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# Mental toughness, servant leadership, and the collegiate distance runner

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MENTAL TOUGHNESS, SERVANT LEADERSHIP, AND THE COLLEGIATE  
DISTANCE RUNNER

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A Thesis  
Presented To  
Eastern Washington University  
Cheney, Washington

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In Partial Fulfillment of the Requirements  
for the Degree  
Master of Science

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By  
Christopher S. Hammer  
Spring 2012

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MASTER'S THESIS

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## ABSTRACT

Mental toughness is commonly associated with successful performance in the realm of athletics. However, despite the prevalence of its usage, the concept remains somewhat ambiguous in its definition and practical application. The purpose of this study was to determine the relationship between mental toughness and running performance amongst collegiate distance runners, a population that has yet to be the center of a mental toughness investigation. Of additional interest was to determine how a coach's servant leadership attributes interacts with athletes' mental toughness. Participants (n = 334) were males and females from 64 collegiate track teams from all divisions of the NCAA. Participants completed the Mental Toughness Questionnaire 48 (MTQ48; Clough et al., 2002), the Revised Servant Leadership Profile for Sport (RSLP-S; Hammermeister et al., 2008), and provided their current three- and five-kilometer personal best track times. Additionally, participants that competed in selected five-kilometer events had their race times recorded. Statistical analysis employed the ANOVA, ANCOVA, and Pearson r correlation techniques. Significant differences were discovered in both reported three- and five-kilometer personal best times, with the mentally tough group running faster than the non-mentally tough group. A significant difference was also found on the MTQ48 for the servant leader groups, with athletes that perceived their coaches to be servant leaders being more mentally tough than athletes in the non-servant leader group. Results are discussed in terms of theory, research, and practice.

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## Chapter I

### Introduction

In the realm of athletic competition, feats of endurance are often both awe-inspiring and misunderstood. Many people struggle to comprehend how an individual can push themselves to such limits for extended periods of time, and are astonished by stories told by those who do. It is not uncommon for runners to hear such comments as, "you ran 12 miles today? I didn't even drive that far!" or "why would anyone ever want to run 26.2 miles?" illustrating the discontinuity between the endurance athlete, their followers, and those who are unacquainted with the sport.

Within the sport of distance running, there is further segregation between those who have attained high levels of achievement and those who have not done so. While the partition between endurance runners and non-endurance runners is grounded in the lack of comprehension of the sport of running, the conceptual disconnect that exists within the endurance running community is largely founded in the mental attributes and characteristics of the competitors. One athlete who epitomizes this distinction is legendary American distance runner, Steve Prefontaine. Recognized as one of the most tenacious athletes to have lived, Prefontaine is famous for his courageous race tactics and outspoken quotes that reflect his mental make-up and confident demeanor. "Somebody may beat me, but they are going to have to bleed to do it" and "I'm going to work so that it's a pure guts race at the end, and if it is, I am the only one who can win it" ("Great Quotes," 1997) are two such quotes that illustrate his tenacity and drive to succeed.

Whereas Prefontaine was very vocal in his expression of his toughness, other successful athletes share similar beliefs, convictions, and dispositions. To this point, at

the elite level of athletic competition, there is often little variation amongst competitors' preparedness, technique, and physical abilities, with the athletes who are more "mentally tough" seeming to experience more success than the individuals deemed to possess less "mental toughness" (Gucciardi, Gordon, & Dimmock, 2008). In fact, Williams (1998) proposed "mental toughness may have more to do with winning than do such physical attributes as speed and power" (p. 60). Additionally, a study of Olympic champions revealed mental toughness to be the most frequently cited attribute as far as performance enhancement is concerned (Gould, Dieffenbach, & Moffett, 2002).

It is commonly accepted by coaches, media, and athletes that mental toughness is a psychological construct that contributes to athletic success (Connaughton & Hanton, 2009). However, not only is mental toughness [an alleged](#) discriminator of successful performance, it is debatably the most critical psychological factor in determining athletic achievement (Williams, 1998). That being said, for all the references to mental toughness that are made, "mental toughness is probably one of the most used but least understood terms used in applied sport psychology" (Jones, Hanton, & Connaughton, 2002, p. 205).

There are multiple differing definitions of mental toughness, with the common theme being that mental toughness implies a psychological advantage over non-mentally tough individuals (Clough, Earle, & Sewell, 2002; Jones et al., 2002; Loehr, 1986). Furthermore, the expanding knowledge in the field of mental toughness research has revealed a psychological construct that is not only associated with athletic performance excellence, but is multi-dimensional in that it is proposed to encompass cognition, emotion, and behavior (Bull, Shambrook, James, & Brooks, 2005; Clough et al., 2002;

Connaughton, Wadey, Hanton, & Jones, 2008; Crust & Clough, 2005; Jones, Hanton, & Connaughton, 2007). Despite the recent burgeoning knowledge base of mental toughness, researchers' understanding of the concept has historically failed to incorporate meticulous scientific approaches in comprehending anecdotal reports which has hindered the advancement of both the measurement and development of mental toughness (Gucciardi, Gordon, Dimmock, & Mallett, 2009).

Despite the existence of these conceptual incongruities, mental toughness has been linked to athletic achievement (Crust & Azadi, 2010; Sheard, Golby, & van Wersch, 2009). For instance, in a study of male and female athletes ranging in experience from club and university through national level in a variety of sports, Crust and Azadi (2010) found that county standard athletes and above scored significantly higher in total mental toughness than did their club/university level counterparts. Using a different mental toughness measurement instrument, Sheard et al. (2009) studied athletes of various competitive levels (international down to club level) from both individual and team sports and similarly found that elite athletes scored significantly higher in total mental toughness than their sub-elite counterparts.

However, other investigations have failed to find a significant relationship between athletic achievement and mental toughness (i.e. Golby & Sheard, 2004; Nicholls, Polman, Levy, & Backhouse, 2008), making the impact of mental toughness on athletic achievement less clear. In an attempt to contribute to resolving this ambiguity, the current study investigated the relationship between athletes' mental toughness and their corresponding level of athletic performance. In order to do so, this study concerned itself exclusively with collegiate track distance runners.

Regardless of any possible correlations between mental toughness and performance that may exist, mental toughness is universally perceived to be a positive and desirable construct for an individual to possess. Therefore, it is advisable that a coach enacts behaviors that are conducive to the development of their athletes' mental toughness. A common held belief is that these coaching behaviors entail hard-nosed, authoritative acts. Along these lines, Crust and Azadi (2009) found mental toughness to not be associated with the need for democratic coaching behaviors or even social support. However, the converse has also been suggested to be the case on multiple occasions (Connaughton et al., 2008; Gucciardi et al., 2009; Hammermeister et al., 2008; Rieke, Hammermeister, & Chase, 2008; Wolfenden & Holt, 2005), highlighting the [possibility](#) that coaching behaviors that align with the needs of the athletes and that are built on trust and [athlete-coach](#) relationships are conducive to the development of mental toughness.

These behaviors correspond to some of the core tenants of the concept of servant leadership. Similar to mental toughness, there does not exist a universally accepted definition [of servant leadership](#). However, all contemporary servant leadership models are founded in the works of Robert Greenleaf (1977), who essentially described servant leadership as [leading by serving the needs of others](#). While this model is most frequently applied to businesses and other organizations, it has recently been applied to athletics (e.g. Hammermeister et al., 2008; Rieke et al., 2008). With evidence that athletes of servant leader coaches possess enhanced psychological and performance variables, the results indicate that servant leadership is a leadership construct that may be very relevant in athletics and warrants further investigation.

**Statement of the Purpose**

The purpose of this study is twofold: 1) to discover if mental toughness is related to collegiate distance running performance; and 2) to determine whether coaches who adhere to a "servant leader" style of coaching produce athletes that are more mentally tough than athletes coached by non-servant leaders.

**Assumptions**

An important aspect of this study is that the reported three- and five-kilometer personal records as well as the results of the five-kilometer competitions accurately reflect the participants' achievement. In accordance with this, it is assumed that participating athletes were motivated and prepared to compete at a high level at the competitions under investigation. Additionally, it is assumed that the four competitions where the five-kilometer race data was collected provided conditions that were conducive for the athletes to compete at a high level. Furthermore, it is assumed that participants were truthful in their responses on the survey instruments. Accurate responses on the survey instruments are important in order to both determine the mental toughness profile of that athlete as well as to determine the leadership style of the coach. Along these lines, this study has access only to athletes' perceptions of their coaches' leadership style. Therefore, it is assumed that the athletes' perceptions accurately reflect the actual coaching style of the coach.

**Delimitations and Limitations**

The analysis of mental toughness in athletes has utilized a variety of participants from an array of athletic backgrounds. While some investigations involved athletes from multiple sports, including track & field, to study mental toughness, other investigations

focused exclusively on participants from a single sport (i.e. soccer: Thelwell, Weston, & Greenlees, 2005; cricket: Bull et al., 2005; Australian football: Gucciardi et al., 2008; rugby: Golby & Sheard, 2004). Furthermore, the concept of servant leadership has only recently been experimentally expounded upon to include athletics (e.g. Hammermeister et al., 2008; Rieke et al., 2008). Moreover, endurance runners were not the population under investigation in these studies. Therefore, of particular interest in this study was the development of an understanding of the essence of mental toughness and its relationship with perceived coaching styles in competitive distance runners, a population that has yet to be explored. For this reason, the current study was delimited to collegiate track athletes of various backgrounds, abilities, and experiences.

Fundamental to this study was the ability to differentiate individuals based on their achievement levels. Therefore, the determination of athletic achievement was delimited to each participant's finishing time in the five-kilometer race. While the results of this study may possibly translate to other endurance sports, it can only be concluded that the results are applicable only to the population under investigation.

Definitions of mental toughness vary by study. Similarly, the tools that measure and quantify mental toughness contrast as well. In the current study, obtaining a quantitative measurement of mental toughness was delimited to the use of the Mental Toughness Questionnaire 48 (MTQ48; Clough et al., 2002), which has been utilized in multiple investigations of mental toughness (Clough et al., 2002; Crust & Azadi, 2009, 2010; Crust & Keegan, 2010; Nicholls et al., 2008; Kaiseler, Polman, & Nicholls, 2009). Delimiting the quantification of mental toughness to the MTQ48 or any other mental toughness instruments is a potential limitation in this study as well as all other

quantitative mental toughness investigations to date. While the MTQ48 was the selected measurement tool for this study due to its [prominence in the mental toughness literature and its reported](#) favorable psychometric properties (Clough et al., 2002; Crust & Clough, 2005; Nicholls et al., 2008; Kaiseler et al., 2009), it must be recognized there is a need for advancement in mental toughness measurement (Crust & Swann, 2011; Jones et al., 2002).

As with mental toughness, definitions and interpretations of servant leadership vary from study to study. As such, multiple instruments to measure servant leadership have emerged in order to quantify the varying interpretations. In order to stay consistent with the previous servant leadership studies that have concerned themselves with sport, this study [was](#) delimited to the use of the Revised Servant Leadership Profile for Sport (RSLP-S; Hammermeister et al, 2008). As mentioned, the RSLP-S was the instrument of choice in the two previous studies of servant leadership in sport (Hammermeister et al., 2008; Rieke et al., 2008). Furthermore, the RSLP-S is adapted from the prominent servant leadership measurement instrument, the Revised Servant Leadership Profile (RSLP; Wong, 2004).

Another limiting aspect of this study [was](#) the possibility that the assumption that the competition results reflect the participants' typical achievement is violated. Specifically, this is accomplished when a normally high-achieving athlete fails to achieve his/her potential in the competition under investigation either due to an "off-day" or because of other extenuating circumstances such as a setback in training due to an injury. This "out-of-character" performance could potentially distort the data for the reason that

an athlete who would normally have been classified as a “high-achiever” would not be classified as such.

### **Operational Definitions**

Distance running: Distance running is a predominantly aerobic form of running where endurance, not foot speed, is the main focus. In the present study, the distance runners being investigated are collegiate track athletes that race the three- and/or five-kilometer track events.

Achievement: Achievement was defined as how fast as individual 's three- and five-kilometer personal records are or how fast they ran in the five-kilometer race.

Mental toughness: While there exists varying definitions of mental throughout the literature, the commonality is that being mentally tough implies a psychological advantage over the non-mentally tough (Clough et al., 2002; Jones et al., 2002; Loehr, 1986).

Servant leadership: Similar to mental toughness, multiple semi-unique theoretical models of servant leadership exist. For the purpose of this study, servant leadership referred to the commonalities that can be found throughout the servant leadership literature and that are founded in the conceptual depiction provided by Greenleaf (1977); mainly that servant leadership is a socially supportive, non-autocratic form of leadership where the leader legitimately cares for the subordinates' well-being and success and helps them reach their potential by doing everything they can to facilitate their subordinates' personal and professional growth.



### Hypotheses

With there being two main purposes of this investigation (to discover if mental toughness is related to collegiate distance running performance and to determine whether coaches who adhere to a "servant leader" style of coaching produce athletes that are more mentally tough than athletes coached by non-servant leaders), two main testable hypotheses were formulated:

H<sub>0</sub>: Mentally tough runners will have faster personal records than non-mentally tough runners.

H<sub>0</sub>: Athletes that perceive their coaches to be servant leaders are more mentally tough than athletes that do not perceive their coaches to be servant leaders.

### Exploratory Questions

Of further, but more tangential interest, in the present study was the relationship of gender and National Collegiate Athletic Association (NCAA) division on mental toughness, servant leadership, and run performance. Thus, several other exploratory hypotheses will be explored including:

Exploratory Question 1: Does run time, mental toughness and perceived servant leader behaviors among coaches vary across NCAA Division?

Exploratory Question 2: Does run time, mental toughness and perceived servant leader behaviors among coaches vary by gender?

### **Significance**

While the fields of both mental toughness and servant leadership have recently been the subjects of interest in numerous research investigations, there are still a multitude of conceptual and operational discontinuities that need to be resolved.

Additionally, none of the existing research in either area focuses exclusively on the endurance sport of distance running. For these reasons, findings from this study will contribute to the understanding of both mental toughness and servant leadership (specifically the relationship between servant leadership, mental toughness, and athletic achievement) as well as enhance the understanding of the psychological profile of collegiate track athletes, specifically those that compete in the endurance disciplines. Consequently, the findings may possibly apply to the psychological profile of athletes from similar sports as well. Finally, results that indicate that servant leader coaches produce more mentally tough athletes and that mental toughness predicts successful athletic performance [may perhaps](#) have important consequences due to the possible implication that a coach may adapt a servant leadership style in order to ultimately enhance performance. While correlation does not necessarily imply causation, the ability to identify potential high performers based on their mental toughness characteristics or the possibility to improve one's athletic achievement simply by enhancing their mental toughness is of considerable value to athletes, coaches, sport scientists, and sport psychologists.

## Chapter II

### Review of the Literature

With the present study concerning itself with the intricate concepts of mental toughness and servant leadership, the purpose of this chapter is to provide a conceptual overview of these two distinct constructs.

This chapter will provide a comprehensive literature review of the two concepts separately, starting with mental toughness. Within this mental toughness review, the following sections will address the different aspects of the mental toughness literature: (1) models of mental toughness; (2) hardiness as it relates to mental toughness; (3) interactional effects of mental toughness; (4) genetic vs. environmental influences; (5) mental toughness and the 'Big-Five' personality traits; (5) measuring mental toughness; (6) the effects of mental toughness; (7) coaching mental toughness; and (8) areas for improvement in mental toughness literature and research.

The servant leadership section is divided into the following sections: (1) leadership; (2) leadership in sports; (3) servant leadership; (4) models of servant leadership; (5) effects of servant leadership; (6) servant leadership in sport; (7) servant leadership compared to other leadership models; (8) measuring servant leadership; (9) criticisms of servant leadership; and (10) areas for improvement in servant leadership literature and research.

This chapter will provide the reader with an in depth understanding of the concepts of mental toughness and servant leadership. Taken in its entirety, the goal of this chapter is to provide a foundation for the present study.

### **Mental Toughness Literature**

Jones et al. (2002) suggested mental toughness is a concept that is widely used yet poorly understood. What is known is that mental toughness is a desirable and positive construct that is commonly believed to contribute to performance success (Connaughton & Hanton, 2009; Gould et al., 2002; Gucciardi et al., 2008; Williams, 1998). Despite the prevalence of use of the term *mental toughness*, a commonly accepted theoretical definition of the concept does not exist. However, there have been multiple proposed definitions of mental toughness, with each being slightly unique. The consequences of this diversity are that an extensive array of psychological attributes exists that are linked to the concept of mental toughness (Jones et al., 2002, 2007). Despite the wide range of definitions, many facets of mental toughness are frequently reported across the literature, such as superior coping capabilities (Bull et al., 2005; Fourie & Potgieter, 2001; Levy, Polman, Clough, Marchant, & Earle, 2006; Nicholls et al., 2008; Thellwell et al., 2005), high levels of optimism (Gould et al., 2002; Nicholls et al., 2008; Smith, 2006), control of emotions (Clough et al., 2002; Crust, 2009; Loehr, 1986), use of psychological strategies (Crust & Azadi, 2010; Jones et al., 2002, 2007), and the willingness to take risks (Bull et al., 2005; Coulter, Mallet, & Gucciardi, 2010; Crust & Keegan, 2010).

**Models of mental toughness.** The current state of conceptual ambiguity potentially impedes advancement in the field of mental toughness. Nonetheless, some models of mental toughness have been more influential than others. The following section will expand upon a few of these prominent models.

**Loehr (1986).** After conducting extensive interviews with premier athletes and coaches from Japan, Canada, and the United States, Loehr discovered that at least half of

the interviewees contended that successful performance was contingent upon mental factors. Surprisingly, the same sample of coaches and athletes reported that only about five percent of their practice time was devoted to mental preparation. Loehr hypothesized that without an available psychological training model to follow, athletes and coaches simply did not know how to prepare for the mental aspects of their sport. For these reasons, Loehr believed the elusive paradigm of mental toughness was the *last frontier of sport*, and believed that this topic would be an integral topic in sport for years to come.

Loehr asserted that mental toughness is not inherited, but learned. Additionally, mental toughness is not contingent on an individual's personality style (i.e. introvert vs. extrovert, charismatic vs. reserved, etc.). However, there does exist a collection of learned mental qualities that are characteristic of the mentally tough. These include: self-motivated and self-directed, positive but realistic, in control of emotions, calm and relaxed under fire, highly energetic and ready for action, determined, mentally alert and focused, self-confident, and responsible.

A distinguishing characteristic of Loehr's model of mental toughness is the mentally tough athlete's ability to create an ideal performance state, which allows them to consistently compete at their peak performance level. Loehr refers to this construct as the Athletic Excellence Training model. Essentially, the Athletic Excellence Training model allows for athletes to control their ideal performance state by increasing their flow of positive energy. To be mentally tough is to have control over the ideal performance state.

In order to enhance mental performance, Loehr advocated self-awareness of mental strengths and weaknesses. In order to allow for individuals to do just that, Loehr

created an instrument to measure mental toughness that encompassed the seven components that Loehr deemed most essential to mental toughness: self-confidence, negative energy [control](#), attention control, visual and imagery control, motivational level, positive energy [control](#), and attitude control.

*Clough, Earle, and Sewell (2002)*. In an effort to combine both psychological theory and applied sport psychology, Clough et al. approached a definition of mental toughness by engaging in discourse with practitioners, players, and coaches as well as by reviewing scholarly research results. Their efforts accumulated in findings that stressed the importance of four different components of mental toughness: (a) [control](#): the degree to which an individual believes they are in control of the outcomes of their life; (b) [commitment](#): the degree to which an individual remains focused and dedicated to a task; (c) [challenge](#): the degree to which an individual views a difficulty as an opportunity rather than a threat; and (d) [confidence](#): the degree to which an individual believes in their ability to succeed. Additionally, control was further divided into emotional control and life control while confidence was separated into confidence in abilities and interpersonal confidence. The combination of these components has been referred to as the 4Cs model of mental toughness (Clough et al., 2002). The culmination of their findings led Clough et al. ([2002](#)) to propose the following as a definition of mental toughness:

*Mentally tough individuals tend to be sociable and outgoing; as they are able to remain calm and relaxed, they are competitive in many situations and have lower anxiety levels than others. With a high sense of self-belief and an unshakeable*

*faith that they control their own destiny, these individuals can remain relatively unaffected by competition or adversity.*

Clough et al. recognized that their derived definition shares many similarities with the psychological construct of hardiness; however, while the definition "...pays a healthy respect in theoretical terms to the 'hardiness' approach utilized within health psychology" (Clough et al., 2002, p. 38), Clough et al. maintain the two constructs are distinct due to the inclusion of confidence as a key component. In conjunction with their derived definition, Clough et al. also developed a measurement instrument of mental toughness, which will be discussed in greater detail shortly.

**Jones, Hanton, and Connaughton (2002, 2007).** In a qualitative study of elite athletes, Jones et al. (2002) undertook the task of both defining and identifying the essential attributes that characterize a mentally tough individual. Upon analysis, twelve distinct attributes of mental toughness were identified (ranked by perceived importance):

- *Rank 1: Having an unshakable self-belief in your ability to achieve your competitive goals.*
- *Rank 2: Bouncing back from performance set-backs as a result of increased determination to succeed.*
- *Rank 3: Having an unshakable self-belief that you possess unique qualities and abilities that make you better than your opponents.*
- *Rank 4=: Having an insatiable desire and internalized motives to succeed.*
- *Rank 4=: Remaining fully focused on the task at hand in the face of competition-specific distractions.*

- *Rank 6: Regaining psychological control following unexpected, uncontrollable events.*
- *Rank 7: Pushing back the boundaries of physical and emotional pain, while still maintaining technique and effort under distress in training and competition.*
- *Rank 8: Accepting that competition anxiety is inevitable and knowing that you can cope with it.*
- *Rank 9=: Not being adversely affected by others' good and bad performances.*
- *Rank 9=: Thriving on the pressure of competition.*
- *Rank 11: Remaining fully-focused in the face of personal life distractions.*
- *Rank 12: Switching a sport focus on and off as required.*

Furthermore, the attributes can be divided into subgroups of self-belief, desire and motivation, focus (performance-related), focus (lifestyle-related), dealing with competition-related pressure (external) and anxiety (internal), and dealing with physical and emotional pain. From the interviews and focus group sessions, Jones et al. (2002) additionally derived an accompanying definition of mental toughness:

*Mental toughness is having the natural or developed psychological edge that enables you to:*

- *Generally, cope better than your opponents with the many demands (competition, training, lifestyle) that sport places on a performer.*
- *Specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure.*

The proposed definition highlights the importance of coping in the mental toughness construct, both in and out of competitive situations.



The proposed definition was later verified in a study consisting of super-elite athletes (Olympic or world champions) as well as coaches and sport psychologists (Jones et al., 2007). In fact, in a scale out of a possible ten, the super-elite participants agreed with the definition ( $M = 9.33$ ,  $SD = 1.05$ ) more than the previous sample of elite participants did ( $M = 8.7$ ,  $SD = 1.06$ ). However, whereas the previous participants identified twelve attributes essential to a mentally tough performer, the super-elite participants produced thirty attributes that they perceived necessary in creating a framework of mental toughness. While the elite participants identified far less attributes than the super-elite participants, all of their attributes were encompassed in the attributes identified by the super-elite participants. The implications could imply that the super-elite participants simply have a much more comprehensive understanding of mental toughness than the non-elite participants. The attributes identified by the super-elite participants were organized into a framework of mental toughness that included four main dimensions of mental toughness (attitude/mindset, training, competition, post-competition), which were further broken down into the subcategories of belief (attitude/mindset), focus (attitude/mindset), using long-term goals as the source of motivation (training), controlling the environment (training), pushing yourself to the limit (training), belief (competition), staying focused (competition), regulating performance (competition), handling pressure (competition), awareness and control of thoughts and feelings (competition), controlling the environment (competition), handling failure (post-competition), and handling success (post-competition) (Jones et al., 2007). While the dimensions of training, competition, and post-competition are all associated with traits of mental toughness at specific moments in a training/competition cycle, the

attitude/mindset dimension entails the attributes that a mentally tough individual possesses that constitutes their general attitude.

Overall, the Jones et al. definition was interpreted by the super-elite participants as containing both general and specific elements that allow an individual to better cope with general demands as well as persist in the face of adversity in training/competition via the use of mental skills. Although the Jones et al. definition parallels aspects of previous definitions, such as the stress placed on the ability to cope, the emphasis placed on the use of specific mental skills in conjunction with a general mental toughness mindset suggests mental toughness is more than simply a collection of psychological strategies.

**Hardiness as it relates to mental toughness.** There are many factors, both physiological and psychological, that appear to facilitate performance excellence. Golby and Sheard (2004) found that not only do high levels of mental toughness seem to differentiate the high achievers from the rest of the population, but an attribute called hardiness does so as well. These findings are compatible with Crust (2008), who deemed likely that "...mental toughness shares some common ground with the concept of hardiness" (p. 579). Individuals who possess high levels of hardiness tend to be more committed, exhibit more control, and view problems as challenges rather than threats, which together serves as a buffer to the negative effects of stress (Kobasa, 1979). Yet while there may be underlying similarities between the two psychological constructs, there exist conceptual differences between the two (Golby, Sheard, & Lavalley, 2003). More specifically, mental toughness appears to expand the concept of hardiness in order to incorporate confidence (Clough et al., 2002; Golby & Sheard, 2004). However, the

combination of stress resistance and performance enhancement (Atella, 1999; Khoshaba & Maddi, 1999; Westman, 1990) causes hardiness to often be coupled with mental toughness (Clough et al., 2002).

**Interactional effects of mental toughness.** Mental toughness has been investigated as it interacts with many variables, including gender, age/experience, achievement levels, and sport type.

***Mental toughness across gender.*** Much of the research dedicated to the concept of mental toughness has fixated on the definition and attributes of mental toughness while neglecting to investigate the potential interactional effects of mental toughness on a variety of underlying variables (Nicholls et al., 2009). However, the knowledge base in this area is growing. One such variable that has been the subject of examination is gender. When comparing mental toughness between males and females, results from studies are inconsistent with one another. One measurement instrument of mental toughness, known as the Mental Toughness Questionnaire 48 (MTQ48; Clough et al., 2002) reportedly does not discriminate across gender (Clough et al., 2002). Similarly, Crust (2009) found there to be no significant relationship between gender and mental toughness. However, other studies have found contradictory results. In using the MTQ48, Nicholls et al. (2009) found there to be a significant difference in mental toughness between males and females, with males scoring higher in total mental toughness as well as four of the measured mental toughness subscales. Crust and Keegan (2010) used the MTQ48 and similarly found that males scored significantly higher in total mental toughness, as well as confidence in their abilities; however, Crust and Azadi (2010) used the MTQ48 and found there to be no significant gender difference in mental

toughness. Another measure of mental toughness, the Sports Mental Toughness Questionnaire (SMTQ), was used by Sheard *et al.* (2009) and revealed that males scored significantly higher than females in mental toughness. While gender differences in mental toughness have been found in multiple studies, it may be incorrect to conclude that males are more mentally tough. The discrepancy between the genders' scores could possibly be caused by deviations in how the attributes of mental toughness are expressed in females (Nicholls *et al.*, 2009).

*Mental toughness across age/experience.* Age and experience are two often-related variables that have recently garnered attention as far as their relationship to mental toughness is concerned. It must be noted that while age and experience are often positively correlated with one another, this is not always the case. Competitive experience was found to be a critical factor in developing mental toughness (Connaughton *et al.*, 2008). Similarly, Nicholls *et al.* (2009) found that both rising age and years of experience were associated with greater overall mental toughness scores, as well as higher scores in three of the measures subscales of challenge, commitment, and life control. Likewise, Sheard *et al.* (2009) found that the athletes in the 25 and up age group (the oldest category) scored significantly higher in overall mental toughness than the younger athletes. Nevertheless, other studies have had contrasting results. Crust and Keegan (2010) reported findings that suggest total mental toughness and age are not significantly related. However, analysis of the subscales revealed significant positive relationships between age and emotional control and a significant negative relationship between age and interpersonal confidence.

***Mental toughness across achievement.*** Another related variable that warrants investigation is achievement level, and its relationship to mental toughness. According to Nicholls et al. (2009), this is an area where there is very limited research. However, multiple studies have found no significant relationship between achievement levels and mental toughness (Golby & Sheard, 2004; Nicholls et al., 2009), suggesting that “...differences between levels of athletic achievement are minimal or subtle and that other factors like physical attributes, technical skill, or different psychological factors predict achievement level more accurately” (Nicholls et al., 2009, p. 74). Other studies have found results that suggest the opposite to be the case. Sheard et al. (2009) found a significant difference in mental toughness between elite athletes (i.e. international and national competitors) and non-elite athletes, with the elites scoring higher. Similarly, Crust and Azadi (2010) found results that support the claim that higher achieving athletes possess superior mental toughness, and have offered the explanation that it is due to differences in commitment levels.

The degree to which results in this area of research contradict one another emphasize the need for further investigation on the topic. As Crust (2008) suggests, perhaps possessing mental toughness simply allows an athlete to make the most of their abilities. If this is the case, mentally tough individuals would not automatically perform at higher levels than non-mentally tough athletes, but they would perform better when compared to a non-mentally tough version of themselves.

***Mental toughness across sport.*** Another relationship that merits attention is that of the specific sport and mental toughness. Nicholls et al. (2009) found there to be no significant difference amongst individuals who participated in contact versus non-contact

sports or individual versus team sports. While more research in this area is required, this conclusion supports the notion that mental toughness is a personality trait rather than simply a collection of sport-specific psychological strategies, due to the fact that mental toughness is consistent across situations (Nicholls et al., 2009).

**Genetic vs. environmental influences.** Due to the variability in the usage of the term 'mental toughness' as well as the differing definitions that have been offered, the construct of mental toughness is still shrouded in ambiguity. For instance, Gibson (1998) approached mental toughness as if it was a state of mind while others contend that mental toughness is a trait-like construct (Clough et al., 2002). Furthermore, the origin of mental toughness has been a topic that has attracted research [attention](#); that is, is mental toughness the result of an individual's upbringing and experiences, or is it predetermined by an individual's genetic makeup?

Jones et al. (2002) proposed a definition for mental toughness that specifically addressed the issue of nature versus nurture in defining mental toughness as "...having the natural or developed psychological edge..." (p. 213). To Jones et al. (2002), the development of mental toughness is contributed to by either nature or nurture. The contentions of Jones et al. (2002) have received support from other studies as well. In a study of elite soccer players conducted by Thelwell [et al.](#) (2005), participants indicated that mental toughness was something that was both naturally occurring as well as something that was developed through the different environments the participants were exposed to. Specifically, these findings indicate the possibility that an athlete's mental toughness is capable of being improved simply by being placed in the correct environments throughout the developmental and early phases of their careers (Thelwell et

al., 2005). Similarly, Gucciardi et al. (2009) found that early childhood experiences, which were optimized by the parents, were essential in developing and fostering a general mental toughness. In studying mentally tough elite cricketers, Bull et al. (2005) likewise found that the athletes' developmental backgrounds cultivated mental toughness in the majority of the players. Particularly, it was determined that the environment contributed to the development of mental toughness via the individual's upbringing as well as their "transition into the appropriate cricket environment" (Bull et al., 2005, p. 218). An interesting finding was that while some environmental influences the athletes were exposed to seem improper as far as an appropriate upbringing is concerned, the athletes nonetheless cited those influences as experiences that assisted in their development of mental toughness (Bull et al., 2005). Furthermore, in studying elite adolescent swimmers, Sheard and Golby (2006) have shown that psychological skills training can enhance an individuals' mental toughness, suggesting mental toughness may be influenced by environmental factors.

While there are multiple accounts of the role that experiences play in the development of mental toughness, it is important to note that it was also found that mental toughness can become repressed as well. In studying Olympic and world champions, Jones et al. (2007) found that mental toughness fluctuated throughout one's career, suggestive of the concept that mental toughness must be frequently maintained and nurtured during this period.

Overall, there is much support for the importance of environmental influences (parental, upbringing, exposure to challenging environments, etc.) in the development of mental toughness. However, while it appears that the environment is crucial in the

development of mental toughness, other studies suggest that heredity is a contributor to mental toughness as well. Although the relationship was found to be insignificant, the 5-HTT gene is one genetic variable that has been linked to mental toughness (Golby & Sheard, 2006). Other studies have found more support for the heritability of mental toughness. In a study of 219 pairs of monozygotic and dizygotic twins, Horsburgh, Schermer, Veselka, and Vernon (2009) concluded that "...genetic and nonshared environmental factors would contribute to the development of individual differences in mental toughness" (p. 104), with the subscales of mental toughness being less heritable than overall mental toughness. This finding is consistent with the vast majority of personality traits in that they are all influenced by both nature and nurture (Johnson, Vernon, & Feiler, 2008). Horsburgh et al. (2009) further examined the genetic and environmental correlations amongst the mental toughness subscales. It was found that all but one of the genetic correlations were stronger than the environmental correlations, suggesting that not only are the mental toughness variables related, but that the genes that contribute to one variable of mental toughness also extend to other variables of mental toughness (Horsburgh et al., 2009). Due to the fact that traits that are greatly affected by environmental factors compared to genetic factors are easier to modify, the results of the study have repercussions for the development of mental toughness (Horsburgh et al., 2009). Specifically, Horsburgh et al. (2009) advocate that due to the high level of heritability of overall mental toughness, athletes and practitioners should focus on enhancing the subcomponents of mental toughness with the least heritability, such as commitment and control.



**Mental toughness and the ‘Big-Five’ personality traits.** The ‘Big Five’ personality traits described by the Five Factor Model proposed by Costa and McCrae (1992) are broad dimensions of human personality. Specifically, the five traits are openness, conscientiousness, extraversion, agreeableness, and neuroticism and are responsible for the bulk of the disparity that exists amongst individuals’ personality characteristics (Costa & McCrae, 1992). In a behavioral genetic study conducted by Horsburgh et al. (2009), the MTQ48 was utilized in order to ascertain the relationships that exist between the Big-5 factors of personality and mental toughness and its subscales. It was expected and found that total mental toughness and all of its subscales were significantly negatively correlated with neuroticism (Horsburgh et al., 2009). Furthermore, significant positive relationships were expected and found between extraversion, openness to experience, agreeableness, conscientiousness, and total mental toughness (as well as with most of its subscales) (Horsburgh et al., 2009).

**Measuring mental toughness.** The majority of the early attention that mental toughness received was in the form of qualitative analysis, with the purpose of creating the mental toughness construct and eliminating the existing conceptual discrepancies (Crust & Keegan, 2010; Crust & Swann, 2011). While this was necessary to ascertain the essential components of the construct, the issue of measurement was nonetheless receiving scant attention (Crust & Keegan, 2011). Additionally, while there appears to be a consistency as to the reported key components of mental toughness, many of these attributes are yet to be substantiated via quantitative methods, and when they are measured, the different measuring instruments that are utilized seem to be measuring different aspects of mental toughness (Crust & Keegan, 2010).

The evolution of instrumentation for measurement of mental toughness dates back to 1986, when Loehr (1986) developed the Psychological Performance Inventory (PPI). The PPI is a 42-item scale that, using Likert scales, generates a score for overall mental toughness as well as for the subscales of self-confidence, negative energy control, attention control, visualization and imagery control, motivation, positive energy, and attitude control. While the PPI is one of the more influential mental toughness measurement instruments to exist (Middleton, Marsh, Martin, Richards, & Perry, 2004), upon examination its factor structure has received criticism (Middleton et al., 2004; Golby, Sheard, & van Wersch, 2007). However, in their work evaluating the factor structure of the PPI, Golby et al. (2007) developed an alternate instrument called the PPI-A, whose components of mental toughness included determination, self-belief, positive cognition, and visualization. While factor analysis of the PPI-A was favorable, Sheard et al. (2009) identified the lack of a measure of control, an attribute identified as a key component of mental toughness (Clough et al., 2002; Jones et al., 2002; Loehr, 1986), a possible constraint to its applicability.

Clough et al. (2002) with the Mental Toughness Questionnaire 48 (MTQ48) delivered the next major advancement in mental toughness instrumentation. Similar to the PPI, the MTQ48 employs Likert scales to yield an overall mental toughness score as well as scores for the subscales of commitment, emotional control, life control, challenge, interpersonal confidence, and confidence in abilities. To date, the MTQ48 has been one of the most commonly adapted instruments utilized in published mental toughness research (Crust & Swann, 2011). Support for the MTQ48's validity and reliability, as well as its internal consistency has been reported (Clough et al., 2002; Crust & Clough,

2005; Nicholls [et al.](#), 2008; Kaiseler [et al.](#), 2009). Additionally, Horsburgh et al. (2009) confirmed the factor structure of the MTQ48. However, despite the evidence in favor of its psychometric properties and its frequency of use, the MTQ48 has been the source of some disparagement due to its shared conceptual background with hardiness and its need for further analysis of its psychometric properties, specifically its factor structure (Sheard et al., 2009).

Other advances in the area of mental toughness instrumentation include the Mental Toughness Inventory (MTI; Middleton et al., 2004) and the Mental, Emotional, and Bodily Toughness Inventory (MeBTough; Mack & Ragan, 2008), which was developed with the purpose of supporting health professionals in their treatment and rehabilitation of their patients. Initial findings showed support for the validity of the MeBTough (Mack & Ragan, 2008), but further research is necessary to confirm its validity and reliability. Similarly, while the theory behind the MTI is undisputed, further research is required to confirm its validity, reliability, and other psychometric properties (Sheard et al., 2009).

The Sports Mental Toughness Questionnaire (SMTQ; Sheard et al., 2009) has recently been developed with hopes of fulfilling the need for a sound instrument to measure mental toughness. The SMTQ is a 14-item inventory that assesses an individual's total mental toughness and the subcategories of confidence, constancy, and control. Sheard et al. (2009) found preliminary support for their measurement instrument in validity, reliability, as well as in its psychometric properties. Additionally, a strength of the SMTQ is its measure of emotional and negative energy control (Sheard et al., 2009), which has been recognized as an element of mental toughness (Clough et al.,

2002; Jones et al., 2002; Loehr, 1986). While the SMTQ appears to possess acceptable psychometric properties (Sheard, 2010), further psychometric validation is necessary as well as research to confirm validity and reliability.

While all measuring instruments of mental toughness are unique, it is evident that there is a commonality amongst them as well (Sheard et al., 2009). For example, the MTQ48 and the SMTQ share multiple similarities in their items, yet the relationship between the two was found to be only moderately strong, which is evidence that the scales actually measure related but different elements of mental toughness (Crust & Swann, 2011). Crust & Swann (2011) propose that the discrepancies between scales can be accounted for by possible low internal consistency that exists within the scales. Regardless of the psychometric properties of the individual measurement tools, as long as conceptual ambiguities of mental toughness exist, scales are likely to continue to be comparable in some ways and divergent in others (Crust & Swann, 2011). Therefore, future efforts should be directed not only towards the conceptual clarification of mental toughness, but towards the refinement and development of psychometrically sound mental toughness instrumentation.

**The effects of mental toughness.** As mental toughness is a multi-dimensional construct, it is not surprising that the benefits encompass a wide range of aspects. Specifically, the elements of mental toughness that will be discussed encompass the physical, cognitive, behavioral, and emotional aspects of the individual. Additionally, the possibility that mental toughness can be detrimental to an individual's well-being in the form of injury rehabilitation is covered.

***The physical benefits.*** From a physical standpoint, results of studies have found significant positive relationships between mental toughness and both perceived physical demands and actual endurance performance (Clough et al., 2002; Crust & Clough, 2005). In one study conducted by Crust and Clough (2005), the correlation between mental toughness and physical endurance was assessed by having participants suspend a dumbbell weighing 1.5% of their weight directly in front of them using their dominant arm. It was found that the mentally tough participants performed significantly better than their less-mentally tough peers. Additionally, besides total mental toughness, Crust and Clough (2005) found that the mental toughness subscales of control and confidence (but not challenge or commitment) were significantly positively related to the ability to tolerate the endurance test.

In another study, Clough et al. (2002) assessed the relationship between mental toughness and perceived physical demand by having participants cycle at various workloads (based off of VO<sub>2</sub> max test results) and self-rate their exertion. There was no significant difference amongst perceived physical demands at low workloads; but as workload increased, the less-mentally tough reported higher perceived physical demands until the difference between the high-mentally tough and low-mentally tough became statistically significant at 70% of the workload (Clough et al., 2002).

***Coping.*** Lazarus and Folkman (1984) defined coping as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (p. 141). When coping effectively, the targeted stressor is either eliminated or reduced via problem-focused coping or the provoked emotion is manipulated without changing the situation via

emotion-focused coping (Lazarus & Folkman, 1984). Coping is also considered to be an important element of mental toughness. It was one of the twelve components of mental toughness identified by Fourie and Potgieter (2001) as well as a general dimension of mental toughness found by Bull et al. (2005). Coping is also inherent within the Jones et al. (2002) definition of mental toughness: “Mental toughness is having the natural or developed psychological edge that enables you to generally, cope better than your opponents with the many demands (competition, training, lifestyle) that sport places on a performer...” (p. 213). In a study of elite soccer players, Thellwell et al. (2005) derived a similar definition with the difference that instead of ‘*generally* cope better,’ mentally tough individuals should ‘*always* cope better’ (pg. 328). Smith (2006) also theorized that mentally tough athletes believe in their own abilities to cope in the face of adversity and to expect positive outcomes.

Using a large sample of athletes, Nicholls et al. (2008) investigated the relationship between mental toughness and coping. Of the ten coping subscales measured by the coping inventory for competitive sport (CICS; Gaudreau & Blondin, 2002), eight were significantly correlated with mental toughness. Specifically, of these significant relationships, mental toughness was positively associated with the approach coping strategies of mental imagery, effort expenditure, thought control, relaxation, and logical analysis and negatively associated with the avoidance coping strategies of distancing, mental distraction, and resignation. The two subscales of coping that were not significantly correlated with mental toughness were seeking support and venting emotions. These findings were consistent with popular perception of mental toughness:

The notion that seeking support is not compatible with mental toughness corroborates the definitions provided in the literature and probably the common perception that a mentally tough athlete is able to bounce back or resolve issues without recourse to others. Also, overt venting of emotions can be perceived as a sign of mental weakness rather than strength. (Nicholls et al., 2008, p. 1188)

Interestingly, slight variations were found amongst the subscales of mental toughness. For instance, emotional control was significantly negatively correlated with venting emotions while not significantly correlated at all with mental imagery or thought control whereas challenge and commitment were both significantly correlated with mental imagery and thought control but not significantly correlated with venting emotions (Nicholls et al., 2008). The use of coping strategies has also been linked to mental toughness in the endurance event of long-distance walking, where it was found that the walkers took a flexible approach to coping in that they would use their inventory of coping strategies interchangeably (Crust, Nesti, & Bond, 2010). In a study of injury rehabilitation, Levy et al. (2006) additionally found that individuals who are more mentally tough were better able to cope with pain during rehabilitation compared to their low-mentally tough counterparts through the application of direct coping strategies. All of the aforementioned results serve to validate the stress that is placed on coping in the Jones et al. (2002) definition as the ability to cope with adverse situations has been found to be associated with mental toughness.

**Optimism.** Optimism has been linked to mental toughness (Gould et al., 2002). Smith (2006) suggested that mentally tough individuals have positive outcome expectancies. In support, Nicholls et al. (2008) found that mental toughness and its

subscales were all significantly and positively correlated with optimism. Conversely, mental toughness and its subscales and pessimism were significantly negatively correlated (Nicholls et al., 2008). In the same study, significant correlations were found between most of the coping subscales and optimism, implying the interconnectedness of the different components of mental toughness. The link between mental toughness and optimism is one of significance for two reasons: 1) optimism is alleged to be related to higher levels of achievement (Seligman, 1998), and 2) optimism can be learned (Seligman, 1990). Thus, because of the strong correlation between mental toughness and optimism, individuals may be able to learn optimism skills to enhance their mental toughness and in turn, achieve more (Nicholls et al., 2008).

*Affect intensity.* A crucial component of mental toughness is the ability to control one's emotions (Clough et al., 2002; Loehr, 1986). Crust (2009) studied affect intensity in athletes to determine if mentally tough athletes experience emotions that are more or less intense than their non-mentally tough counterparts. The implications of the study were important because if mentally tough individuals experienced less intense emotions, a possible explanation for how mentally tough individuals endure pressure-producing situations with relatively no adverse consequences would be possible (Crust, 2009). However, it was found that mental toughness and affect intensity were not significantly linearly related, meaning high and low mentally tough individuals do not significantly differ in affect intensity (Crust, 2009). Furthermore, the study revealed no significant difference in affect intensity between males and females, suggesting that neither gender experiences emotions more or less intensely (Crust, 2009). These findings suggest mentally tough individuals maintain their composure better under pressure because they



are more effective in implementing cognitive strategies and coping with perceived adversity (Crust, 2009). This is consistent with the results of previous studies on coping and mental toughness (Nicholls et al., 2008). However, Crust (2009) stressed the need for follow up research in the area of mental toughness and affect intensity due to the limitations of the present study as well as the limited research in the area.

***Use of psychological strategies.*** Crust and Azadi (2010) found that mental toughness was significantly and positively related to the use of psychological performance strategies in both practice and competition settings. More specifically, their study revealed that emotional control, relaxation, and self-talk were all strategies that were positively associated with mental toughness in both practice and competition, albeit only at low to ~~mederate~~moderate levels (Crust & Azadi, 2010). In practice settings, mental toughness was also significantly positively related to automaticity (Crust & Azadi, 2010). In competition settings, total mental toughness was additionally found to be significantly positively correlated with goal setting (Crust & Azadi, 2010). However, the most powerful relationship found was the negative correlation between mental toughness and negative thinking (Crust & Azadi, 2010). Overall, as the authors found, the use of psychological performance strategies is most strongly related to the commitment subscale of the MTQ48 (Crust & Azadi, 2010). Crust and Azadi (2010) concluded the possibility that their findings were a reflection of the likelihood that athletes who are both mentally tough and highly committed are more prone to utilize performance enhancing psychological strategies.

***Risk taking.*** Connaughton et al. (2008) cited environmental factors as a key dynamic in the development of mental toughness (cf. Bull et al., 2005). To this point,

Crust and Keegan (2010), in order to expose oneself to stressful situations that promote the enhancement of being able to handle adversity, identified risk taking as a corollary of mental toughness. While risk taking is often shrouded with negative undertones, a willingness to take calculated risks can actually enhance and promote individual development and growth (Crust & Keegan, 2010). Bull et al. (2005) and Coulter et al. (2010) recognized that a willingness to take risks at appropriate times was an important attribute of mentally tough cricket athletes and soccer players, respectively. When an individual is faced with an important decision and chooses to take the challenging route rather than the comfortable one, that individual may risk anxiety but also gains the possibility to experience personal growth (Nesti, 2004). Along those lines, Crust and Keegan (2010) conceived that such risk taking was important for mentally tough athletes not only to avoid becoming apathetic, but also to discover meaningful lessons about the self.

In a quantitative study of athletes and their attitudes to risk-taking, Crust and Keegan (2010) found that not only was a willingness to take risks an essential attribute of the mentally tough, but that both confidence in abilities and seeing challenges as opportunities, two subcomponents of mental toughness, were significantly positively related to attitudes toward physical risk-taking. Moreover, the mental toughness subscale component of interpersonal confidence was found to be significantly positively related to attitudes toward psychological risk-taking (Crust & Keegan, 2010). Taking gender differences into account, it was found that men reported a greater tendency to engage in both psychological and physical risk-taking than women (Crust & Keegan, 2010; Nicholls et al., 2009). This could be accounted for due to the higher reported confidence

in abilities amongst men as compared to females. In other words, men may be more willing to take risks because they have more confidence in their abilities to deal with the risk (Crust & Keegan, 2010; Llewellyn & Sanchez, 2008).

***Injury rehabilitation.*** Within the health sciences, specifically sport injury rehabilitation, mental toughness has been the source of negligible consideration (Levy et al., 2006). However, an understanding of mental toughness and its relationship to sports rehabilitation would benefit health professionals and their patients due to an enhancement in the individual treatment programs as well as a better understanding of the characteristics of the patients (Mack & Ragan, 2008).

While mental toughness is often considered a positive attribute, there is a distinct possibility that it has detrimental effects as far as injury rehabilitation is concerned (Levy et al., 2006). Crust (2008) asked the question:

Is mental toughness about playing on while injured, risking long-term damage, and potentially reducing team efficiency; or is it taking the difficult decision to stop training and competing, seeking medical support, focusing on adhering to a program of rehabilitation, and returning to action as soon as possible? (p. 582)

Levy et al. (2006) found that more mentally tough individuals had both lower perceived injury severity and lower perceived injury susceptibility. While this threat appraisal may seem beneficial, it is this characteristic of mentally tough individuals that may negatively impact injury rehabilitation (Levy et al., 2006). In fact, in the field of sport injury rehabilitation research, it has been reported that less favorable threat appraisals actually are more beneficial in the adherence of prescribed rehabilitation modalities due to the motivating effect of seeing an injury as more severe (Taylor & May, 1996). Those results

align themselves with the research conducted by Levy et al. (2006), where it was found that individuals with lower threat appraisals (thus deemed not mentally tough) had a better adherence to both clinic and home based modalities than the mentally tough individuals. Due to the fact that mental toughness is associated with favorable threat appraisals, it is likely that the reason the mentally tough individuals are less likely to adhere to rehabilitation activities (both clinic- and home-based) is because they believe that the injury will likely not reoccur and that it is not severe enough to warrant total compliance to rehabilitation modalities (Levy et al., 2006). Additionally, due to higher levels of self-confidence and control, individuals who are mentally tough may receive less support from the health professionals than non-mentally tough individuals receive; thus they may not get the same benefits such as task appreciation or informational support (Levy et al., 2006). Furthermore, while mental toughness was positively associated with rehabilitation attendance, less mentally tough individuals were found to engage in more constructive behaviors during rehabilitation sessions (Levy et al., 2006).

While mental toughness may have a negative effect on various aspects of sport injury rehabilitation, there are positive consequences as well. Specifically, the favorable threat appraisal that mentally tough individuals possess plays an important role in that in having a positive perception of an injury, individuals may still successfully function and maintain wellness in areas of life despite suffering the setback of an injury (Funk, 1992). Similarly, whereas non-mentally tough individuals focus on the pain, more mentally tough individuals were better able to endure it due to their favorable threat appraisal (Levy et al., 2006). Along those lines, mental toughness was also found to be negatively

associated with pain-catastrophizing, which is when the pain is believed to be more intense than in actuality (Levy et al., 2006).

By using what is known about the relationship between mental toughness and the various components of injury rehabilitation, it is possible for health professionals to better serve injured athletes. For instance, Levy et al. (2006) suggest “In order to facilitate rehabilitation, it may be beneficial to improve the mental toughness of those individuals who are unable to cope with pain during rehabilitation” (p. 252). Additionally, by being cognizant of the psychological profile of the clients (i.e. mentally tough), health professionals would be conscious of the fact that certain individuals may have inhibited rehabilitation due to failure to adhere to certain modalities (Levy et al., 2006).

**Coaching mental toughness.** In a study done by Gucciardi et al. (2009) focusing on Australian football, the development and maintenance of mental toughness was found to be a long-term process that depended on multiple elements and influences interacting with one another. One of the factors found to be of the utmost importance was the athlete’s relationship with significant others; specifically peers, family members, parents, sport psychologists, and coaches (Gucciardi et al., 2009). Of these significant others, it was found that coaches replaced parents as the major source for developing mental toughness once children engage in youth athletics. “Unfortunately, little is known about coach perspectives on mental toughness in sport or their perceived role in the developmental process” (Gucciardi et al., 2009, p. 1485). Due to the fact that coaches have an imperative role in this development, there is a need for an augmented

consciousness by the coaches, family, and athletes, as well as coach training programs to further enhance the development of mental toughness (Gucciardi et al., 2009).

***Coaching that facilitates mental toughness.*** There are multiple approaches coaches can take in order to facilitate the development of mental toughness due to the fact that the training environment as well as the use of other specific strategies contributes to the development (Gucciardi et al., 2009). In studying the development of mental toughness in Australian football athletes, Gucciardi et al. (2009) found that the coach-player relationships were a significant factor. More specifically, this relationship ought to be long-term and built on both trust and respect (Gucciardi et al., 2009). With an established relationship, coaches can work to institute motivational environments in which characteristics fundamental to the development of mental toughness can be developed. From a broad perspective, a coach's role in developing mental toughness consists of exposing and educating the athlete to the various demands of the sport, as well as teaching for an understanding of the sport itself (Gucciardi et al., 2009). Specifically, Gucciardi et al. (2009) found self-belief, work ethic, personal values, self-motivation, tough attitudes, concentration/focus, resilience, handling pressure, and emotional intelligence to be attributes of a mentally tough individual that are not only developed through positive coach intervention, but are transferable to other aspects of life.

Bull et al. (2005) stressed the importance of allowing for individual variation in the development of mental toughness according to the different athletes' characteristics. The coach can facilitate an environment that caters to the needs of the individuals. In matching athletic instruction to the preferences of mentally tough individuals, a focus on training and instruction centered practices is preferred (Crust & Azadi, 2009). For

instance, Crust and Azadi (2009) found that athletes who possess a high belief in their abilities (an attribute of mental toughness) do not prefer an athletic environment that focuses on social support and democratic values such as participating in decision making. Instead, they appear to prefer to adhere to a leader in a task-oriented environment. In the same study, Crust and Azadi (2009) found that total mental toughness was not significantly related to a preference either for social support, democratic behaviors, or positive feedback. These findings are in support of Nicholls et al. (2008) findings that seeking support and venting emotions were not significantly associated with mental toughness. However, these conclusions are contrary to those drawn by Connaughton et al. (2008), Wolfenden and Holt (2005), and Gucciardi et al. (2009) that social support promotes the development of mental toughness. Additionally, it was found that mentally tough individuals were more prone to prefer environments where training and instruction were emphasized (Crust & Azadi, 2009). Crust and Azadi (2009) suggest that the reason that mental toughness is positively associated with a preference for training and instructive environments is because mentally tough individuals are committed and strive for athletic excellence. While Chelladurai (1993) concluded that the typical athlete desires a coach that provides instruction and training opportunities, Crust and Azadi (2009) contend that mentally tough individuals desire so even more. Furthermore, Gucciardi et al. (2009) found that coaches enhance the development of mental toughness by promoting challenging environments, having high expectations of the athletes, having athletes continually face adversity where game awareness skills and other important experiences are had, cultivating positive coach-athlete relationships, and focusing on overall development of the individual.

In an attempt to better understand mental toughness and its components, Jones et al. (2007) identified the essential attributes of a mentally tough performer. In doing so, their contention is that athletes, sport psychologists, and coaches can use the framework in order to individually address each dimension and identify the strengths and weaknesses that exist. Unfortunately, developing each important individual attribute of mental toughness entails the use of multiple strategies and methods, with each strategy impacting multiple facets of mental toughness (Gucciardi et al., 2009). Therefore, it is evident that the coach's responsibility in contributing to the development of mental toughness is complicated as well as multifaceted, in that the coach must utilize numerous strategies and techniques (Gucciardi et al., 2009). However, Bull et al. (2005) cautioned that rather than focusing on very specific mental skills training, emphasis should be placed on training the broader influencing factors of mental toughness, which they labeled "environment," "tough character," and "tough attitudes."

Taken as whole, general strategies that coaches can use to promote mental toughness involve: coach leadership (Connaughton et al., 2008; [Crust & Azadi, 2009](#); Gucciardi et al., 2009), having unambiguous expectations ([Gould et al., 2002](#); [Gould, Collins, Lauer, & Chung, 2007](#); Gucciardi et al., 2009; Martindale, Collins, & Daubney, 2005), emphasizing instruction as well as a philosophy of winning ([Crust & Azadi, 2009](#); Gucciardi et al., 2009, Martindale et al., 2005), modeling constructive, positive behaviors ([Gould et al., 2007](#); Gucciardi et al., 2009), **and** providing encouragement ([Gould et al., 2002](#); Gucciardi et al., 2009). Due to the magnitude of the role that coaches can potentially play in the development of mental toughness, coach-training programs would serve as an effective approach in enhancing mental toughness starting in youth sport



(Gucciardi et al., 2009). In doing so correctly, both athlete satisfaction and performance could conceivably be improved (Crust & Azadi, 2009).

***Coaching that impedes mental toughness.*** While coaches can play a considerable role in the development of mental toughness, they can also impede the process by making various mistakes. One mistake coaches can make is to let their desire for the player and coach success supersede the need for the development of the individual athletes (Gucciardi et al., 2009). Furthermore, a coach who facilitates an environment where athletes are only expected to do the bare minimum fails to expose the athletes to experiences that promote the development of self-belief, sport intelligence, physical toughness, and handling pressure, which are all crucial components of mental toughness (Gucciardi et al., 2009). Essentially, when a coach creates a negative environment where the focus is on curing the athletes' negatives without ever accentuating their positives, the development of mental toughness is being impeded (Gucciardi et al., 2009).

**Areas for improvement in mental toughness literature and research.** As the domain of mental toughness research continues to progress, there are multiple aspects that require further consideration in order to improve the construct's authenticity. For instance, the most prevalent method of collecting quantitative data is via self-report questionnaires, which allows for the risk of socially desirable responding (Crust, 2008). To control for this error, future research should employ measures that measure mental toughness from multiple sources (Crust, 2008). For instance, instead of only studying the athletes, researchers could study the perceptions of the athlete's mental toughness from other individuals such as sport psychologists, coaches, sport science practitioners,

parents, and even other players in order to allow for a more holistic understanding of mental toughness (Gucciardi et al., 2009; Jones et al., 2002; Nicholls et al., 2009).

The lack of conceptual clarity has also contributed to many of the discrepancies that exist today. As Jones et al. (2002) stated, “it appears, therefore, that virtually any desirable positive psychological characteristic associated with sporting success has been labeled as mental toughness at one time or another” (p. 206). Along those lines, many of the attributes identified as belonging to mental toughness were not identified via rigorous scientific research (Crust, 2008), and research should be conducted that determines what positive psychological attributes that have been mislabeled as mental toughness are not actually part of the mental toughness construct (Jones et al., 2007). Further investigation should ultimately lead to a commonly accepted consensus as to the definition and components of mental toughness.

Another facet of the research that is a cause for concern is the convergence of research on elite athletes and coaches (Bull et al., 2005; Fourie & Potgieter, 2001; Gucciardi et al., 2009; Jones et al., 2002, 2007; Thelwell et al., 2005). Based on findings that athletes of higher achievement levels are not significantly more mentally tough than other athletes, Nicholls et al. (2009) cautioned that research focusing solely on elite participants might be very limiting. Similarly, Crust (2008) explained the inherent danger of focusing exclusively on the elites:

The implicit assumption seems to be that successful athletes must be mentally tough without any attempt to objectively evaluate the mental toughness of participants. It is quite conceivable that for many of the participants, that physical

characteristics, abilities, or physiological factors were more influential in relation to success. (p. 578)

Furthermore, in focusing only on elite participants, there is the possibility that people will mistakenly attribute mental toughness as something that only elite athletes can possess (Crust, 2008).

The development of mental toughness is an area of research that requires further attention as well. For instance, research into the contribution of childhood upbringing on the development of mental toughness (Gucciardi et al., 2009) as well as research determining the extent to which mental toughness can be developed (Thelwell et al., 2005) would enhance the understanding of mental toughness. Furthermore, the role of sport psychologists and the impact of psychological interventions in the development of mental toughness needs to be investigated more thoroughly (Crust, 2008). Similarly, research investigating the relationship between motivational climate and mental toughness (Crust, 2008) as well as further research determining the leadership preferences of mentally tough athletes (Crust & Azadi, 2009) would benefit our understanding of the development of mentally tough individuals.

Longitudinal research on mental toughness would also prove valuable in order to discern if and how mental toughness and its components change over time (Nicholls et al., 2009). Similarly, it would be interesting to determine how athletes maintain their level of mental toughness over the course of their careers, and under what conditions their mental toughness may fluctuate (Jones et al., 2007).

Finally, an important question that needs to be answered is whether or not mentally tough athletes are as successful at coping with pressure and adversity outside of

their sport as they are at coping within their sport (Crust, 2008). Specifically, while mental toughness is commonly associated to athletic performance, it is also necessary to establish transferability to other aspects of an athlete's life in order to garner further support for the perception that mental toughness is a trait-like construct or personality disposition rather than a context-specific psychological approach. Support to this point includes a reported genetic aspect to mental toughness (Horsburgh et al., 2009), evidence that mental toughness does not vary from sport to sport (Nicholls et al., 2009), consistent correlations found between use of performance strategies and mental toughness (Crust & Azadi, 2010; Nicholls et al., 2008), and results from a qualitative study in which "the participants emphasized that mental toughness is not just about dealing with aspects of competition, but also with training and general lifestyle that can present their own demands" (Jones et al., 2002, p. 214).

**Mental toughness conclusion.** While the research in the field of mental toughness has produced varying and sometimes contradictory results, one conclusion can be agreed on by all: mental toughness is a desirable construct with mostly positive consequences. As researchers in the field continue to work towards a common conceptual understanding of mental toughness and its attributes, it is important to appreciate the quantitative research that has produced results that contribute to this understanding. Thanks to this effort, there is an increased appreciation for the scope of the individual that mental toughness influences. From the cognitive, to the behavioral, and even to the physical aspects of human performance, mental toughness has been repeatedly implicated as a contributing factor. Mental toughness has not only been found to contribute to an athlete's propensity for successful performance, it is also believed that

coaches and practitioners can potentially facilitate the development of mental toughness. In a world where everyone is constantly looking for a way to enhance performance, the possibility of developing mental toughness has important implications for coaches, sports psychologists, and athletes.

### **Servant Leadership Literature**

As Soucie (1994) astutely recognized, “to a large degree, leaders are perceived to be the causal agents who determine the success or failure of an organization” (p. 10). This can be seen in everyday situations where coaches are fired due to a team’s win-loss record or business managers lose their job because of a lack of productivity or profits. Being in charge of the human component of an organization ascribes an individual to a level where they are seen to have a profound influence and responsibility over outcomes (Soucie, 1994).

Due to the profound importance of and reliance on human productivity, Likert (1967) identified the management of human resources as the most critical aspect in organizations. This is emphasized by the fact that almost all working adults spend approximately half of their day being supervised and delegated to by managers (Kotter, 1982). Furthermore, in various domains of society, the desire for effective leadership is on the rise (Gardner, 1990). In recent years, there has been an increased focus on employee well-being and innovation, resulting in greater importance of those leadership styles that epitomize ethical and caring behavior (van Dierendonck, 2011). This is reflected in the shift of leadership studies from predominantly focusing on transformational leadership towards attention being given to the relational aspect of leader-follower interactions (Avolio, Walumbwa, & Weber, 2009).

In adding the component of social responsibility to transformational leadership (Graham, 1991), the model that adheres to the aforementioned leadership description is that of servant leadership, and it may satisfy the demand for ethical, people-centered management due to its emphasis on social responsibility and adhering to the needs of others (van Dierendonck, 2011). When compared to more conventional models of leadership, servant leadership has the potential to drastically alter one's understanding of organizational structure (McGee-Cooper & Trammell, 2002). This is because the basic premise of servant leadership is unique in that, "it is not the lot of the leader to be served but rather his/her privilege to serve" (Neuschel, 2005, p. 3). While leaders such as Nelson Mandela and Martin Luther King Jr. (Ferch, 2003) as well as Jesus Christ (Laub, 1999) have embodied this ideology, Greenleaf's (1977) foundational work on servant leadership has both contemporized and brought the concept to the forefront of leadership studies and practice.

**Leadership.** The notion of leadership is often seen as analogous with concepts such as power, authority, management, administration, and supervision (Soucie, 1994); however, leadership and status are not always equivalent, as "even in large corporations and government agencies, the top-ranking person may simply be bureaucrat number 1" (Gardner, 1990, p. 2). Nonetheless, due to the complexity of these aforementioned concepts, the literature currently lacks a comprehensive understanding of what leadership is (Smith, Montagno, & Kuzmenko, 2004). However, there does exist some continuity amongst the various leadership definitions. For instance, Yukl (1994) identified the commonality of most models being that leadership involves an influence process and it occurs in a group or an organization, but that is the extent of the resemblances. From

these basic tenants, a practical definition provided by Hammermeister (2010) follows:

“leadership is the art and science of persuading others to achieve personal as well as group goals” (p. 188).

Similar to the lack of a consensus on the definition, leadership theorists are unable to subscribe to the same notions as to what attributes an effective leader must possess (Smith et al., 2004). Despite this disagreement, many studies have investigated the necessary components of leadership effectiveness (e.g. Kotter, 1982; McClelland, 1985; Miner, 1978; Yukl, 1994). In order to identify the elements of effective leadership, leadership theorists often investigate how managers influence subordinates through the use of power, traits, skills, behaviors, and situational conditions. For instance, Kotter (1982) observed that effective leaders utilize varying forms of power to influence subordinates. Podsakoff and Schriesheim (1985) contributed to this understanding by identifying the use of personal power, such as charisma and friendship, as being more effective in enhancing subordinate’s satisfaction and performance than the use of positional power, such as the formal authority to punish and reward. Similarly, McClelland’s (1985) research revealed that leaders with an institutional power orientation (desire for power in order to direct the efforts of members to achieve goals) were more effective than leaders who were more concerned about personal power (authority over others). Additionally, Yukl (1994) identified energy level and stress tolerance, self-confidence, internal locus of control, emotional maturity, integrity, as well as persuasiveness, analytical ability, speaking ability, and memory to be character traits that contribute to leadership effectiveness. Additionally, Miner (1978) found that a leader’s

desire for power as well as their need for achievement contributed their effectiveness as a leader.

Despite the lack of consensus that exists regarding the components of an effective leader, Soucie (1994) concluded that an individual's leadership abilities will influence a subordinate's level of conformity; from being either 'enthusiastically committing,' 'indifferent complying,' 'reluctant obedience' or even 'full resistance.' Furthermore, the lack of an effective leader can have detrimental effects on the group. From a sporting perspective, Hammermeister (2010) asserts that a group without an effective leader is likely reflected negatively in their goal achievement, group dynamics, administration, and athletic performance. Furthermore, individuals on a team with ineffective leadership are more prone for athletes to display behavior problems (Hammermeister, 2010).

In today's world, change is accelerating and organizations move much faster than before, highlighting the need for a leadership style that can adapt to these demands. Unfortunately, the approach to training new leaders is still predominantly based off of the conventional model of leadership which developed during the Industrial Revolution, where hierarchy reigned supreme with the leaders possessing all of the information, making all of the decisions, and controlling all of the power (McGee-Cooper & Trammell, 2002). The subordinates simply did what they were instructed to do and were rewarded for their conformity and obedience (McGee-Cooper & Trammell, 2002). Designed for enhanced efficiency, this sort of work and leadership model has led to a dissatisfaction amongst the working population as well as a moral decline in the work environment (Ferch, 2003). However, due to the dynamism of the current organizational environment, this traditional education is seen by some as a negative, as individuals



"must *unlearn* their reliance on the past in order to see new, more complex patterns emerging" (McGee-Cooper & Trammell, 2002, p. 142).

**Leadership in sports.** While leadership theories and their components have long been allocated to the business world, they are now also becoming applicable to athletics, from youth recreational leagues to the professional level as well (Carthen, 2011). In fact, implementing and adapting leadership models from industrial and organizational psychology to the realm of athletics theory is customary for sport leadership theorists (Rieke et al., 2008), due to the believed similarities between sport teams and corporate settings (Chelladurai, 1980). However, Soucie (1994) warns that while there are many resemblances between the relationships of the coach-athlete and the manager-subordinate, research on one does not necessarily apply to the other because coaching behavior and managerial behaviors are not precisely applicable to one another. Conversely, Martens (2004) stresses the importance of coaches not only possessing extensive knowledge of their sport, but also possessing the administrative abilities of a managerial executive. Despite the recognition that differences between athletics and business exist (e.g. Chelladurai, 1980), the considerable parallels that can be drawn between the two indicate the existence of at least some functional conceptual crossover (Rieke et al., 2008).

As in other aspects of society, effective leadership is important in the sporting context (Chelladurai, 1992). At the top level of athletics, it is the responsibility of sport administrators to empower their subordinates to institute and attain goals (Soucie, 1994). Down the chain of command, it is the coach's responsibility to effectively lead their athletes. In this regard, the behaviors of coaches have been found to relate to various

athlete characteristics, such as an athlete's mental skills, their motivation and satisfaction, and even their performance (Amorose & Horn, 2000; Gould, Medbery, Damarjian, & Lauer, 1999). Specifically, demonstrating more encouragement and providing positive feedback following poor performance was found to be associated with athletes who were more confident, preferred challenges, exhibited more effort, and more greatly enjoyed their athletic experience (Black & Weiss, 1992). Additionally, Chelladurai (1993) found that in some situations, athletes prefer coaches who exhibit democratic behavior as well as coaches who took into account the players' opinions and feelings. Similarly, in a study of former athletes training to become coaches, Stewart (1993) ascertained preferential characteristics of coaches. Among many identified traits, caring about players, being honest, being a good teacher of the sport, and motivating athletes were all qualities of the "best" coaches. Conversely, over stressing winning and disrespecting or being impersonal to athletes were some of the qualities of the "worst" coaches.

Unfortunately, rather than focusing on interpersonal relationships that athletes seem to prefer, leaders in the realm of athletics seems to primarily emphasize goals and task completion (Branch, 1990; Soucie, 1994). Along these lines, authoritative sport leadership, derived from the Western style of leadership of influencing others, is the dominant form of leadership in athletics as it does have its advantages in that it is quick and does not require a sophisticated knowledge of the followers (Lombardo, 1987). However, Chelladurai (1993) emphasized that it may be inappropriate to criticize a coach for possessing some autocratic tendencies, as some team sports warrant more autocratic decision-making and some athletes even prefer it, as long as the decisions are made to improve both the welfare and performance of the group. Furthermore, Chelladurai

(1993) pointed out that satisfaction with leadership for autocratic versus participative or democratic styles of coaching varies according to sport type, gender, as well as other variables. Therefore, in the proper context, both autocratic and democratic styles of coaching appear to have a place in coach leadership. Consequently, an individual normally falls on a continuum between the two leadership styles, with the best leaders able to successfully adapt either style, depending on what the situation calls for (Martens, 1987).

**Servant leadership.** Servant leadership is distinctive in its approach to leadership, and this uniqueness is what addresses the failures of traditional leadership models (Ferch, 2003). Whereas traditional models focus on the ability to influence (often by coercion) subordinates, the servant leader model simply focuses on the relationship between leader and follower (van Dierendonck, 2011). As McGee-Cooper and Trammel (2002) identified, servant leadership is unique in that the leader inverts the traditional leadership model so that the leader is on the bottom of the pyramid and is in a position to serve others. In this, serving and leading become relatively interchangeable: "being a servant allows a person to lead; being a leader implies a person serves" (van Dierendonck, 2011, p. 4). This is not a model of leadership that everyone is likely to agree with; however, as Ferch (2003) stated:

Philosophically, if one believes in the dignity of the person, the ideas of servant-leadership and the experience of leading or being led from a servant perspective not only makes sense, they contain the elegance, precision, and will power necessary for human development. (p. 2)

Ferch (2003) argues that foundation of servant leadership is that people have inherent worth that is worthy of recognition. Similarly, the servant leader believes that they are no more superior or important than their subordinates and that every member of the organization should have equal rights to the information and vision of the organization (Smith [et al.](#), 2004). Essentially, the basis of servant leadership is the importance of morality and ethical behavior (Jordan, 1996).

While varying models of leadership attempt to address the deficiencies that commonly plague management scenarios, the emerging theory of servant leadership is possibly the highest ordered model of leadership to exist (Hammermeister, 2010). It has been described as the “soul of leadership” (Fairholm, 1998) and is viewed by some as a life philosophy rather than solely a leadership model (Jordan, 1996). However, despite its burgeoning popularity, servant leadership is a concept that lacks a consensus in both its definition and its conceptual framework (van Dierendonck, 2011).

**Models of servant leadership.** The person responsible for first coining the term *servant leader* is Robert Greenleaf, done so in an essay entitled *The Servant as Leader*, which is the first chapter of his 1977 seminal work on the concept. However, in spite of coining the term, Greenleaf failed to ever provide an adequate definition of *servant leadership*. As such, numerous interpretations of servant leadership exist due to leadership theorists taking it upon themselves to further interpret the concept. At present, multiple differing aspects of servant leadership have been deduced from Greenleaf’s original work. For instance, Graham (1991) focused on the inspirational and moral facets of servant leadership while Buchen (1998) concerned himself with the future applications of servant leadership. Of the more prominent models, there exists similarities and

discontinuities as well: Spears' (1998) model deals with the character of servant leaders and Laub's (1999) is interested in the behavioral components of servant leadership while Patterson's (2003) is a combination of the two. While their different theories coincide to some degree, many of the attributes identified remain unique to individual models; thus, the numerous models of servant leadership may actually serve to confuse one's understanding rather than advance it (van Dierendonck, 2011). In order to expound on one's understanding of servant leadership, the following section will depict and emphasize the more influential models of servant leadership that exists.

**Greenleaf (1977).** As aforementioned, Greenleaf is the creator of contemporary servant leadership via an essay inspired by Herman Hesse's *The Journey to the East*. In Hesse's *Journey to the East*, a group of men are on a journey and are accompanied by Leo, a well-liked, charismatic servant who does the groups' errands. The journey is abandoned upon Leo's disappearance, as the group fails to function without him. Later, a member of the journey learns that the servant, Leo, was actually the great leader of the Order that sponsored the journey. To Greenleaf (1977), the moral of the story is that "the great leader is seen as servant first, and that simple fact is the key to his greatness" (p. 7).

In his seminal work on the topic, Greenleaf (1977) asked and answered the question, "who is the servant-leader?" His answer: "The servant-leader *is* servant first...It begins with the natural feeling that one wants to serve, to serve *first*. Then conscious choice brings one aspire to lead" (p. 13). Essentially, the difference between the servant leader and other leadership models is that the servant leader ensures that the "highest priority needs" of the group members are being met (Greenleaf, 1977).

Furthermore, in order to assess the effectiveness of servant leadership, one needs to identify:

Do those served grow as persons? Do they, *while being served*, become healthier, wiser, freer, more autonomous, more likely themselves to become servants? *And*, what is the effect on the least privileged in society; will they benefit, or, at least, not be further deprived? (Greenleaf, 1977, pp. 13-14)

In doing this, the problems that ail society may begin to be repaired by creating a population of society-shaping leaders (Greenleaf, 1977).

In order to serve the needs of others, Greenleaf identified attributes of the effective leader. One such attribute is initiative. More than inspiration, “a leader initiates, provides the ideas and the structure, and takes the risk of failure along with the chance of success” (Greenleaf, 1977, p. 15). A leader must also both listen and understand, traits that the typical leader seem to fail to possess when it comes to dealing with difficulties (Greenleaf, 1977). A leader must also possess ability in both language and imagination.

A leader must also be able to “withdraw and reorient oneself” (Greenleaf, 1977, p. 19), in order to distinguish between the level of importance of the tasks that need to be done. Furthermore, Greenleaf (1977) asserts that being able to pace oneself via withdrawal is how a servant leader can make the most out of their resources in serving others to the best of their ability.

Servant leaders must always accept and empathize with people, never reject (Greenleaf, 1977). Specifically, the servant leader accepts people for who they are and empathizes with them, which “requires a tolerance of imperfection” (Greenleaf, 1977, p.

21). However, the servant leader does occasionally fail to accept a person's effort, as they may be capable of producing better performances.

Successful leaders also often possess superior intuition as well as foresight (Greenleaf, 1977). As Greenleaf (1977) describes the two concepts, a leader needs "to have a sense for the unknowable and be able to foresee the unforeseeable" (pp. 21-22). Whereas intuition is generalizing based on what has previously happened, foresight is a deduction of what is going to happen in the future and when it is going to happen (Greenleaf, 1977). To Greenleaf (1977), foresight is a critical attribute of a leader in that, without the ability to foresee events such that circumstances force the leader's hand, the leader has lost his/her effectiveness.

Leaders are also more aware of the world around them, allowing them to perceive more than most (Greenleaf, 1977). This attribute allows leader to be more prepared to face future challenges because they know more. It also allows a leader to take a step back see him/herself in the context of a situation and sort out his/her obligations in order to deal with the more important.

Persuasion is another desirable attribute of a leader. Simply put, "leadership by persuasion has the virtue of change by convincement rather than coercion. Its advantages are obvious" (Greenleaf, 1977, p. 30).

Finally, Greenleaf highlighted the importance of having the ability to conceptualize, heal, and build community. All of the aforementioned traits of a leader contribute to the leader's ability to serve others, which is the very essence of servant leadership. While Greenleaf has never provided a specific definition of servant leadership, these behaviors serve to frame his conceptual depiction of the servant leader.

*Spears (1998)*. In interpreting Greenleaf's works, Spears extrapolated ten characteristics that the servant leader possesses. In doing so, Spears is recognized as not only being one of the first, but perhaps the most influential person to have interpreted Greenleaf's concepts and have illustrated the ideas into a model that portrays the servant leader (van Dierendonck, 2011). Specifically, the ten characteristics of a servant leader according to Spears are:

1. Listening: Servant leaders identify and clarify the will of the group by listening receptively to others as well as listening to one's own inner voice.
2. Empathy: Servant leaders strive to understand and empathize with others.
3. Healing: Servant leaders have the potential to heal others as well as the self.
4. Awareness: Servant leaders are strengthened through their generally awareness, and even more so through their self-awareness.
5. Persuasion: ~~Servant leaders is~~Servant leaders are effective at building consensus within groups through the use of persuasion, not coercion derived through positional authority.
6. Conceptualization: Servant leaders look beyond the day-today realities in order to nurture their abilities to "dream great dreams."
7. Foresight: Servant leaders have the ability to foresee the likely outcome of a situation in the future.
8. Stewardship: Servant leaders hold their institution in trust for the greater good by being committed to serving the needs of others.



9. Commitment to the growth of people: Servant leaders are committed to the personal, professional, and spiritual growth of every individual in their organization.
10. Building community: Servant leaders build community among all the individuals of the organization.

In possessing and applying these traits, the servant leader serves the needs of the followers, which is the primary purpose of servant leadership rather than productivity (Spears, 1998). Furthermore, the ten characteristics proposed by Spears present an individual a functional starting point as to where they must begin to be a servant leader (Matteson & Irving, 2006).

While both influential and widely accepted, the model proposed by Spears is not without its setbacks. Specifically, van Dierendonck (2011) identified the lack of differentiation amongst the intrapersonal and interpersonal aspects of the characteristics of servant leadership as a hindrance to future research due to the characteristics being inadequately operationally defined.

*Laub (1999)*. Due to the lack of objective and quantifiable research and the need for an operationalized definition, Laub undertook the study of servant leadership. In his comprehensive review of the servant leader literature, Laub identified over sixty characteristics that have been classified as relevant to servant leadership. In utilizing a Delphi method (a panel of experts completing surveys), the numerous characteristics were organized into six key clusters of servant leaders characteristics:

1. Valuing people: Servant leaders believe in people, serve the needs of others first, and receptively listen to others.

2. Developing people: Servant leaders provide opportunities for learning and growth, model appropriate behavior, and build up others through encouragement.
3. Building community: Servant leaders build strong relationships, work collaboratively with others, and value individual differences.
4. Displaying authenticity: Servant leaders are willing to learn from others, display integrity and trust, and are both open and accountable for their actions.
5. Providing leadership: Servant leaders envision the future, take initiative, and clarify goals.
6. Sharing leadership: Servant leaders promote others, share power and status, and create a shared vision.

From this, Laub (1999) defined servant leadership as:

Servant leadership is an understanding and practice of leadership that places the good of those led over the self-interest of the leader. Servant leadership promotes the valuing and development of people, the building of community, the practice of authenticity, the providing of leadership for the good of those led, and the sharing of power and status for the common good of each individual, the total organization, and those served by the organization. (p. 83)

Additionally, Laub developed a scale of servant leadership, which will be discussed later on.

**Russell and Stone (2002).** Citing the lack of a functional definition and the need for empirical research, Russell and Stone examined the existing literature in order to develop a servant leadership model that has practical applicability. To achieve these ends, the model of servant leadership proposed by Russell and Stone involved the

interactions of variables (an individual's attributes) that produce servant leadership. As such, Russell and Stone categorized attributes as either functional or accompanying attributes of servant leadership. With the independent variable being an individual's core beliefs, the moderating variables (an individual's accompanying attributes) interact to determine the form and efficacy of an individual's servant leadership, which is manifested in the individual's functional attributes.

Specifically, the accompanying attributes of the individual that interact with their values to determine the form and efficacy of their servant leadership are communication, credibility, competence, stewardship, visibility, influence, persuasion, listening, encouragement, teaching, and delegation (Russell & Stone, 2002). The outcome of this interaction is servant leadership, and is demonstrated in the individual's functional attributes, which are his/hers visions, honesty, integrity, trust, service, modeling, pioneering, appreciation of others, and empowerment (Russell & Stone, 2002).

Taking the model a step farther, the individual's servant leadership, as manifested by the functional attributes, then becomes a new independent variable that interacts with and affects an organization's culture, the attitudes and behaviors of the employees, and ultimately affects the dependent variable of organizational performance.

***Patterson (2003):*** Due to the failure of transformational leadership to address certain phenomenon, Patterson depicted servant leadership as an extension of transformational leadership. Specifically, Patterson regarded transformational leadership as failing to address the leadership characteristics of love, humility, altruism, and being visionary for followers. Due to this perceived disconnect, Patterson developed a multi-dimensional model of servant leadership that encompasses a) love, b) humility, c)

altruism, d) vision, e) trust, f) empowerment, and g) service. To Patterson, these seven dimensions of leadership are reflected in an individual's virtues. Furthermore, the dimensions of servant leadership are interconnected in that leadership begins with love, interacts with humility, altruism, vision, and trust, which leads to empowerment and ultimately service.

***Other portrayals of servant leadership.*** In addition to the aforementioned prominent servant leadership models, numerous other individuals have also reflected on what servant leadership is and how it can be manifested in the organizational environment. For instance, based off of the aforementioned conceptual models, van Dierendonck (2011) similarly identified six characteristics of servant leadership behaviors as experienced by followers: servant leaders empower and develop people, show humility as well as authenticity; accept people for who they are, provide direction, and are stewards of their organization for the good of the people. Additionally, Batten (1998) identified 37 values that servant leaders practice on a daily basis and identified the promises that a servant leader should make.

Whereas leadership may traditionally be seen as exercising power over a subordinate, the servant leader does the opposite; they empower others (Fairholm, 1998; Russell, 2001). Empowering others allow a servant leader to build trust within an organization (Joseph & Winston, 2005), which is a critical component of servant leadership (Fairholm, 1998; Greenleaf, 1977), for "trust holds together servant-led organizations" (Russell, 2001, p. 81). Other behaviors of servant leadership cited throughout the literature include, but are not limited to, expressing appreciation of others (Russell, 2001), encouraging the psychological needs of others (van Dierendonck, 2011),

modeling positive behaviors (Russell, 2001), encouraging and inspiring hope (Jordan, 1996), making tasks dynamic and appropriate for individuals (van Dierendonck, 2011), creating an environment where individuals, including the servant leader, can ask for and grant forgiveness (Ferch, 2003), treating others fairly (Mayer, Bardes, & Piccolo, 2008), and creating a sense of community within the organization (Smith et al., 2004). Furthermore, servant leaders display humility and are not afraid to admit that they are not perfect and can learn from other individuals (van Dierendonck, 2011). The behaviors of a servant leader ultimately boil down to the values of the individual (Russell, 2001). Along with the motivation to both lead and serve (van Dierendonck, 2011), the ultimate success of a servant leader is dependent on those values (Russell, 2001).

**Effects of servant leadership.** While being a servant leader is difficult due to the need for patience and tolerance of imperfection (Neuschel, 2005), the positive consequences of utilizing servant leadership in organizations are numerous. In a servant led environment, followers feel encouraged to strive to reach their potential and are generally more committed (van Dierendonck, 2011). Additionally, perceived team effectiveness is enhanced in servant led groups. Similarly, servant leadership has been reported to positively correlate with job satisfaction in many facets of organizations (Cerit, 2009; Hammermeister et al., 2008; [Laub, 1999](#); Mayer [et al.](#), 2008; Rieke et al., 2008). Lastly, A central consequence of servant leadership is the cultivating of trust amongst followers as well as trust in the leader and the organization (Farling, Stone, & Winston, 1999; Joseph & Winston, 2005; Russell, 2001; Russell & Stone, 2002). As Russell (2001) affirmed, "trust holds together servant-led organizations" (p. 81). Overall,

in theory the servant leadership model promotes a moral atmosphere with strong interpersonal relationships, where individuals are valued, and production is improved.

**Servant leadership in sport.** As previously mentioned, servant leadership is an emerging theory that is being utilized in a diverse collection of organizations today (Hammermeister, 2010). Although not a model that is specific to athletics, sport is one such institution that is believed to be appropriate for implementation of the servant leader model (Hammermeister et al., 2008; Rieke et al., 2008). Coaches specifically are a population with much to gain due to their inherent capacity to influence their athletes from an emotional, moral, and social perspective (Hammermeister et al., 2008). Yet despite the apparent value that servant leadership can potentially have on meeting the needs of athletes, research in the field is meager and the relationship between servant-leader behaviors and athletes' emotional, moral, and social development remain mostly unknown (Hammermeister et al., 2008).

In one of the initial studies of the application of the servant leadership model in sport, Hammermeister et al. (Hammermeister et al., 2008) studied 251 collegiate athletes to assess the impact of coaching behavior on athletes' intrinsic motivation, mental skills, and satisfaction. The hypothesis that servant leadership would increase an athlete's satisfaction was supported in the study. Specifically, it was found that athletes of servant leader coaches had higher satisfaction in their individual performances as well as their team performance than did athletes of "weak" leaders. Additionally, servant leader led athletes were more satisfied in their personal treatment and their training and instruction. Hammermeister et al. (2008) suggested that elements of servant leadership (specifically trust, inclusion, humility, and service) can serve to promote satisfaction amongst athletes.

Furthermore, the study revealed that servant-leader led athletes had enhanced interest and enjoyment levels, superior athletic coping skills, were more self-confident on some variables, believed themselves to be more competent, were more respectful, scored higher on task orientation, and were identified as more coachable when compared to athletes of poor leaders (Hammermeister et al., 2008). It was also found that coaches who were trusting and service oriented has athletes that felt they were receiving better training and instruction when compared to athletes of coaches who were not considered service-oriented or as trusting (Hammermeister et al., 2008). Hammermeister et al. (2008) further suggested that the athletes of servant leader coaches possessed more mental toughness. Overall, the results of the study suggest that the servant leadership model in sport merits further attention, for it is possibly a valuable model in the realm of athletic leadership.

In a follow up to the Hammermeister et al. (2008) investigation, Rieke et al. (2008) studied the efficacy of servant leadership in a high-school sport scenario. In classifying coaches as servant versus non-servant leader coaches, the subscale of personal treatment was the most powerful discriminator between the two, suggesting that treating the athletes well is an important, positive attribute that servant leader coaches possess (Rieke et al., 2008). Similar to the results of Hammermeister et al. (2008), when compared to athletes trained by non-servant leaders, it was found that athletes who were coached by servant leaders perceived their training and instruction to be of higher quality, their team performance expectations were elevated, athletes were more satisfied, more intrinsically motivated, more task oriented, were more mentally tough, and even performed better (Rieke et al., 2008). More specifically, positive correlations were found

between the servant leadership subscale of trust/inclusion and number of wins as well as the service subscale of servant leadership, perceived team performance expectations, and number of wins (Rieke et al., 2008). The implications of the servant leader coaches being more successful than non-servant leaders implies that the emphasis of winning is not necessary in order for a team to achieve, and that by implementing servant leadership techniques into coaching, athletes can perform better as well as be psychologically healthier (Rieke et al., 2008).

By showing correlations between servant leadership and a variety of psychological as well as performance variables, the aforementioned studies emphasize the viability of servant leadership in sport (Hammermeister et al, 2008; Rieke et al., 2008). While these results seem to contrast traditional notions that autocratic behaviors instill mental toughness in athletes, "this paradoxical approach to developing toughness may well serve as a foundational skill for coaches of the future as older fear-based models of coaching go by the wayside" (Hammermeister, 2010, p. 192). Additionally, Rieke et al. (2008) conjectured that this new information for developing an athlete's mental skill set would offset pressures that coaches feel when choosing between integrity and winning, because they may be one in the same. As Rieke et al. (2008) stated, "perhaps the most important game within the game for coaches to win is the 'character' one" (p. 237). While Hammermeister et al. (2008) stress that further research must be conducted to completely understand servant leadership in sport, it appears that a democratic leadership model that stresses empowering athletes is the direction of the future of sport leadership.



**Servant leadership compared to other leadership models.** While being a unique model of leadership, servant leadership has been compared to other previously existing leadership models.

*Servant leadership versus transformational leadership.* Both transformational leadership and servant leadership are founded in charismatic leadership (Smith et al., 2004). As such, they share many of the same qualities (Smith et al., 2004). For instance, both transformational and servant leadership are moral and inspirational (Graham, 1991) as well as they both value the uniqueness of the individual and their contributions to the group (Russell, 2001). In essence, servant leadership and transformational leadership are two leadership styles that represent a movement toward follower-oriented leadership models (Smith et al., 2004).

Despite the conceptual similarities between the two theories of leadership, they are nonetheless unique as they do not lead to the same outcomes and the context for their applications are different (Smith et al., 2004). Furthermore, the actual conceptual foundations of the two models are also unique (Smith et al., 2004). Whereas servant leadership focuses on the needs and wellbeing of the individuals, transformational leadership is ultimately meant to serve the organization (Graham, 1991; Smith et al., 2004). It follows then that the servant leader's motivation for and determination of success is based off of the follower's well-being and growth, while the transformational leader's motivation and success is determined by whether or not the organization performed at a high level (Smith et al., 2004). While both servant and transformational leaders inspire followers, transformational leaders do so for the sake of organizational success, not for the followers' well-being (van Dierendonck, 2011). Also, this

encouragement is often different depending on the leadership style, with servant leaders inspiring people to develop their potential and transformational leaders inspiring people to be more creative and innovative (Smith et al., 2004).

The context for the use of both servant leadership and transformational leadership differ as well (Smith et al., 2004). Graham (1991) suggests that servant leadership is more conducive for more passive followers. Smith et al. (2004) recommend that transformational leadership is better suited for more dynamic environments and servant leadership be more effective in static environments. For instance, Smith et al. (2004) suggest that a fast-paced business facing global competition may be better served by a transformational leader who is capable of making quick decisions and adapting quickly to adhere to external requirements placed upon the organization. Because of the amount of input given from followers, the decision-making process in servant leader led organizations is not time-sensitive, and thus not conducive to making fast-paced decisions (Smith et al., 2004). However, others believe servant leadership is relevant to all organizations (Russell & Stone, 2002). Additionally, servant leadership may find a place in an organization once it reaches maturity and concern for employee personal growth takes precedent (Smith et al., 2004). Servant leadership also is an effective leadership style for not-for-profit organizations and other community based organizations not faced with constant dynamism (Smith et al., 2004). For these reasons, Smith et al. (2004) believe that servant leadership promotes a “spiritual generative culture” which is different from the “empowered dynamic culture” that transformational leadership encourages.

Overall, servant leadership is theoretically different from transformational leadership in that servant leadership encompasses humility, authenticity, and interpersonal acceptance, while transformational leadership does not (van Dierendonck, 2011).

***Servant leadership versus self-sacrificial leadership.*** Another leadership model that servant leadership has been compared to is self-sacrificial leadership. Self-sacrificial leadership transpires upon a leader surrendering personal or professional benefits for the good of the group or organization (Matteson & Irving, 2006). According to Choi and Mai-Dalton (1999), self-sacrificial leadership is “the total/partial abandonment, and/or permanent/temporary postponement of personal interests, privileges, and welfare in the (1) division of labor, (2) distribution of rewards, and (3) exercise of power” (p. 399). From a comprehensive perspective, self-sacrificial leadership is utilized in organizations to successfully adapt to changing situations (Choi & Mai-Dalton, 1998). This is achieved by the followers of self-sacrificial leaders attributing legitimacy and charisma to the leader as well as reciprocating the self-sacrificial behaviors (Choi & Mai-Dalton, 1999). Along these lines, followers of self-sacrificing leaders were found to be more committed to their organizations (De Cremer, van Dijke, & Bos, 2004) as well as perform at higher levels while rating their leaders as more effective (van Knippenberg & van Knippenberg, 2005).

Matteson and Irving (2006) identified empathy, developing people, building community, providing leadership, empowering followers, and serving followers all as constructs that fall within both the servant and self-sacrificial leadership models. However, the servant leadership components of listening, healing, and stewardship are all

missing from the self-sacrificial model (Matteson & Irving, 2006). Additionally, while both models highly regard followers, little research sustains the notion that self-sacrificial leaders share power, which is another important facet of the servant leadership model. Finally, whereas servant leadership is largely based on considerate acts for the sake of the followers, the acts of self-sacrificial leaders are done for the sake of the organization (Matteson & Irving, 2006). Consequently, while there are multiple elements of servant leadership and self-sacrificial common to both leadership models, due to divergent qualities, it is evident that the two theories are distinct from one another (Matteson & Irving, 2006).

**Measuring servant leadership.** Leadership theory is an area that affords researchers many opportunities to study the various applications and effects of servant leadership in practice. However, in order to more fully comprehend the effects of servant leadership, there is a need for instruments that are both valid and reliable (van Dierendonck, 2011). While predominantly qualitative case studies have thus far been the most common form of servant leadership research (van Dierendonck, 2011), there is much to be gained through quantitative research as well. Unfortunately, due to researchers developing unique scales often based on their own individual interpretations of servant leadership (van Dierendonck, 2011), servant leadership has been operationalized in multiple ways. Nevertheless, the emergence of a valid and reliable instrument can assist in bringing conceptual clarity to the ambiguity that surrounds servant leadership (Page & Wong, 2000).

As mentioned, there exist numerous servant leadership measurement instruments. One of the oldest and most popular in terms of frequency of use is the Organizational

Leadership Assessment (OLA: Laub, 1999). The OLA provides scores for the six clusters identified by Laub (1999) as the key characteristics of servant leadership. While possessing strong internal consistency (Cronbach's alpha of greater than 0.90 for each cluster), a factor analysis showed that the OLA was only two-dimensional instead of being six-dimensional as was intended (Laub, 1999). However, despite the lack of multidimensionality, the OLA made an important contribution to the area of servant leadership measurement, as it was the first push toward empirical research (van Dierendonck, 2011). Additionally, regardless of not being multidimensional in nature, the OLA has use and has been used as an instrument that measures the main factor of servant leadership (van Dierendonck, 2011).

Another instrument that has received a lot of use is the Servant Leadership Profile (SLP: Page & Wong, 2000) and its revised form, the Revised Servant Leader Profile (RSLP: Wong & Page, 2003). Revised to enhance its psychometric properties, the RSLP measured seven factors of servant leadership (down from the twelve measured by the SLP), and has been used by over 100 organizations and universities (Wong & Davey, 2007). However, after continual data collection, Wong and Davey (2007) reduced the factors from seven to five. A criticism of the SLP and RSLP appears to be its factorial validity (van Dierendonck, 2011), meaning it may not be as multidimensional as it is proposed to be. This has been further demonstrated by Dennis and Winston (2003) who performed factor analysis on the SLP and found the SLP to be only three-dimensional.

Consistent with the findings of Dennis and Winston (2003), in a study of servant leadership in sport, after performing factor analysis Hammermeister et al. (2008) found there to be three main dimensions of servant-leadership. These were labeled as

trust/inclusion, humility, and service. As an offshoot of the SLP and the RSLP, Hammermeister et al. (2008) developed the Revised Servant Leadership Profile for Sport (RSLP-S). The RSLP-S measures these three aforementioned servant leader constructs in a 22-item questionnaire. Internal consistency for the RSLP-S has been good to strong for both Hammermeister et al. (2008) and Rieke et al. (2008), with Cronbach's alpha coefficients of 0.85 to 0.94 and 0.79 to 0.92 respectively.

In addition to the abovementioned prominent servant leadership instruments, numerous other less-known instruments have been developed as well, some with strong psychometric properties. Reinke (2003, 2004) developed and utilized a seven-item questionnaire to assess servant leadership; however, a weakness is its incapability to encompass to encompass all aspects of servant leadership.

Following an extensive review of the literature, Sendjaya, Sarros, and Santora (2008) developed the Servant Leadership Behavior Scale (SLBS). Including a spiritual component, that most other instruments are without, the SLBS measured six dimensions of servant leadership. The SLBS demonstrated sufficient internal consistency, with Cronbach's alpha coefficients ranging from 0.72 to 0.93. However, as acknowledged by the authors, future research involving the SLBS is necessary to further validate the instrument.

Developed to test the seven-dimensions of servant leadership as identified by Patterson (2003), Dennis and Bocarnea (2005) created an instrument that was found to measure all but two of the dimensions (altruism and serving). Again, the authors recommend the need for future research to establish construct validity.

Barbuto and Wheeler (2006) developed the Servant Leadership Questionnaire (SLQ) that was designed to measure the ten characteristics of servant leadership as identified by Spears (1998) and one additional characteristic they identified as “calling.” Similar to the instrument created by Dennis and Bocarnea (2005), factor analysis found that the SLQ measured only five dimensions of servant leadership, six less than the eleven dimensions the instrument was intended to assess. Furthermore, when applied to a South African sample, Dannhauser and Boshoff (2007) found that the SLQ was only one-dimensional. However, Barbuto, Story, and Gifford (2008) were concerned about the Dannhauser and Boshoff (2007) results due to the possible effect of the translation of the SLQ.

Van Dierendonck and Nuijten (2011) developed the Servant Leadership Survey (SLS) that was found to represent eight dimensions of servant leadership, which was confirmed via factor analysis. With seemingly strong psychometric properties, the SLS may be an appropriate option for future servant leadership research.

**Criticisms of servant leadership.** As with most theories, servant leadership is not without its critics. Russell and Stone (2002) observed that the majority of knowledge surrounding servant leadership is not based off of empirical evidence, but is philosophical in nature as well as mostly anecdotal and somewhat ambiguous. Along these lines, the literature on servant leadership is predominantly idealistic; that is, authors describe how servant leaders should be rather than how they actually are (van Dierendonck, 2011). To remedy this situation, van Dierendonck (2011) asserts the need for an increased focus on validated empirical research. Servant leadership has also been criticized for being unrealistic, encouraging passivity, not working in every context, and for allowing the

leader to be taken advantage of or manipulated (Whetstone, 2002). Smith et al. (2004) also criticizes servant leadership for failing to recognize the role that contextual factors plays on leadership. Furthermore, Argyris (1998) claims that empowerment, a central theme of servant leadership, remains mostly an illusion amongst executives despite efforts and programs to enact change in organizations. As Eicher-Catt (2005) describes, leaders higher up in an organization may take on the "leadership" roles while encouraging lower management to enact the "servant" roles. Additionally, the lack of consensus on an explicit definition and conceptual construct of servant leadership allows individuals to interpret servant leadership in varying and inconsistent ways so much that leaders may advance their own agendas by hiding behind the innocence and ambiguity of servant leadership (Eicher-Catt, 2005).

Furthermore, while servant leadership is assumed to be a genderless approach to leadership, Eicher-Catt (2005) accused the model of being sexist. Specifically, even though the pairing of the words "servant" and "leadership" may appear to de-gender or even "de-masculinize" mainstream leadership beliefs, servant leadership "insidiously perpetuates a long-standing masculine-feminine, master-slave political economy that, in the end, negates its so-called revolutionary potential to advance genderless leadership" (p. 17). However, Spears (1998) believes it will take time for some people to accept the positive usage of the word servant, and "those who are willing to dig a little deeper [will] come to understand the inherent spiritual nature of what is intended by the pairing of *servant* and *leader*" (Spears, 1998, p. 10).

**Areas for improvement in servant leadership literature and research.** At the current phase of development in the field of servant leadership, there exists limited



empirical evidence in support of the varying servant leadership models (Russell & Stone, 2002). This deficit of empirical evidence that supports the efficacy of servant leadership is unexpected, “considering how widely the servant-leader concept has been accepted in applied business and educational leadership circles” (Hammermeister et al., 2008, p. 187). The result of the lack of supporting data is that theoretical models of servant leadership are prone to criticism (Russell & Stone, 2002). For this reason and to be able to more accurately theoretically connect positive psychological attributes to servant leadership, there exists a need for more empirical research (Carthen, 2011). Another aspect of the servant leadership research that is lacking is knowledge of the motivational facet of servant leadership (van Dierendonck, 2011).

Specifically to sport, Hammermeister et al. (2008) stressed the necessity for future research to more comprehensively investigate the role that servant leadership plays in athletic development. Similarly, Hammermeister et al. (2008) suggest that future research address the theory that servant leader led athletes perform at higher levels than non-servant leader led athletes. Along these lines, research should address athletes’ preference for servant leaders versus non-servant leaders (Hammermeister et al., 2008).

**Servant leadership conclusion.** While there are multiple existing models of leadership, the concept of servant leadership appears to be one that has far-reaching positive consequences both within and out of the sport context. Whereas traditional coaching styles are predominantly authoritative in nature, the servant leader model and its emphasis on relationships, trust, and inclusion is quite the opposite. However, despite these contradictions and the beliefs that “hard-nosed, no-nonsense” coaching develops tougher and better performing athletes, recent research would suggest otherwise

(Hammermeister et al., 2008; Rieke et al., 2008). These findings have important implications for coaches and other sport practitioners. Specifically, to garner the best results from your athletes as well as to enhance their experiences, recent evidence implies that coaches ought to develop interpersonal relationships with their athletes that are built on trust and values. The servant leadership approach is one such style of leadership that encompasses these concepts.

### **Chapter III**

#### **Methods**

The primary purpose of this study was twofold: (1) to discover if mental toughness is related to collegiate distance running performance; and (2) to determine whether coaches who adhere to a "servant leader" style of coaching produce athletes that are more mentally tough than athletes coached by non-servant leaders. Furthermore, the present study was interested in two exploratory questions: (1) does run time, mental toughness and perceived servant leader behaviors among coaches vary across NCAA Division? And (2) does run time, mental toughness and perceived servant leader behaviors among coaches vary by gender?

In order to accomplish these purposes, the study utilized a quantitative research design, which employed analysis of variance (ANOVA), analysis of covariance (ANCOVA), and Pearson r correlation techniques.

This chapter provides a description of the adhered to methodology that was employed to test the hypotheses. Specifically, sections in this chapter provide a background of the participants, information on the instrumentation used to test the hypotheses, a brief synopsis of the procedural process, and a description of the statistical analysis performed.

#### **Participants**

The participants were 334 collegiate track athletes on the roster of one of the 64 American colleges/universities represented in the study. The collegiate institutions varied geographically, with the participating athletes competing for colleges/universities spanning all three time zones of the continental United States. The sample consisted of

198 men and 136 women. Of the 334 athletes, 154 competed for National Collegiate Athletic Association (NCAA) Division I teams, 102 competed for NCAA Division II teams, and 78 competed for NCAA Division III teams.

### **Instrumentation**

To conduct this study, it was necessary to collect three different facets of data for each participant: achievement, mental toughness, and perception of coach leadership.

**Achievement.** In order to quantify achievement, participating athletes self-reported their personal best times in both the three- and five-kilometer track distances. Additionally, results (finishing time converted to seconds) from participants that competed in the five-kilometer race at either the Big Meet (hosted by Grand Valley State University in Allendale, Michigan), the Husky Classic (hosted by the University of Washington in Seattle, Washington), the Iowa State Classic (hosted by Iowa State University in Ames, Iowa), or the Valentine Invitational (hosted by Boston University in Boston, Massachusetts) were obtained. These four track competitions were selected because they all took place on the same weekend (February 10<sup>th</sup> to the 11<sup>th</sup>, 2012) and they are all renowned for being competitive events taking place on fast tracks.

**Mental Toughness.** To quantify mental toughness, ~~we used~~ the Mental Toughness Questionnaire 48 (MTQ48; Clough et al., 2002) was utilized. The MTQ48 has been used to measure mental toughness in multiple studies (e.g. Clough et al., 2002; Crust, 2009; Crust & Azadi, 2009; Crust & Azadi, 2010; Crust & Clough, 2005; Crust & Keegan, 2010; Crust & Swann, 2011; Horsburgh et al., 2009; Nicholls et al., 2008; Nicholls et al., 2009). The MTQ48 provides scores for four mental toughness constructs, labeled (1) control, (2) challenge, (3) commitment, and (4) confidence, as well as a measurement of

'total' mental toughness. Clough et al. (2002) found the MTQ48 to be highly reliable (reliability coefficient of 0.9) and to take on average less than 15 minutes to complete. Other investigations have also found support for the validity and reliability (Crust, 2008), internal consistency (Kaisler et al., 2009), and factor structure of the MTQ48 (Horsburgh et al., 2009). The test consists of 48 items measured on a five-point Likert scale ranging from *strongly disagree* to *strongly agree*.

**Servant Leadership.** To assess servant leadership, the Revised Servant Leadership Profile for Sport (RSLP-S; Hammermeister et al., 2008) was utilized. The RSLP-S is a sport-specific measurement instrument adapted from Wong (2004) and measures an athlete's perception of his/her coach's behaviors as well as his/her preference for their coach's behavior on three constructs of servant leadership: (1) trust/inclusion, (2) humility, and (3) service. The RSLP-S was previously found to possess acceptable reliability with Cronbach's (1951) alpha coefficients varying from 0.79 to 0.92 (Rieke et al., 2008). The test consists of 44 total items (22 for perceived coaching profile and 22 for preferred coaching profile) that are measured on a seven-point Likert scale ranging from *strongly agree* to *strongly disagree*. For the purpose of this study, the RSLP-S was delimited to only the 22 items that measure perceived coaching behavior.

### **Procedure**

Ethical clearance for the study was granted by the Institutional Review Board (IRB) of Eastern Washington University before participants were recruited (see Appendix A). Following IRB approval, collegiate coaches were contacted via a scripted email (see Appendix B) in order to obtain permission to recruit their respective athletes for the

study. Upon obtaining permission, a scripted email including a cover letter (See Appendix C) and the link to the website containing the questionnaires was emailed to the potential participating athletes. Utilizing the website surveymonkey.com, the MTQ48 and RSLP-S were uploaded onto the web where participants completed and submitted the questionnaires confidentially and electronically at their convenience.

Participants that competed in the five-kilometer race at one of the four track events had their finishing time (in seconds) recorded and paired with their demographic information (reported three- and five-kilometer personal records, gender, college/university) as well as their scores in mental toughness and coaching style as measured by the MTQ48 and the RSLP-S. Similarly, all participants that reported either a personal best time in the three- or five-kilometer races had their reported time converted to seconds and paired with their demographic information and survey responses. Data was stored in an Excel file before identifiers (participants' names) were deleted and data was imported into IBM's Statistical Package for the Social Sciences (SPSS).

### **Analysis**

Statistical analysis was performed using SPSS version 20. Data was visually screened for outliers as well as checked for normality. Internal consistency of the MTQ48 and RSLP-S was calculated utilizing Cronbach's alpha (Cronbach, 1951)-. Descriptive data for both males and females on their responses to the MTQ48 and RSLP-S were obtained, and an ANOVA was performed to identify differences between genders. In order to identify cases of multicollinearity amongst the subscales of the MTQ48 and RSLP-S, Pearson correlations were also calculated. Bivariate correlations were also run

between reported three- and five-kilometer personal records and the MTQ48 and RSLP-S along with their subscales for both males and females.

To measure how varying levels of mentally tough athletes differed on running performance, the ANCOVA procedure was employed. To calculate mental toughness groups, the mean overall mental toughness score for all 334 participants was obtained. Participants with mental toughness scores above the mean were labeled as mentally tough while participants scoring below the mean were labeled as non-mentally tough. Due to there being significant gender differences in running performance and mental toughness (see Table 1), ANCOVA's on reported three- and five-kilometer personal best times, and on the five-kilometer race, utilizing gender as the covariate, were performed to determine if performance differences existed across the mental toughness groups.

To determine how varying levels of perceptions of coach servant leader behaviors varied across the mental toughness variables of interest, the mean overall coaches' servant leader score for all 334 participants was obtained. Similar to the development of the mental toughness groups, participants with servant leadership scores above the mean were labeled as having servant leader coaches while participants scoring below the mean were labeled as having non-servant leader coaches. An ANOVA was then performed utilizing the entire sample population to determine if there exists a difference in total mental toughness as well as differences in the subscales of control, commitment, challenge, and confidence in the servant leader group versus the non-servant leader group.

Lastly, an ANOVA was performed for both males and females in order to determine whether differences exist amongst athletes from the three NCAA divisions on

their reported three- and five- kilometer personal best performances as well as their responses to the MTQ48, RSLP-S, and their subscales.

### **Summary**

With the principal purposes of this study being to: 1) determine whether servant leader coaches produce more mentally tough athletes than non-servant leader coaches, and 2) to discover if mental toughness is related to collegiate distance running performance, the aforementioned methodology allowed the researchers to achieve these ends. Using collegiate participants from a variety of backgrounds with a variety of skill-sets, conclusions drawn from the statistical analysis will advance the understanding of how achievement and the constructs of mental toughness and servant leadership are related.



## **Chapter IV**

### **Results**

This chapter will provide a summary of the results of the statistical analysis described in the previous chapter. The seven sections of this chapter are: (1) Cronbach's alpha reliability coefficients; (2) bivariate correlations between subscales of the MTQ48 and RSLP-S; (3) bivariate correlations between running performance and the MTW48/RSLP-S; (4) mental toughness, servant leadership, and gender; (5) mental toughness and running performance; (6) mental toughness and servant leadership; and (7) differences in mental toughness and servant leadership across NCAA divisions.

#### **Cronbach's Alpha Reliability Coefficients**

Cronbach's alpha (Cronbach, 1951), which quantifies the degree of internal consistency (reliability) of a set of items, was calculated for each subscale, as well as the overall scale. The RSLP-S was found to have good internal consistency on its total scale as well as all of its subscales (RSLP-S = .953, trust/inclusion = .934, humility = .879, service = .885). However, the MTQ48's subscales were found to have only questionable to acceptable internal consistency (control = .629, commitment = .740, challenge = .660, confidence = .783) while its overall scale had good internal consistency (MTQ48 = .881). In general, a Cronbach's alpha of at least .7 is viewed as the minimum acceptable level of reliability (Nunnally, -1978); however, a prior recommendation that "in the early stages of research ... reliabilities of .60 or .50 will suffice" was also considered (Nunnally, 1967, p. 226), as this is an initial exploratory study. Furthermore, based on its mathematical underpinning, Cronbach's alpha varies directly with the number of items and the mean inter-item correlation (Streiner & -and-Norman, 1989), so any interpretation of alpha

must take into account these two parameters. Loewenthal (1996) suggests that a reliability level of .6 may be considered acceptable for scales with less than ten items. Also, dimensionality must be given key consideration as Cronbach's alpha is an underestimate of reliability if the scale is not unidimensional (Cronbach, 1947, 1951; Schmitt, -1996). Thus, all of the MTQ48 subscales were retained.

#### **Bivariate Correlations Between Subscales of the MTQ48 and RSLP-S**

Each of the mental toughness subscales possessed significant low to moderate correlations with the other mental toughness subscales (see Table 2). The servant leadership subscales correlated somewhat higher with one another correlating significantly at a moderate to high level. As far as correlations between the MTQ48 and RSLP-S are concerned, all correlations were positive, however slight (i.e., the highest correlation being .17 between the mental toughness subscale of commitment and the servant leader subscale of service). Significant correlations were found between the mental toughness subscale of control and each of the servant leadership subscales while the mental toughness subscale of commitment was significantly correlated with the servant leadership subscales of trust/inclusion and service. The mental toughness subscales of confidence and challenge were not significantly correlated with any of the servant leader subscales suggesting multicollinearity was not an issue.

#### **Bivariate Correlations Between Running Performance and the MTW48/RSLP-S**

Bivariate correlations between reported three- and five-kilometer personal records and the MTQ48 and RSLP-S along with their subscales for both males and females also revealed a significant negative relationship between overall mental toughness and three- and five-kilometer performance for all but male three-kilometer performance (see Tables

3 and 4). Additionally, the subscales of commitment, control, and confidence significantly correlated with either three- or five-kilometer performance for females while only confidence significantly correlated with five-kilometer performance for males. Neither overall servant leadership nor any of its subscales significantly correlated with three- or five-kilometer performance for males or females.

### **Mental Toughness, Servant Leadership, and Gender**

Analysis of variance (ANOVA) revealed that males scored significantly higher on MTQ48 total than females ( $F(1,332) = 6.68; p = .010$ ). Males also scored higher than females on the MTQ48 subscales of control ( $F(1,332) = 9.77; p = .002$ ), challenge ( $F(1,332) = 4.13; p = .043$ ), and confidence ( $F(1,332) = 6.71; p = .010$ ), but not on the subscale of commitment ( $F(1,332) = .05; p = .831$ ). However, males and females scored their coaches equally on the servant leader scale ( $F(1,332) = .01; p = .924$ ), as well as on all three of the servant leader subscales (see Table 1).

As far as running performance is concerned, the ANOVA revealed a significant effect for gender on three- and five-kilometer reported personal best times (3k:  $F(1,266) = 777.25; p = <.001$ ; 5k:  $F(1,286) = 799.84; p = <.001$ ) as well on the five-kilometer race times ( $F(1,111) = 488.13; p = <.001$ ), with males running the faster times.

### **Mental Toughness and Running Performance**

In the present study, running performance data was collected for three- and five-kilometer reported personal best times and well as on a five-kilometer race hosted on the same day at four different universities across the United States. ANCOVA's were run separately for all three facets of running performance data.

**Mental toughness and reported three-kilometer personal best time.** The ANCOVA for three-kilometer reported personal best performance utilizing gender as a covariate was significant ( $F(1,265) = 4.33; p = .038$ ) with the mentally tough group reporting faster personal best times than the non-mentally tough group (see Table 5).

**Mental toughness and reported five-kilometer personal best time.** The ANCOVA for five-kilometer reported personal best performance utilizing gender as a covariate was also significant ( $F(1,285) = 6.81; p = .010$ ) with the mentally tough group reporting faster personal best times than the non-mentally tough group (see Table 6).

**Mental toughness and five-kilometer race performance.** The ANCOVA for five-kilometer race performance utilizing gender as a covariate did not show a significant effect for mental toughness ( $F(1,110) = .62; p = .433$ ) despite the mentally tough group ( $M = 931.68$  seconds;  $SD = 74.73$  seconds) running faster than the non-mentally tough group ( $M = 980.35$  seconds;  $SD = 105.22$ ) (see Table 7).

#### **Mental Toughness and Servant Leadership**

The ANOVA for the MTQ48 and its subscales was significant for the servant leader groups with the servant leader group (athletes that perceived their coaches to be servant leaders) being more mentally tough than the non-servant leader group ( $F(1,332) = 8.09; p = .005$ ) (see Table 8). Significant effects were also found for the control ( $F(1,332) = 10.04; p = .002$ ), commitment ( $F(1,332) = 8.07; p = .005$ ), and confidence ( $F(1,332) = 3.76; p = .053$ ) subscales of the MTQ48 with the servant leader group scoring higher. There was no significant effect for the challenge subscale ( $F(1,332) = .78; p = .377$ ).

## Differences in Mental Toughness, Servant Leadership, and Run Performance

### Across NCAA Divisions

When comparing female athletes of different NCAA divisions on the mental toughness, servant leader, and distance running variables of interest in this study, the ANOVA was significant for MTQ48 total ( $F(2,133) = 3.04$ ;  $p = .051$ ), the MTQ48 challenge subscale ( $F(2,133) = 3.94$ ;  $p = .022$ ), and reported three- and five-kilometer personal best times (3k:  $F(2,98) = 16.28$ ;  $p < .001$ ; 5k:  $F(2,118) = 16.37$ ;  $p < .001$ ). Post-hoc Tukey's analysis revealed the NCAA DI female athletes scored significantly higher on the MTQ48 total than the DIII athletes as well as on the MTQ48 challenge subscale. Post-hoc Tukey's analysis also revealed a significant difference amongst all the NCAA divisions for reported three- and five-kilometer personal best times. There were no significant differences for the MTQ48 subscales of control, commitment or confidence as well as the RSLP-S and its subscales -(see Table 9).

When comparing male athletes of different NCAA divisions on the variables of interest in this study, the ANOVA was only significant for reported three-kilometer personal best times ( $F(2,164) = 9.16$ ;  $p < .001$ ). Post-hoc Tukey's analysis revealed that the NCAA DI male athletes had significantly faster reported three-kilometer personal best times than the DII and DIII male athletes. There were no significant differences for reported five-kilometer personal best time as well as for the MTQ48 and RSLP-S and their subscales- (see Table 10).

## Chapter V

### Discussion

The present study examined the relationship between collegiate distance running performance, mental toughness, and servant leadership. Specifically, the primary purpose of the study was (1) to discover if mental toughness is related to collegiate distance running performance; and (2) to determine whether coaches that adhere to a "servant leader" style of coaching produce athletes that are more mentally tough than athletes coached by non-servant leaders. Additionally, the present study aimed to understand the effect of gender and NCAA division on both mental toughness and servant leadership.

Based on previous mental toughness studies (Crust & Azadi, 2010; Golby & Sheard, 2004; Nicholls et al., 2009; Sheard et al., 2009), it was hypothesized that mentally tough athletes would have faster running personal records than the non-mentally tough athletes. Furthermore, based on studies that found servant leader coaches to be associated with athletes possessing superior psychological variables such as self-confidence, motivation, and coping (Hammermeister et al., 2008; Rieke et al., 2008), it was hypothesized that athletes with servant leader coaches would be more mentally tough than athletes with non-servant leader coaches. The present investigation is the first to examine these relationships using exclusively collegiate distance runners. Furthermore, this is the first known study to investigate the relationship between servant leadership and mental toughness using a quantitative design.

The sections of this chapter are: (1) mental toughness **and** gender; (2) mental toughness and collegiate distance running performance; (3) servant leadership and mental

toughness; (4) a discussion on coaching mental toughness; (5) limitations; (6) future research directions; and (7) conclusion.

### **Mental Toughness Across Gender**

In the present study, males scored themselves significantly higher than females on the total mental toughness scale as well as on three of the four subscales (control, challenge, and confidence). Previous findings contradict one another in this area, with multiple studies finding no significant differences in mental toughness scores across gender (Crust, 2009; Crust & Azadi, 2010) and others finding males to be significantly more mentally tough than females (Crust & Keegan, 2010; Nicholls et al., 2009; Sheard et al., 2009). The MTQ48 was not designed to discriminate between gender (Clough et al., 2002), thus, any discrepancies may be the product of variations in how the attributes of mental toughness are expressed in females (Nicholls et al., 2009), making the conclusion that males are more mentally tough than females possibly inappropriate.

However, previous investigations have found males to report higher self-esteem (Gentile et al., 2009) and sport confidence (Vealey, 1988) than females. With self-esteem and confidence playing a prominent role in the theory behind the development of the MTQ48, it is feasible that gender differences manifested themselves in this fashion, providing a potential explanatory mechanism for why males scored significantly higher on the MTQ48 total as well as the subscales of control, challenge, and confidence.

### **Mental Toughness and Collegiate Distance Running Performance**

Although two previous studies have found the relationship between achievement level and mental toughness to be subtle (Golby & Sheard, 2004; Nicholls et al., 2009), these studies defined achievement as the level of competition the athletes participated in,

(e.g., international caliber versus national level versus collegiate versus beginner, etc.). While every sport has its unique demands and measurement difficulties, the sport of distance running is unique in that achievement is relatively easy to quantify by utilizing personal best times. This was precisely ~~our~~ the approach in this study as achievement was ~~we~~ operationalized achievement as personal best run PR time in the three- and five-kilometer track events, thus making for a more clear-cut definition of achievement than did previous investigations (e.g., Golby & Sheard, 2004; Nicholls et al., 2009).

For the collegiate distance runners sampled in this study, it would appear that mentally tough athletes outperformed non-mentally tough athletes on three- and five-kilometer reported personal best times. Specifically, the mentally tough group, comprised of the top 50% of the sample on overall mental toughness, had significantly faster reported personal best times in both the three- and five-kilometer distances compared to the athletes comprising the bottom half of the overall mental toughness scale. Additionally, bivariate correlations between MTO48 total scores with reported three- and five-kilometer personal best times for females and reported five-kilometer best times for males were negatively and significantly correlated. These findings at least partially support the hypothesis that mentally tough runners will have faster personal records than non-mentally tough runners. While Nicholls et al. (2009) suggested that differences in athletic achievement might be more accurately predicted by factors such as physical attributes or technical skill, the present study suggests that mental toughness may play a prominent role as well in predicting performance success in collegiate distance running.



The results of this investigation are also similar to the findings of Crust and Clough (2005) who investigated the relationship between endurance performance and mental toughness. Utilizing a sample of undergraduate students, Crust and Clough investigated how long the students could suspend a dumbbell weighing 1.5% of their bodyweight directly in front of them with their dominant arm. Their results revealed a significant, positive correlation between scores for overall mental toughness and the time the dumbbell was suspended. While physiological characteristics could potentially account for the findings of both our study and the Crust and Clough investigation, neither was able to utilize physiological covariates which may have allowed for a more complete examination of how cognitive factors interact with physiological characteristics of endurance performers.

#### **Servant Leadership and Mental Toughness**

Of the two known quantitative servant leadership studies that have been conducted involving sport (Hammermeister et al, 2008; Rieke et al., 2008), neither has formally investigated the relationship of servant leadership with mental toughness. However, both Hammermeister of these servant leadership studies have investigated the relationship of servant leadership with various psychological attributes reminiscent of mental toughness, such as coping, confidence, task orientation, and intrinsic motivation. Of these psychological characteristics, all were significantly associated with servant leadership, which supported our working hypothesis that athletes with servant leader coaches would be more mentally tough than athletes with non-servant leader coaches.

The present study, being the third known quantitative study of servant leadership in sport, supported the findings of the previous two studies by showing servant leadership

is associated with the desirable psychological attributes that form mental toughness. Specifically, the present study's results revealed that athletes who were coached by servant leaders had significantly higher scores on MTQ48 total (overall mental toughness) as well as scores on the MTQ48 subscales of control, commitment, and confidence compared to the athletes comprising the bottom half of the overall servant leadership scale.

These findings suggest that a servant leader coach may not enhance an athlete's willingness to approach challenges as opportunities as much as they enhance an athlete's confidence, their commitment, and the degree to which the athlete believes they are in control of the outcomes of their life. A plausible explanation for the lack of effect of servant leadership on the challenge subscale of mental toughness is that to make it to the collegiate level of competition, all athletes must have already been able and willing to accept challenges throughout their high school career.

### **Coaching Mental Toughness**

The development and maintenance of mental toughness is greatly influenced by the athlete's relationship with significant others, particularly the coach (Gucciardi et al., 2009). Gucciardi et al. (2009) emphasized that the coach-athlete relationship must be built on trust and respect. Of the existing leadership models in the world, none address the importance of trust and respect to the extent that the philosophy of servant leadership does. Moreover, Hammermeister et al. (2008) found athletes coached by servant leaders scored higher on respect than any other coaching philosophy. Essentially, where traditional models of leadership are focused on the leader influencing the subordinate to achieve a goal, servant leadership focuses on developing the relationship between the

leader and follower (van Dierendonck, 2011), which in turn develops a mutual trust and respect. From this perspective, it is logical that that the servant leadership philosophy is likely to produce mentally tough athletes. This viewpoint is supported by Rieke et al. (2008), who concluded that not only do athletes of servant leader coaches perform better and are mentally tougher, they also prefer coaches who display servant leadership characteristics. While the present study did not explore athlete leadership preferences, it too supports the contention that servant leadership led athletes are more mentally tough than athletes coached by non-servant leaders.

However, in contrast to the findings of Rieke et al. (2008) that athletes prefer servant leader style coaches, Crust and Azadi (2009) found that mental toughness was not significantly related to a preference for social support, democratic behaviors, and positive feedback, all of which are characteristics of a servant leader. Conversely, social support has been cited as important to the development of mental toughness (Connaughton et al., 2008; Gucciardi et al., 2009; Wolfenden & Holt, 2005). Furthermore, having unambiguous expectations (Gucciardi et al., 2009; Martindale, Collins, & Daubney, 2005; Gould et al., 2002; Gould et al., 2007), emphasizing instruction as well as a philosophy of winning (Crust & Azadi, 2009; Gucciardi et al., 2009, Martindale et al., 2005), providing encouragement (Gould et al., 2002; Gucciardi et al., 2009), and modeling constructive, positive behaviors (Gould et al., 2007; Gucciardi et al., 2009) have all been cited as coach strategies for promoting mental toughness, most of which correspond to varying interpretations of the philosophy of servant leadership. However, while a large portion of research seems to support the importance of characteristics suggestive of servant leadership for developing mental toughness, conceptual

inconsistencies make it difficult to conclude whether servant leadership is or is not the preferred coaching philosophy of mentally tough athletes. Future research should aim to identify if mentally tough athletes prefer servant leader styles of coaching to the more traditional leadership models. Nevertheless, regardless of leadership preferences, the present study's findings support the hypothesis that athletes that perceive their coaches to be servant leaders are more mentally tough than athletes that do not perceive their coaches to be servant leaders. While servant leadership has been advocated for and adopted in business, education, churches, and other organizational settings, results of the present study suggest that servant leadership may be a very beneficial leadership philosophy to be considered in the athletic setting, especially if there is a desire to facilitate mental toughness within the athletes.

### **Limitations**

While successful in investigating the intricate relationship between performance, mental toughness, and servant leadership, the present study is not without its limitations. As with all research involving self-report questionnaires, there is a potential for bias in responses due to the participant seeking to give socially desirable answers, in this case responding with the "mentally tough" answers.

Generalizability of the present study's results to other sports is another limitation of the study. Due to the sample population being limited to collegiate track distance athletes, it cannot be concluded that the results are representative of athletes in other sports or even representative of non-distance running track athletes.

Another limitation of the study was that age or year of collegiate competition was not taken into account in as far as achievement was concerned. Specifically, collegiate

distance runners tend to get faster with experience and as their bodies mature towards their mid- to upper-twenties. Therefore, it is likely that an athlete is faster as a fourth or fifth year college student than they were as a first or second year college student, regardless of their mental toughness or coach's leadership style. Failing to control for this phenomenon potentially could have distorted the data, potentially in the direction that older, non-mentally tough athletes were at times faster than younger, non-mentally tough athletes. Controlling for this trend could possibly have revealed even stronger relationships between mental toughness and running performance.

Another element of concern in the study was the weak internal consistency of the MTQ48 for the population of collegiate distance runners. Specifically, the Cronbach's alpha reliability coefficients of .63 for the mental toughness subscale of control and .66 for the mental toughness subscale of challenge both are classified as questionable and fall short of Nunnally's (1978) recommendation that reliabilities of instruments used in basic research meet or exceed .70. Considering the low reliability coefficients of the MTQ48 found in this study, there might be a need for a mental toughness instrument better calibrated for use by athletes.

A final limitation of the present study was the lack of physiological data collected on participating athletes. Without this data, it is possible that physiological covariates such as VO2 max accounted for the significant findings of the study, but were instead credited to mental toughness because the majority of high VO2 max athletes happened to score highly on the MTQ48.

### **Future Research Directions**

Future research should investigate the relationship between mental toughness and athletic performance in sports other than collegiate distance running. Similarly, future research should aim to understand the role that servant leadership plays in developing mental toughness in all sports. While there is a need for more quantitative studies of servant leadership in sport, a qualitative investigation of an athlete's perception of their servant leader coach would be valuable in the understanding of what aspects of servant leadership most greatly influence the athlete. Additionally, as previously touched upon, future research should look to improve the psychometric properties of the MTQ48 for athletic populations. Finally, a research design that incorporates physiological covariates such as VO2 max or body composition would further allow researchers to understand how cognitive factors interact with the physiological characteristics of an athlete to influence performance.

### **Conclusion**

The primary purpose of the present study was to (1) to discover if mental toughness is related to collegiate distance running performance; and (2) to determine whether coaches that adhere to a "servant leader" style of coaching produce athletes that are more mentally tough than athletes coached by non-servant leaders. Few studies have explored the relationship between mental toughness and performance while fewer have examined the effects of servant leadership in sport. The present study is the first known study to combine the two concepts by investigating the relationship between mental toughness and servant leadership.

An extensive review of both the mental toughness and servant leadership literature was performed in order to provide a basis and rationale for the present study. While both concepts lack conceptual clarity, there is consensus in many of the core tenants of both mental toughness and servant leadership. Above all, mental toughness is universally understood to be a positive and desirable construct for individuals to possess that implies a psychological advantage over non-mentally tough individuals (Clough et al., 2002; Jones et al., 2002; Loehr, 1986) while servant leadership is acknowledged to be a moral form of leadership that serves the needs of the followers. However, the literature review identified a need for a more comprehensive understanding of the role of both mental toughness and servant leadership in sport.

In order to explore the relationship between and the intricacies of mental toughness and servant leadership, the present study adhered to a survey-driven, quantitative research design on a collegiate distance running population. Participants were identified as being mentally tough or non-mentally tough based on whether or not their total mental toughness score was in the top or bottom 50% of the distribution. Similarly, participants were identified as having either servant leader coaches or non-servant leader coaches based on whether or not they scored in the top or bottom 50% of the total servant leadership distribution. Statistical analysis of the data employed ANOVA, ANCOVA, and Pearson r correlations.

The results of the present study support the belief that higher performance is associated with mental toughness. The mentally tough group reported significantly faster three- and five-kilometer personal records than the non-mentally tough group. Furthermore, the servant leader coached athletes were significantly more mentally tough

than the non-servant leader coached athletes, supporting the contention that servant leader coaches produce more mentally tough athletes. Without implying causation, the present study's findings offer preliminary support for the implications of coaches utilizing a servant leader style of coaching to facilitate mental toughness, and potentially enhance athlete performance.



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*Table 1. Descriptive Statistics of the MTQ48 and RSLP-S and ANOVA comparing Gender*

Variables	Female (n = 136)		Male (n = 198)		Combined (n = 334)		F	p
	M	SD	M	SD	M	SD		
NCAA division	1.95	.83	1.65	.76	1.77	.80	11.38	.001
MTQ48 Total	3.58	.39	3.68	.32	3.64	.35	6.68	.010
Control	3.40	.42	3.53	.35	3.47	.38	9.77	.002
Commitment	3.90	.44	3.91	.44	3.91	.44	.05	.831
Challenge	3.67	.52	3.77	.40	3.73	.46	4.13	.043
Confidence	3.47	.51	3.61	.43	3.55	.47	6.71	.010
RSLP-S Total	5.28	1.08	5.27	1.05	5.27	1.06	.01	.924
Trust/Inclusion	5.29	1.19	5.25	1.19	5.27	1.19	.08	.773
Humility	4.99	1.24	5.06	1.17	5.03	1.20	.26	.612
Service	5.59	1.17	5.55	1.14	5.57	1.15	.13	.715
Three-Kilometer PR	635.40 (n=101)	44.05	523.58 (n=167)	21.30	565.72 (n=268)	62.89	777.25	<.001
Five-Kilometer PR	1109.13 (n=121)	79.81	907.30 (n=167)	39.40	992.10 (n=288)	116.28	799.84	<.001
Five-Kilometer Race	1068.35 (n=40)	51.68	892.79 (n=73)	32.69	954.94 (n=113)	93.42	488.13	<.001

Note. MTQ48 = Mental Toughness Questionnaire 48, RSLP-S = Revised Servant Leadership Profile for Sport, M = mean, SD = standard deviation. The MTQ48 is rated on a 5-point Likert scale anchored at 1 (strongly disagree) to 5 (strongly agree). The RSLP-S is rated on a 7-point Likert ranging from 1 (strongly disagree) to 7 (strongly agree). Three-Kilometer PR, Five-Kilometer PR, and Five-Kilometer Race are reported in seconds.

*Table 2. Bivariate Correlations Between Subscales of the MTQ48 and RSLP-S*

	MTQ48 Total	Challenge	Commitment	Control	Confidence	RSLP-S Total	Trust/Inclusion	Humility	Service
MTQ48 Total	=								
Challenge	.70**	=							
Commitment	.74**	.38**	=						
Control	.85**	.55**	.51**	=					
Confidence	.87**	.48**	.48**	.64**	=				
RSLP-S Total	.16**	.10	.13*	.16**	.11*	=			
Trust/Inclusion	.15**	.10	.12*	.15**	.10	.95**	=		
Humility	.12*	.09	.05	.13*	.10	.81**	.62**	=	
Service	.16**	.09	.17**	.16**	.10	.88**	.79**	.62**	=

Note. MTQ48 = Mental Toughness Questionnaire 48, RSLP-S = Revised Servant Leadership Profile for Sport. The MTQ48 is rated on a 5-point Likert scale anchored at 1 (strongly disagree) to 5 (strongly agree). The RSLP-S is rated on a 7-point Likert ranging from 1 (strongly disagree) to 7 (strongly agree). \*p < .05 level. \*\*p < .01.



*Table 3. Bivariate Correlations Between Reported 5k/3k PR's with the MTQ48, RSLP-S, and their subscales for Females*

	<u>5k PR</u>	<u>3k PR</u>
<u>MTQ48 Total</u>	<u>-.229*</u>	<u>-.250*</u>
<u>Control</u>	<u>-.234**</u>	<u>-.239*</u>
<u>Commitment</u>	<u>-.126</u>	<u>-.264**</u>
<u>Challenge</u>	<u>-.177</u>	<u>-.150</u>
<u>Confidence</u>	<u>-.199*</u>	<u>-.182</u>
<u>RSLP-S Total</u>	<u>-.141</u>	<u>-.101</u>
<u>Trust/Inclusion</u>	<u>-.150</u>	<u>-.077</u>
<u>Humility</u>	<u>-.087</u>	<u>-.111</u>
<u>Service</u>	<u>-.128</u>	<u>-.101</u>

Note. MTQ48 = Mental Toughness Questionnaire 48, RSLP-S = Revised Servant Leadership Profile for Sport. The MTQ48 is rated on a 5-point Likert scale anchored at 1 (strongly disagree) to 5 (strongly agree). The RSLP-S is rated on a 7-point Likert ranging from 1 (strongly disagree) to 7 (strongly agree). \*p < .05 level. \*\*p < .01.

*Table 4. Bivariate Correlations Between Reported 5k/3k PR's with the MTQ48, RSLP-S, and their subscales for Males*

	<u>5k PR</u>	<u>3k PR</u>
<u>MTQ48 Total</u>	<u>-.163*</u>	<u>-.095</u>
<u>Control</u>	<u>-.124</u>	<u>-.012</u>
<u>Commitment</u>	<u>-.118</u>	<u>-.030</u>
<u>Challenge</u>	<u>-.049</u>	<u>-.102</u>
<u>Confidence</u>	<u>-.169*</u>	<u>-.141</u>
<u>RSLP-S Total</u>	<u>.008</u>	<u>-.012</u>
<u>Trust/Inclusion</u>	<u>-.020</u>	<u>-.026</u>
<u>Humility</u>	<u>.091</u>	<u>.029</u>
<u>Service</u>	<u>-.028</u>	<u>-.022</u>

Note. MTQ48 = Mental Toughness Questionnaire 48, RSLP-S = Revised Servant Leadership Profile for Sport. The MTQ48 is rated on a 5-point Likert scale anchored at 1 (strongly disagree) to 5 (strongly agree). The RSLP-S is rated on a 7-point Likert ranging from 1 (strongly disagree) to 7 (strongly agree). \*p < .05 level. \*\*p < .01.

*Table 5. ANCOVA results comparing MT vs Non-MT on reported three-kilometer personal records (controlled for gender)*

Variables	MT (n = 135)		Non-MT (n = 133)		F	p
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
3k PR	<u>557.70</u>	<u>57.52</u>	<u>573.86</u>	<u>67.16</u>	<u>4.33</u>	<u>.038</u>

Note. MT = Mentally Tough Group, Non-MT = Non-Mentally Tough Group, M = mean, SD = standard deviation, 3k PR = Three-Kilometer Personal Record (reported in seconds)

*Table 6. ANCOVA results comparing MT vs Non-MT on reported five-kilometer personal records (controlled for gender)*

Variables	MT (n = 140)		Non-MT (n = 148)		F	p
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
5k PR	<u>977.25</u>	<u>108.78</u>	<u>1006.14</u>	<u>121.65</u>	<u>6.81</u>	<u>.010</u>

Note. MT = Mentally Tough Group, Non-MT = Non-Mentally Tough Group, M = mean, SD = standard deviation, 5k PR = Five-Kilometer Personal Record (reported in seconds)

*Table 7. ANCOVA results comparing MT vs Non-MT on 5k race time (controlled for gender)*

Variables	MT (n = 59)		Non-MT (n = 54)		F	p
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
5k race	<u>931.68</u>	<u>74.73</u>	<u>980.35</u>	<u>105.22</u>	<u>.62</u>	<u>.433</u>

Note. MT = Mentally Tough Group, Non-MT = Non-Mentally Tough Group, M = mean, SD = standard deviation, 5k race = Five-Kilometer Race Performance (reported in seconds)

*Table 8. ANOVA results comparing SL vs Non-SL on mental toughness*

Variables	SL (n = 167)		Non-SL (n = 167)		F	p
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>		
MTQ48 Total	<u>3.69</u>	<u>.35</u>	<u>3.59</u>	<u>.34</u>	<u>8.09</u>	<u>.005</u>
Control	<u>3.54</u>	<u>.37</u>	<u>3.41</u>	<u>.39</u>	<u>10.04</u>	<u>.002</u>
Commitment	<u>3.98</u>	<u>.46</u>	<u>3.84</u>	<u>.41</u>	<u>8.07</u>	<u>.005</u>
Challenge	<u>3.75</u>	<u>.45</u>	<u>3.71</u>	<u>.46</u>	<u>.78</u>	<u>.377</u>
Confidence	<u>3.60</u>	<u>.46</u>	<u>3.50</u>	<u>.47</u>	<u>3.76</u>	<u>.053</u>

Note. SL = Servant Leader Group, Non-SL = Non-Servant Leader Group, MTQ48 = Mental Toughness Questionnaire 48, M = mean, SD = standard deviation. The MTQ48 is rated on a 5-point Likert scale anchored at 1 (strongly disagree) to 5 (strongly agree).

*Table 9. ANOVA results comparing NCAA divisions on overall MT, overall coaches' SL, and reported three- and five-kilometer PR's for Females*

Variables	DI (n = 50)		DII (n = 43)		DIII (n = 43)		F	p
	M	SD	M	SD	M	SD		
MTQ48 Total	3.67	.40	3.59	.28	3.47	.43	3.04	.051 <sup>1</sup>
Control	3.47	.40	3.40	.37	3.30	.48	2.10	.126
Commitment	3.97	.42	3.89	.47	3.84	.44	1.11	.334
Challenge	3.78	.47	3.72	.41	3.49	.63	3.94	.022 <sup>2</sup>
Confidence	3.57	.53	3.48	.36	3.36	.60	1.88	.156
RSLP-S Total	5.27	1.13	5.44	.98	5.12	1.10	.94	.393
Trust/Inclusion	5.43	1.23	5.38	1.08	5.04	1.24	1.42	.244
Humility	4.76	1.27	5.27	1.09	4.98	1.33	1.99	.141
Service	5.53	1.22	5.78	1.06	5.48	1.21	.83	.437
5k PR	1070.11 (n=46)	70.80	1106.84 (n=38)	74.60	1160.00 (n=37)	68.09	16.37	<.001 <sup>1,2,3</sup>
3k PR	612.93 (n=44)	36.32	642.38 (n=34)	44.98	668.04 (n=23)	31.74	16.28	<.001 <sup>1,2,3</sup>

Note: MTQ48 = Mental Toughness Questionnaire 48, RSLP-S = Revised Servant Leadership Profile for Sport, DI = NCAA Division I; DII = NCAA Division II; DIII = NCAA Division III, 3k PR = Three-Kilometer Personal Record (reported in seconds), 5k PR = Five-Kilometer Personal Record (reported in seconds), M = mean, SD = standard deviation. The MTQ48 is rated on a 5-point Likert scale anchored at 1 (strongly disagree) to 5 (strongly agree). The RSLP-S is rated on a 7-point Likert ranging from 1 (strongly disagree) to 7 (strongly agree).

- 1: Univariate group differences exist between DI and DII
- 2: Univariate group differences exist between DI and DIII
- 3: Univariate group differences exist between DII and DIII

*Table 10. ANOVA results comparing NCAA divisions on overall MT, overall coaches' SL, and reported three- and five-kilometer PR's for Males*

Variables	DI (n = 104)		DII (n = 59)		DIII (n = 35)		F	p
	M	SD	M	SD	M	SD		
MTQ48 Total	3.66	.35	3.69	.28	3.72	.28	.42	.658
Control	3.53	.36	3.51	.31	3.54	.38	.09	.918
Commitment	3.88	.51	3.90	.36	4.03	.34	1.52	.221
Challenge	3.77	.40	3.78	.39	3.76	.43	.04	.960
Confidence	3.57	.45	3.66	.42	3.63	.36	.77	.466
RSLP-S Total	5.26	1.03	5.38	.87	5.10	1.35	.81	.446
Trust/Inclusion	5.26	1.17	5.38	.98	5.02	1.56	.99	.373
Humility	5.04	1.16	5.19	1.08	4.88	1.34	.81	.447
Service	5.50	1.12	5.63	1.00	5.54	1.39	.22	.802
5k PR	901.33 (n=86)	42.34	913.57 (n=54)	34.35	913.78 (n=27)	37.44	2.07	.130
3k PR	517.08 (n=86)	21.40	529.77 (n=53)	18.25	531.82 (n=28)	20.61	9.16	<.001 <sup>1,2</sup>

Note: MTQ48 = Mental Toughness Questionnaire 48, RSLP-S = Revised Servant Leadership Profile for Sport, DI = NCAA Division I; DII = NCAA Division II; DIII = NCAA Division III, 3k PR = Three-Kilometer Personal Record (reported in seconds), 5k PR = Five-Kilometer Personal Record (reported in seconds), M = mean, SD = standard deviation. The MTQ48 is rated on a 5-point Likert scale anchored at 1 (strongly disagree) to 5 (strongly agree). The RSLP-S is rated on a 7-point Likert ranging from 1 (strongly disagree) to 7 (strongly agree).

- 1: Univariate group differences exist between DI and DII
- 2: Univariate group differences exist between DI and DIII
- 3: Univariate group differences exist between DII and DIII

Appendix A: IRB Approval

To: Christopher Hammer, Department of Physical Education, Health and Recreation, 200PEB

From: Sarah Keller, Chair, Institutional Review Board for Human Subjects Research

Date: January 30, 2012

Subject: Review of HS-3882 *Mental Toughness, Servant Leadership and the Collegiate Distance Runner*

Thank you for your response to my memo of January 25. Your clarifications and revisions have addressed our concerns. Human subjects protocol HS-3882 *Mental Toughness, Servant Leadership and the Collegiate Distance Runner* has been approved as amended. The signed copy of your approved application is enclosed.

Human subjects research approval granted by the IRB is good for one year from the date of approval, to January 30, 2012. If research is to continue, with no substantial changes, beyond that date, a renewal of IRB approval must be obtained prior to continuation of the project (contact OGRD for procedure). If, subsequent to initial approval, a research protocol requires minor changes, the OGRD should be notified of those changes. Any major departures from the original proposal must be approved by the appropriate review process before the protocol may be altered. A Change of Protocol application must be submitted to the IRB for any substantial change in the protocol. The Director, Grant and Research Development, or the Chair of the IRB will determine whether or not the research must then be resubmitted for approval.

If you have additional questions please contact me at 359-7039; fax 509-359-2474; email skeller@ewu.edu. It would be helpful if you would refer to HS-3882 if there were further correspondence as we file everything under this number. Thank you.

cc: R.Galm  
J.Hammermeister  
J.Kawaguchi  
Graduate Office

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## Appendix B: Scripted Email to Coaches

Dear collegiate coach:

My name is Chris Hammer. I am a volunteer assistant cross-country and track coach at Eastern Washington University as well as a graduate student in the Physical Education: Sports Administration program. In partial fulfillment of the requirements of my Masters program, I am working with Dr. Jon Hammermeister (professor and sport psychologist for the U.S. Olympic Cross-Country Ski Team) on a thesis aimed to understand how an athlete's mental toughness characteristics and their perceived coach's behavior correlates with their athletic achievement as determined by their 3000m/5000m performance at one of the following invitationals (taking place February 10<sup>th</sup> to the 11<sup>th</sup> of 2012):

- o Husky Classic - Seattle, WA
- o Valentine Invitational - Cambridge, MA
- o Iowa State Classic - Ames, IA
- o GVSU Big Meet - Allendale, MI

In order to perform the study, I am relying on collegiate athletes to complete a short online survey (approximately 20 minutes). It is my hope that by contacting you, as their coach you would be willing to either forward the survey link to your athletes that are competing in the 3000m or 5000m or forward me their email addresses so that I may contact them myself. It is important that participants complete the questionnaire as honestly as possible. Therefore, I am seeking only those athletes who are willing to take the time to do so. While I appreciate any attempt to recruit your athletes for my study, please keep in mind that in order to maintain validity in the data, it is important that athletes do not feel pressured to participate.

Your athletes' responses to the survey items will remain completely confidential, with only the primary researcher having access to any identifiable material. All data will be stored in a password protected electronic format. Upon obtaining all the required data, identifiers will be deleted. Furthermore, results of the study will be reported anonymously where no individual's responses will be identifiable.

It is my hope that the results generated from this study will help the running community better understand the predictors of successful running performance. I truly appreciate your help. Without your and your athletes' cooperation, collecting data for my thesis would be nearly impossible.

Sincerely,

Chris Hammer  
 Eastern Washington University Graduate Student/Project Leader  
 248-515-0502  
 chammer1234@hotmail.com

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### Appendix C: Scripted Email to Athletes

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Dear collegiate athlete:

We are requesting your cooperation in completing a questionnaire to assist with a study conducted through Eastern Washington University, in partial fulfillment of the requirements of the researcher's Masters thesis. The purpose of this study is to assess psychological characteristics of collegiate distance runners and their perceptions of their coach's behavior.

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You have been invited to participate in this research project because you are a collegiate distance runner competing in the 2012 indoor track season. Results of this study may potentially lead to an enhanced understanding of the collegiate distance runner as well as identify possible indicators of successful performance.

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Your responses to the survey items will remain completely confidential, with only the primary researcher having access to any identifiable material. All data will be stored in a password protected electronic format. Upon obtaining all the required data, identifiers will be deleted. Furthermore, results of the study will be reported anonymously where no individual's responses will be identifiable.

The procedure involves completing an online survey that will take approximately 20 minutes. Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time by contacting Chris Hammer (248-515-0502) <chammer1234@hotmail.com>. By electronically submitting responses to the questionnaire, it is implied that you consent to participate in this study.

If you have any questions about the research study, please contact Chris Hammer (248-515-0502) <chammer1234@hotmail.com>. This research has been reviewed according to Eastern Washington University IRB procedures for research involving human subjects. If you have any concerns about your rights as a participant in this research or any complaints you wish to make, you may contact Ruth Galm, Human Protections Administrator at Eastern Washington University (509-359-7971/6567) <rgalm@ewu.edu>.

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I appreciate your assistance.

Sincerely,

Chris Hammer  
Eastern Washington University Graduate Student/Project Leader  
248-515-0502  
chammer1234@hotmail.com

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**Appendix D: MTQ48 (to be used only with permission from Clough et al., 2002)**

Please indicate your response to the following items by **circling one** of the numbers, which have the following meaning:

**1** = strongly disagree; **2** = disagree; **3** = neither agree nor disagree; **4** = agree; **5** = strongly agree

Please answer these items carefully, **thinking about how you are generally**. Do not spend too much time on any one item. **ANSWER THE QUESTIONS HONESTLY.**

- 1) I usually find something to motivate me
- 2) I generally feel in control
- 3) I generally feel that I am a worthwhile person
- 4) Challenges usually bring out the best in me
- 5) When working with other people I am usually quite influential
- 6) Unexpected changes to my schedule generally throw me
- 7) I don't usually give up under pressure
- 8) I am generally confident in my own abilities
- 9) I usually find myself just going through the motions
- 10) At times I expect things to go wrong
- 11) "I just don't know where to begin" is a feeling I usually have when presented with several things to do at once
- 12) I generally feel that I am in control of what happens in my life
- 13) However bad things are, I usually feel they will work out positively in the end
- 14) I often wish my life was more predictable
- 15) Whenever I try to plan something, unforeseen factors usually seem to wreck it
- 16) I generally look on the bright side of life
- 17) I usually speak my mind when I have something to say
- 18) At times I feel completely useless
- 19) I can generally be relied upon to complete the tasks I am given
- 20) I usually take charge of a situation when I feel it is appropriate
- 21) I generally find it hard to relax
- 22) I am easily distracted from tasks that I am involved with
- 23) I generally cope well with any problems that occur
- 24) I do not usually criticise myself even when things go wrong
- 25) I generally try to give 100%
- 26) When I am upset or annoyed I usually let others know
- 27) I tend to worry about things well before they actually happen
- 28) I often feel intimidated in social gatherings
- 29) When faced with difficulties I usually give up
- 30) I am generally able to react quickly when something unexpected happens
- 31) Even when under considerable pressure I usually remain calm
- 32) If something can go wrong, it usually will
- 33) Things just usually happen to me
- 34) I generally hide my emotion from others
- 35) I usually find it difficult to make a mental effort when I am tired
- 36) When I make mistakes I usually let it worry me for days after
- 37) When I am feeling tired I find it difficult to get going
- 38) I am comfortable telling people what to do
- 39) I can normally sustain high levels of mental effort for long periods
- 40) I usually look forward to changes in my routine
- 41) I feel that what I do tends to make no difference
- 42) I usually find it hard to summon enthusiasm for the tasks I have to do
- 43) If I feel somebody is wrong, I am not afraid to argue with them
- 44) I usually enjoy a challenge
- 45) I can usually control my nervousness
- 46) In discussions, I tend to back-down even when I feel strongly about something
- 47) When I face setbacks I am often unable to persist with my goal
- 48) I can usually adapt myself to challenges that come my way

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## Appendix E: RSLP-S

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Leadership matters a great deal in the success or failure of any organization. This instrument was designed to measure both positive and negative leadership characteristics.

Please use the following scale to indicate your agreement or disagreement with each of the statements in describing your own attitudes and practices as a leader. If you have not held any leadership position in an organization, then answer the questions as if you were in a position of authority and responsibility. There are no right or wrong answers. Simply rate each question in terms of what you really believe or normally do in leadership situations.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
<u>Strongly Disagree</u>		<u>Undecided</u>		<u>Strongly Agree</u>		
<u>(SD)</u>		<u>(SA)</u>				

For example, if you strongly agree, you may circle 7, if you mildly disagree, you may circle 3. If you are undecided, circle 4, but use this category sparingly.

### RSLP-S

#### Trust/Inclusion

##### The Head Coach:

1. inspires team spirit by communicating enthusiasm and confidence
2. listens actively and receptively to others
3. practices plain talking (means what he says and says what he means)
4. always keeps his promises and commitments to others
5. grants all players a fair amount of responsibility
6. willing to accept other's ideas whenever they are better than his own
7. promotes tolerance, kindness, and honesty
8. creates a climate of trust and openness to facilitate participation in decision making
9. wants to build trust through honesty and empathy
10. devotes a lot of energy to promoting trust, mutual understanding, and team spirit
11. has the courage to assume full responsibility for his mistakes

#### Humility

##### The Head Coach:

1. believes the leader should not be front and center
2. is not primarily concerned with always having full authority
3. doesn't have to have his name attached to every initiative
4. doesn't look at his position as one of power
5. allows his subordinates to have some control
6. doesn't have to be seen as superior to subordinates in everything

#### Service

##### The Head Coach:

1. serves others and does not expect anything in return
2. is willing to make personal sacrifices in serving others
3. finds enjoyment in serving others in whatever role or capacity
4. has a heart to serve others
5. takes great satisfaction in bringing out the best in others.



## VITA

**Author:** Christopher S. Hammer

**Place of Birth:** Mt. Clemens, Michigan

**Undergraduate Schools Attended:** Grand Valley State University

**Degrees Awarded:** Bachelor of Science, 2009, Grand Valley State University

**Honors and Awards:** Graduate Assistantship, Physical Education, Health, and Recreation Department, 2010 – 2012, Eastern Washington University

Recipient of C. Peggy Gazette Endowment Scholarship 2011

Great Lakes Intercollegiate Athletics Conference (GLIAC) Commissioner's Award (2007, 2008)

Collegiate Sports Information Directors of America (CoSIDA) Academic All-District IV (2009)

NCAA D. II Academic All-American (2005, 2006, 2007, 2008, 2009)

**Professional Experience:** Internship, Lilac Bloomsday Run, Spokane, WA, 2012

University Fitness Center Assistant Director (Eastern Washington University), Cheney, WA, 2011-2012

University Activity Class Instructor/Teacher Assistant (Eastern Washington University), Cheney, WA, 2010-2011

Volunteer Assistant Cross-Country/Track Coach (Eastern Washington University), Cheney, WA, 2010-2012

Professional Presentation "Mental Toughness, Servant Leadership, and the Collegiate Distance Runner" at the Northwest Student Sport and Exercise Science Symposium (University of Idaho, April 2012)

Professional Presentation "Mental Toughness and Servant Leadership: Creating a Better Athlete?" at the Eastern Washington University Coaches Clinic (Eastern Washington University, May 2012)

Licensed Mathematics Teacher (Mrachek Middle School), Aurora, CO, 2009-2010

Cross-Country Camp Counselor (Wolverine Cross-Country Camp), Wolverine, MI, 2005-2011

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