last minute, just having spent the entire morning watching cartoons. Game day I just got away from it totally.

Preperformance routines of this type seemed to support the findings of Kaus (1978) who suggested that quarterbacks favored "calmness" in their mental approaches.

Where the university quarterbacks indicated an awareness of their game day needs, the professionals demonstrated an in-depth knowledge of the mental preparation that was required during the week leading up to a game. That is, keys to the successful implementation of game plans tended to be developed during film studies of upcoming opponents, as described by one professional.

P1: You look at every first-and-ten that they run and you write down the coverages. After a while a coverage is going to come up a lot. Chart every second-and-long play and you find out what they like to play on second-and-long. That's how you find tendencies.

Finding trends in a defense helped them determine which offensive play to call in a given situation. Effective implementation of those plays hinged upon their ability to "read" the defense. That is, they looked for cues in the behaviour of individual defenders that would confirm whether the defensive unit was acting in accordance with established patterns. Preparing themselves mentally for multiple defensive schemes, a variety of playing styles of defenders, and to be adaptable to "reads" was a big part of their sense of mental readiness for the game.

Distraction control. Effective distraction control is a factor related to consistent level of play. Like the surgeons involved in the study conducted by McDonald and Orlick (1994) in general, the university quarterbacks involved in

this study were "well versed at maintaining a constructive focus during high action periods...[but]...they were not as effective at maintaining a positive focus when faced with...distractions." That is, all 9 of the subjects indicated that they were able to identify what was within personal control, as well as potential distractors. Seven subjects described a capacity for regaining an effective focus when distracted.

Quarterbacks who participated in this investigation proved to be a rich source of information pertaining to potential distractors. They mentioned physical distractions, such as injuries and physical limitations, which were similar to those reported by several authors (Barbieri, 1975; Hayes, 1977; Verdi, 1993; Woodley, 1976) as well as external and internal distractors. External distractors included the behaviour of teammates prior to and during a game. For instance, the possibility that teammates would be acting out anxiety or aggression before a contest seemed to influence the subjects' pregame mental state. Performance errors during games, such as missed assignments and/or negative input from other team members also were pin-pointed as possible causes of lost concentration.

The quarterback-coach relationship also was identified as a potential external distraction. In one instance, a verbal confrontation between one of the university quarterbacks and his coach shattered the player's game focus. In the case of one of the professionals, a coaching decision concerning personnel, which was made immediately before a championship game, effectively removed the meaning which one subject attached to competing.

Verbal and physical antics of opponents also were referred to as external distractors by the university quarterbacks. Verbal challenges and/or put-downs aimed at the subjects by some of their opponents were recognized as attempts at psychological intimidation. A similar effect may have been sought through

attempts at physical intimidation. Here the assumption may have been that a competitive advantage would be gained by instilling physical fear.

If the subjects labelled external factors as being threatening in some way, then it appeared that those elements became distractions that adversely effected performance. An example was provided when one of the quarterbacks described his first game at the university level.

I remember walking up to the centre and seeing guys running all over the field. I didn't know what they were doing. My eyes just got really big. I was just looking around going, "What is going on?" I'd be happy just to hand the ball off, or to do something right. Then when it came to passing the ball, I'd just throw. I wouldn't even know where I was throwing. I was looking at the other team and going, "Look at the size of those guys!" I was just saying, "I don't want that guy coming anywhere near me!"

It was apparent, in this example, that irrelevant stimuli were not gated out and that the individual's perceptions of the situation had an adverse effect on his performance.

Emotional reactions to exceptional circumstances, such as the sudden, tragic death of a teammate, which was cited by one of the subjects, were extremely difficult to manage. Such events, understandably, diverted attention away from the demands of a game.

The 7 subjects who made a conscious effort to regain control when distracted during games indicated that refocusing strategies were implemented primarily for the purpose of controlling reactions to both ineffective and effective play.

Q1: When something goes wrong, just put it behind you. There's no use in dwelling on something that happened in the past. Put behind everything that happened that's bad or good. You have to be focused on what's going to happen ahead of you not behind you.

A slightly more proactive approach was taken by one of the professional quarterbacks.

P2: What I tried to do is to get a favourite drop-back...[pass play]. One that you read well. A roll-out...[pass play]...same way. A running play. A play action... [pass-play]. I liked to have one of each of those four. And the more you played, when it became fast motion, the quicker you could say, "Hey, wait a minute. I've got to grab one of these plays and slow this down." Even if you didn't make the play work. You might not complete the pass. But you read it right. You knew you threw to the right guy. You might have thrown it bad, or something. But now it slows down a little bit.

The approach described by this professional quarterback entailed a specific focus and action plan for reversing the flow of a performance. The rationale for planning to maintain or regain control was stated by one of the professionals as follows.

P3: If...[you]...make a great pass, don't jump up and down. Because then you let your teammates know that you're so excited about this pass that you weren't sure of it. If you don't jump up and down and they see you walking or patting them saying, "Okay, good job! Good block!," then they realize, to you, its second nature. As a quarterback you should not show too much exuberance over one play, or something like that.

By demonstrating affective control the quarterbacks may have assisted their own efforts, as well as team efforts to perform well, consistently.

Constructive evaluation. Ravizza and Osborne (1991) documented the implementation of a mental training plan, in a university football program, in which the players were encouraged to learn from each effort, in practices and games. Eight of the university quarterbacks involved in the current study indicated that they actively drew out lessons from prior performances, and seven

indicated that they acted upon such lessons. Only 3 subjects stated that they reflected upon things that went well, or that they assessed the role of their mental approach in the game.

Recognizing what requires refinement was utilized during games, as indicated in the comments of this university quarterback.

Q9: During half-time I try and have a two or three minute period where I go off by myself and evaluate what happened in the first half. Things that I did wrong, or could have done better. And try to correct them, mentally.

One of the professionals recalled how action-oriented evaluation was emphasized in the heat of competition.

P2: During the game it was, "Well, how did it go?" Was that a bad play because I didn't do it right? Did I read the thing right? Information from the offensive linemen regarding the running game. And information gathered from different players during the game. And make sure that you're trying some of the things you were talking about.

Personal performance evaluations conducted during games appeared to focus on areas which required improvement. According to Orlick (1986) it is healthy and important to acknowledge not only one's weakness, but also one's strengths.

This process was reflected in the personal evaluations of one of the few subjects who looked for good things.

Q3: I would write down the things I wanted to work on and improve on. Then I would go through each one. I wrote down my strengths and weaknesses at different times during the season. That would help me. Especially seeing my strengths.

According to Ravizza (1986) positive feedback of the type mentioned above may lead to greater self-awareness and self-control and, in turn, to better athletic performances.

Following games some evaluation appeared to occur, although evidence of a thorough mental and physical post-game evaluation process was lacking.

Q8: I've seen what my capabilities are and how I can get the job done, from past experiences. So, I look back and see if I've done the best job that I could have done, or was supposed to have done. It's nothing structured. I just reflect back and see if I feel that I did the job that I was supposed to do.

Q6: On Monday, when you come to practice for the first time, you watch your mistakes on film. What you want to do all week in practice is get all the physical kinks out so that the mental aspect is all you have to worry about on game day. If you're hitching, or false-stepping coming out of the centre, or you're not following through, you work on that in practice. Your confidence starts coming with all the improvements you make from the little things that you did wrong before.

It was apparent that the professional quarterbacks did a better job of isolating the factors that they could work on to enhance the quality of their play.

P2: I always looked at how I could improve myself, whether I won or lost. I looked at the bad plays. Like, here's an interception. Why is it an interception? If I'd read him I'd have done this. Most of the plays that I recall are bad plays.

P3: I think athletes focus on their weaknesses first. If a quarterback has a weak arm, but is highly intelligent on the field, and in the off-season works on his mind, then he's waisting a lot of his time. I work on my weaknesses. If my weaknesses are my foot speed, or breaking film down to see tendencies, then I work on those.

Evidence of the value of evaluations and action plans in team sports was supported in the findings of Barbour (1994) who found that professional hockey players used constructive evaluation to enhance their performance.

Concluding Reflections.

The intent of the current investigation was not to validate of Orlick's (1992) "Model of Human Excellence." This end had been accomplished in prior research involving top performers in a variety of domains other than high caliber, full contact football (Barbour, 1994; Boulay, 1990; Krener-Phillips, 1992; McCaffrey & Orlick, 1989; McDonald and Orlick, 1994; Orlick & Lee-Gartner, 1993; Orlick and Partington, 1988). The purpose of this study was to determine whether the model accounted for the mental strategies employed by football quarterbacks.

All of the content items were accounted for in the qualitative analyses of the interview transcripts. These analyses confirmed that the seven components of Orlick's (1992) "Model of Human Excellence" were important to university quarterbacks and professional quarterbacks in their pursuit of performance excellence in football.

Commitment and belief, the core elements of the model, were evident in the mental strategies of all 12 subjects. Each of the peripheral components of the model, including full focus, positive imagery, mental readiness, distraction control, and constructive evaluation, was important to each of the three professionals. However, not all of the university quarterbacks included all five peripheral components in their mental strategies. That is, positive imagery was utilized by 6 subjects, while constructive evaluation was practiced by 8 of the 9 subjects. Individual differences with respect to the use of mental skills appeared to be related to the level of play, with the best players in both sub-groups having the most comprehensive mental approaches and practices.

The professional quarterbacks involved in the current investigation appeared to be more advanced, in terms of their mental approaches to training and competition. According to these subjects, by the time they had reached the

professional level their physical skills were ingrained. This being the case, it was clear to them that the development of mental skills represented a key to their ongoing growth as quarterbacks. Consequently, in terms of the sub-components of the model, they used mental skills for a wider variety of purposes than did the university quarterbacks. The professionals were likely refining, expanding, and improving mental skills which they had begun to acquire earlier in their careers.

Maintaining, or regaining optimum focus when confronted with distractions seemed to be more problematic for the university players, in spite of their awareness that factors beyond their control may have had a negative influence on performance outcomes. Consistent, thorough, personal performance evaluations were lacking and would likely have contributed to greater self-control, on the part of some subjects.

The "Football Interview Guide" was a useful instrument through which to obtain data relative to the research question, however, it could be modified or added to prior to its being employed in future studies. That is, it is possible that some of the subjects may not have talked about a component, or sub-component, of the "Model of Excellence," not because it was not part of their approach, but because they were not directly asked. A more naturalistic approach, in which the guide is used as an aid, but is not followed as strictly, could be incorporated to allow for more freedom, on the part of the interviewer, and the interviewee, in the gathering of data, and/or an extensive list of mental skill components and sub-components could be provided to the subjects, which they could rate and discuss.

Longitudinal studies of the mental approaches of quarterbacks as they progress through the developmental levels of football, and experience varying degrees of success, may provide a more complete understanding of the process of acquiring mental skills, and shed light on the question as to whether enhanced mental preparation is a cause or an effect of success as a quarterback. Given the

position-specific nature of mental preparation for high caliber football, it also may be worthwhile to undertake similar investigations with athletes who play positions other than quarterback.

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APPENDIX A
FOOTBALL INTERVIEW GUIDE

1. When the whistle blows at the start of the game are you ready to play?
2. If you are not ready what is missing? What might have helped? What would you have done differently if you could have done something differently?
3. Do you think that you train differently than other quarterbacks?
4. How do you manage to push yourself or to train when you do not feel like it?
5. Do you think that your mental preparation is different from other quarterbacks?
6. Has anything unexpected happened before or during a practice or game that may have effected your performance for better or worse?
7. Do you have goals that you would like to accomplish in your sport? If yes, do you believe that you can accomplish your goals? If no, why do you lack that belief?
8. What kind of mental preparation strategies have you initiated by yourself?
(Source, strategies, practices)
9. How do you start preparing for a game on the day of the game? Do you follow a specific pregame plan? If yes, please provide the details.
10. What do you say or think to yourself immediately before the start of the game, during the game, and between periods of action?
11. What was your best performance? What were you thinking or saying to yourself before that game? What were you focusing on during that game? What were you doing or thinking between periods of action?
12. Think of your worst performance. What were you thinking before the game? What were you focused on during the game? What were you doing or thinking between period of action?

13. What were the major differences between your best and worst performances, in terms of your preparation, thinking, feeling, and focus?
14. What role, if any, have others played in your mental preparation? In what way have they helped or interfered?
15. Do you have anything else that you would like to add that would help us to understand how to be mentally prepared to play quarterback?

APPENDIX B
LETTER OF INFORMATION AND INFORMED CONSENT FORM

Dear (subject's name),

Mental qualities and skills which have contributed to the success of the best performers in a variety of sports have been of interest to sport psychologists for several years. A relatively new area of interest involves psychological preparation for football. My name is Duncan Anderson. I am a graduate student at the University of Ottawa. I am supervised by Dr. Terry Orlick, professor and sport psychologist at the University of Ottawa, and the research which we conduct must be approved by the Human Research Ethics Committee of the Faculty of Health Sciences, chaired by Dr. Marie des Anges Loyer (613-787-6550). We are very interested in this element of football performance and our purposes for writing to you are to inform you of a study in which the mental readying strategies of elite quarterbacks will be the topic under investigation, and to seek your assistance in the completion of this research.

Quarterback is a unique position in a complex, demanding sport. Periodicals often feature interviews with talented quarterbacks and, occasionally, they will address the psychological requirements of the position. However, mental preparation strategies employed by elite quarterbacks have not been systematically studied. The purposes of the proposed investigation are to explore and to gain an understanding of the mental approaches of elite quarterbacks to training and competition.

In order to conduct this research we are contacting individuals, like yourself, who have played the position in university, or at the professional level to arrange private interviews. We realize that there are considerable demands on your time, but we would be extremely appreciative if we could establish a convenient place

and time to meet with you. The proposed interview would follow a standardized format (see attached Football Interview Guide) would be tape recorded, and would take approximately one hour to complete. We would like to assure you that the study will be conducted in a responsible manner. That is, you can refuse to participate or, if you choose to take part, then you will be able to refuse to answer any question that you consider inappropriate or too personal.

Furthermore, if you agree to participate, then you will be able to withdraw at any time without any penalty of any kind. Shortly after the interview we would send you the transcript for your final review, accompanied by a return envelope.

When we receive your final comments we would then start to analyze the text.

Finally, we would send you a copy of the findings of the study and respond to any questions that you might have. In order to ensure anonymity your name would not be mentioned in the presentation of results and the interview tape would be destroyed at the end of the study.

Whenever a research projects that involves human subjects is undertaken at the University of Ottawa the Ethics Committee of the University requires written consent from the participants. At this point an "Informed Consent Form" will be presented for your consideration and requesting your signature. As an experienced quarterback you have much to offer others, in terms of your mental preparation for practices and games. For this reason we hope that you will consider, seriously, our request.

Informed Consent Form

As a subject in this study you will be required to participate in an interview that will take approximately one hour. You are free to refuse to answer any question which you may consider too personal, or inappropriate, and you will have the right to withdraw at any time. The interview will take place at a time and in a location that is convenient for you. It will be tape recorded and later transcribed. The transcripts will be sent to you for final review and then will be processed. Individual results will be strictly confidential and your name will not be used in the presentation of the results. Upon completion of the study the original tapes will be destroyed, in order to ensure your anonymity.

I, willingly agree to participate in this study. I understand that it is possible to end my involvement at any time. I understand that my results will remain strictly confidential and I will not be identified in the presentation of the results of the study.

Participant,

Date,

Researcher,

P.S. Further information concerning this project can be obtained by contacting:

Marie des Anges Loyer, Ph.D.
Chair
Human Research Ethics Committee
Faculty of Health Sciences
University of Ottawa
Tel: 613-787-6550

Terry Orlick, Ph.D.
Professor
School of Human Kinetics
University of Ottawa
Tel: 613-562-5752

Duncan Anderson
Graduate Student
University of Ottawa
Tel: 613-225-0260