An Examination of Mental Toughness in

Competitive Sport

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Thesis submitted to the University of Wales in fulfilment of the requirements for the degree of Doctor of Philosophy at Cardiff School of Sport, University of Wales Institute, Cardiff.

February, 2008
DECLARATION

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

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Finally, to my parents, thank you for helping me get here, for believing and encouraging. Most of all, to my wife, Alison and daughter, Erin, thank you for getting me through this long journey, you give it meaning.
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Abstract

This thesis provided an in-depth examination of mental toughness in sports performers, and comprised three studies, of which Study 3 contained two parts. The aim of the thesis was to: define mental toughness, identify its component parts, devise a working framework of mental toughness, and identify the underlying mechanisms involved in the development and maintenance of mental toughness. Study 1 addressed the definition of mental toughness and its essential components using 10 international performers. The proposed definition emphasized both general and specific dimensions, and 12 attributes fundamental to the ideal mentally tough performer. These covered self-belief, desire/motivation, dealing with pressure and anxiety, focus (performance and lifestyle related), and pain/hardship factors. Study 2 built upon the findings of Study 1 in a sample of eight Olympic or World Champions, three coaches, and four sport psychologists. Findings verified the definition, and identified 30 attributes that were developed into a working framework of mental toughness. The 30 attributes were found to cluster into 13 subcomponents and four dimensions within an overall working framework: a general dimension (attitude/mindset), and three time-specific dimensions (training, competition, post-competition). Study 3 re-interviewed 11 of the participants from Study 2 regarding: (a) the development and maintenance of mental toughness, and (b) how the framework dimensions and subcomponents interacted during the development and maintenance process. Findings revealed four distinct career phases in the development and maintenance of mental toughness. Critical incidents, both positive and negative, were perceived to act as catalysts in cultivating mental toughness, and once acquired, mental toughness needed to be maintained. Findings also confirmed the development and subsequent maintenance of mental toughness over three stages. Factors affecting development and maintenance included: stage 1, skill mastery and socialization; stage 2, competitiveness, successes in training and competitions; and stage 3, international competitive experience, education, the use of mental skills, a wide ranging social support network, and reflective practice. This prolonged research program has resulted in an empirically based definition of mental toughness, the development of a framework depicting its component parts, and provided an in-depth understanding of the mechanisms involved in the development and maintenance of mental toughness. Practical implications indicate that mental toughness develops over three distinct stages, in the dimensional order of attitude/mindset, training, competition, and post-competition, and requires maintenance. Future directions are discussed in relation to measurement and intervention strategies.
CHAPTER 1

INTRODUCTION
Introduction

In the world of elite sport Mental Toughness is a frequently used expression often favored by commentators, media correspondents, athletic coaches, and performers themselves to characterize highly successful athletes and their performances (Bull, Albinson, & Shambrook, 1996; Goldberg, 1998; Loehr, 1986). Over the last five decades, anecdotal accounts and popular texts have associated mental toughness with various learned mental skills (Goldberg, 1998; Jones, 1982; Loehr, 1982, 1986), different ideal performing states (Loehr, 1986), and the coping skills needed to overcome adversity (Pankey, 1993). Despite sport psychology research advancing considerably over the last 20 years the area of mental toughness has received limited systematic research attention. This is surprising because, for some time now, researchers have recognized mental toughness as an important characteristic in sport (e.g., Cattell, Blewett, & Beloff, 1955; Gould, Dieffenbach, & Moffett, 2002; Gould, Hodge, Peterson, & Petlichkoff, 1987). Indeed, as late as 2002, no clear, accepted, or consistent definition of mental toughness was available in the extant literature. Further, there was considerable variability in the subcomponent make up of mental toughness and strategies proposed for its enhancement. The development of a sound empirical understanding of mental toughness would therefore have implications for athletes, coaches, and practitioners, and contribute to increasing the knowledge base with regard to its improvement in sports performers.

Purpose of the Thesis

This thesis reflects a program of research that involved a detailed examination of mental toughness in competitive sport. The goals of the thesis were to: (a) generate a conceptually sound definition of mental toughness, (b) identify the essential attributes which underpin the mentally tough performer, (c) present a working framework of mental toughness, and (d) examine the underlying mechanisms that contribute to the development
and maintenance of mental toughness. As no valid measure of mental toughness was available at the inception of the research program, or has since been published (see Middleton et al., 2004), a qualitative approach was adopted to examine mental toughness in depth. This involved repeated semi-structured interviews with highly elite and world class sports performers, as well as coaches and sport psychologists who have worked with such athletes.

Structure of the Thesis

This thesis comprises six main chapters and contains three empirical studies which are presented as a series of research papers.


Chapter 3 (Study 1) reports an in-depth examination of mental toughness using performance profiling procedures. Elite performers were interviewed regarding their perceptions of mental toughness, and the characteristics of the mentally tough performer. The definition and attributes which emerged from the findings emphasized a critical outcome dimension to mental toughness, suggesting the need to examine mental toughness in a sample of participants that have achieved ultimate success in their respective sporting disciplines (e.g., Olympic and World Champions). The results also suggested the need to broaden the
sample pool to individuals who have worked with these performers for an extended period of time: coaches and sport psychologists. This study has been published as: Jones, G., Hanton, S., and Connaughton, D. (2002). What is this thing called Mental Toughness? An investigation with elite performers. *Journal of Applied Sport Psychology, 14*, 211-224.

Chapter 4 (Study 2). The purpose of this study was to further examine the definition and attributes of mental toughness from Study 1, and to develop a working framework of the essential attributes of mental toughness. The findings of this study provided a framework of mental toughness made up of four dimensions that was used as a template for studying the development of mental toughness in Study 3. This study has been published as: Jones, G., Hanton, S., and Connaughton, D. (2007). A framework of mental toughness in the world’s best performers. *The Sport Psychologist, 21*, 243-264.

Chapter 5 (Study 3) reports a two-part investigation into the development and maintenance of mental toughness. The purpose of part 1 was to examine the underlying mechanisms in developing and then maintaining mental toughness, from the separate perspectives of coaches, sport psychologists and athletes. This was based on Bloom’s (1985) three career phases (for athletes only), and the framework of mental toughness developed in Study 2. The purpose of the second part of the study was to verify how the framework dimensions interacted in the development and maintenance of mental toughness, and the processes by which the framework subcomponents are then developed and maintained.


Chapter 6 summarizes the overall findings of the research program and discusses the conceptual issues derived from it. The chapter also considers the practical implications
emanating from the findings, and discusses the strengths and limitations of the research program. Finally, areas for future research including measurement and the design of specific intervention strategies are discussed.

Considerations in the Presentation of the Thesis

The extended period of time taken to complete this thesis was attributable mainly to the multiple and repeated interviewing of a participant sample that was both exceptional and difficult to access. As a result Study 1 has been published since 2002 (i.e., Jones, Hanton, & Connaughton, 2002). Inevitably, the findings from Jones et al. (2002) have been used by other researchers to further the understanding of mental toughness. In particular, two research papers, Bull, Shambrook, and Brookes (2005), and Thelwell, Weston, and Greenlees (2005), have based their investigations on the findings of Study 1. Being cognizant of the timing of these publications, and to ensure a logical progression throughout the thesis, Bull et al. (2005) and Thelwell et al. (2005) have been deliberately omitted from the review of literature in the second chapter. They are however, contained in the introduction and discussion sections of Chapters 4 and 5 (Studies 2 & 3), as well as the general discussion of the thesis in Chapter 6.

As Study 1 and 2 have been disseminated via published outputs it was decided to present these studies in the exact manner and format that they appear in the public domain. Therefore, in order to ensure a consistent approach throughout the thesis, the following format was adopted for all six chapters and includes: (a) American Psychological Association format and spelling (5th Edition), (b) Table and Figure numbering re-start with each new chapter, and (c) precise reference lists presented at the end of each chapter. The relevant appendices, which consist of interview guides and exemplar transcripts from the studies, follow the general discussion.
Summary

This thesis presents a detailed examination of mental toughness in competitive sport. The rationale for conducting such a study is based upon the lack of empirical research in the extant literature. In order to address the central aims of the program repeated qualitative interviews have been employed with elite and superelite sports performers, coaches and sport psychologists. To the author’s knowledge this is the first thesis dedicated solely to the study of mental toughness within the sport psychology literature.
References


CHAPTER 2

LITERATURE REVIEW
Mental Toughness in Sport: A Review

The aim of this chapter is to review, critique, and synthesize the extant literature surrounding mental toughness. The chapter initially describes the newspaper and general sports reports that have made anecdotal references to mental toughness, and then moves on to discuss sport psychology articles and texts that have provided explanations and definitions from different perspectives. Specifically, these sources suggested mental toughness was: (a) a personality trait, (b) a decisive factor accounting for successful performance, and (c) a defense mechanism against adversity. Following this, training programs purported to develop and also enhance mental toughness are critically reviewed. The final section of the chapter deals with research that has perpetuated the misinterpretation of mental toughness due to limited conceptualizations and measuring instruments.

Introducing Mental Toughness

Psychological characteristics are now commonly accepted as being major contributors to success within the area of sporting performance, in particular, motivation, self-confidence, and the ability to cope with and interpret anxiety-related symptoms as facilitative under pressure (cf. Hardy, Jones, & Gould, 1996; Mellalieu, Hanton, & Fletcher, 2006). Another characteristic that is frequently used to describe why certain individuals have become, “the best in the world” in their respective sports, is that of Mental Toughness (Loehr, 1986; Williams, 1988). Athletes, coaches, members of the press, and sports commentators have cited mental toughness as core to the execution of successful performance, while certain psychologists working in the field of sport suggest mental toughness as key to the advancement of knowledge regarding successful athletes (e.g., Bull, Albinson, & Shambrook, 1996; Goldberg, 1998; Gould, Dieffenbach, & Moffett, 2002; Loehr, 1982, 1986, 1995). Examples included descriptions such as mental toughness having, “more to do with winning than do such obvious physical attributes as speed and power” (Williams, 1988, p. 60), the
most important asset for an athlete (Goldberg, 1998), and critical to possess if the long hours of strenuous training associated with top level performance are to be endured (Bull et al., 1996).

Indeed, a cursory glance through internet search results reveals many commentaries that testify to the importance of mental toughness in sport. In an article on Tiger Woods (USA Today), Blauvelt (2004, para. 1) declared, “for all the physical skills the golf gods gave Tiger Woods, the mental toughness he brings to his sport might be just as important in setting him apart”. The specific example Blauvelt used to illustrate Woods’s mental toughness was during the Bay Hill Invitational tournament in Orlando, 2003. Woods was suffering from severe food poisoning on the Saturday night of the competition and this continued into the final round on Sunday. However, despite the debilitating physical symptoms associated with the condition, he continued to play and won the tournament by 11 strokes, for the fourth consecutive year. The 2004 Ladies tennis final at Wimbledon also resulted in sports commentators bearing witness to the importance of what they perceived to be mental toughness as a contributor to the outcome of the contest. Tracy Austin of NBC Sports, commented on the final between Maria Sharapova, the eventual champion, and Serena Williams, remarking, “Maria Sharapova’s mental toughness and her physical power led her to win the Wimbledon Ladies’ singles title… I wrote in my preview of the match that the 17-year-old Russian is so mentally tough and she’s not awed by anyone – two things she proved in defeating Serena in straight sets” (Austin, 2004; para. 1). Observing the same match, Linda Pearce wrote an article entitled, ‘Sharapova’s arrival a victory for mental toughness’ (Pearce, 2004).

The reasons for unsuccessful performances have also been linked with mental toughness, this time the absence of it. For example, England cricket team captain Michael Vaughan, was quoted as, “slamming England’s domestic structure for failing to produce
players 'mentally tough enough' for international cricket" ("Vaughan hits out," 2003). Also, in the Daily Mail newspaper, Geoff Boycott (described as a former England opening batsman and Yorkshire legend), suggested that Duncan Fletcher's English team had been 'murdered' by Australia in the defense of the 2006 Ashes. Boycott accused the team of, "a lack of mental toughness after they completed the five-Test series ... becoming the first England side to lose all five matches in an Ashes contest since 1920-21" ("Boycott blasts England's 'bottlers'", 2007). An initial inspection reveals that while many of these comments associate mental toughness with qualities such as persistence and emotional control, none of them specifically define their interpretation of mental toughness based on any empirical research. Therefore, while many performers, coaches, and commentators are highlighting mental toughness as a valuable asset or attribute to possess, this appears to be based solely on their own personal experiences from the world of sport. This issue is now discussed within the context of the sport psychology literature.

In the field of sport psychology, mental toughness research appears to be comprehensive in nature, replete with definitions, measurement tools, developmental perspectives, and intervention strategies designed to enhance mental toughness. Nevertheless, a closer inspection of the available literature reveals two important factors: first, a precise and widely accepted definition of mental toughness does not exist; and second, the majority of studies in this area have been based on anecdotal evidence rather than specific investigations into defining and understanding mental toughness. While the previous point may suggest the absence of a definition of mental toughness, this is not the case; indeed, mental toughness has been defined in a multitude of ways by various investigators since the 1950s, and examples of these are presented in Table 1. The various mental toughness definitions and explanations have been diverse and associated with, by and large, positive psychological characteristics
such as: resilience or insensitivity to criticism, an ability to rebound from adversity and failures, and the use of mental skills.

Table 1. Mental Toughness Definitions

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<td>“The ability of an athlete to withstand strong criticism and to avoid becoming upset when losing or performing poorly” (Tutko &amp; Richards, 1971, p. 46).</td>
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<tr>
<td>“The degree of insensitivity the individual has to criticism, playing badly, or losing” (Alderman, 1974, p. 149).</td>
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<td>“Mental toughness is a learned skill ... and concerns freedom from stress and pressure in high-level championship matches” (Jones, 1982, p. 31).</td>
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<td>“A constellation of mental skills, all of which are learned, that are characteristic of mentally tough competitors” (Loehr, 1982, p. 11).</td>
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<td>“You may have the determination to stay at something, to keep trying, to never give up, but mental toughness means you also have the self-control and focus to limit your efforts to only the ones that are effective” (Tunney, 1987, p. 49).</td>
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<tr>
<td>“Mental toughness is really another name for desire. Given talent and luck, desire overcomes just about everything” (Williams, 1988, p. 60).</td>
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<td>“Achieving consistency is the ultimate measure of MT” (Graham &amp; Yocom, 1990, p. 47).</td>
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<tr>
<td>“Mental toughness is the outward manifestation of an inner commitment. It’s a refusal to quit on that dream, no matter what” (Goldberg, 1998, p. 219).</td>
</tr>
<tr>
<td>“Mental toughness is the ability to stand tall in the face of adversity. It’s a psychic resilience that allows you to rebound from setbacks and failures time and time again” (Goldberg, 1998, p. 219).</td>
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<tr>
<td>“Mental toughness is the ability to sustain high levels of motivation, activity and confidence in the face of anything that life throws at you” (Teitelbaum, 1998, p. 2).</td>
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<td>“Mental toughness is the ability to keep picking yourself up no matter what life hits you with - to keep marching steadily forward to achieve the specific victories you have made up your mind you are going to make happen” (Teitelbaum, 1998, p. 7).</td>
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With so many contradictory explanations of mental toughness, no clear or broadly established definition has emerged from the literature. The conceptual confusion created from this lack of understanding has resulted in positive psychological characteristics being incorrectly labeled as mental toughness. The following sections present a critique of the ambiguity within the mental toughness literature.

*Examining Mental Toughness from Different Perspectives*

There are numerous articles (e.g., Goldberg 1992; Hodge, 1994; Jones, 1982; Williams, 1988) and books (e.g., Bull et al., 1996; Gibson, 1998; Goldberg, 1998; Loehr, 1982, 1986, 1995; Luszki, 1982) which refer to mental toughness, either within the title or inherent within the text itself. From reviewing these sources it appears that most of the commentary on mental toughness appears to be based on anecdotal evidence and personal opinions rather than scientific research and often the studies investigated mental skills rather than mental toughness *per se*. These articles and texts can be broadly categorized into six distinct areas: (a) citations which have included mental toughness in the title only; (b) studies that have defined mental toughness as a personality trait; (c) sources that have identified mental toughness as a decisive factor accounting for successful performance; (d) articles that have suggested mental toughness as a defense mechanism against adversity; (e) mental skills programs which are purported to enhance performance through the development of mental toughness; and finally, (f) research that has attempted to address mental toughness based on the conceptual limitations of previous studies and psychometrically questionable measures.

*Mental Toughness as a Title Heading*

There has been frequent citing of mental toughness within the titles of articles and books with little explanation, or even mention, of mental toughness contained within the text (e.g., Bull et al., 1996; Favret & Benzel, 1997; Gibson, 1998; Hodge, 1994; Loehr, 1982, 1986, 1995; Williams, 1998). For example, in an article titled, 'Mental toughness in sport:
Lessons for life. The pursuit of personal excellence’, Hodge suggested that athletes should develop mental toughness when pursuing personal excellence as this was vital to be able to handle the stressful and publicly evaluated situations that occur in sport. Hodge proposed that, “champions are just ordinary people who do extraordinary things and emotional experiences need to be harnessed to develop mental toughness” (p.12). Indeed, the building blocks of mental toughness, according to Hodge, are achieved by practicing at being mentally strong enough to endure the pressure, while remaining focused on mastery goals, hard work, determination, and commitment. However, Hodge based these building blocks solely on his experience and personal observations throughout his career as a sport psychologist/coach, and no explanation of mental toughness within the article was presented.

Similarly, Bull et al. (1996) devoted a full chapter to mental toughness within their applied text, ‘The Mental Game Plan’. They endorsed mental toughness as important in assisting athletes to cope with injuries and setbacks, as well as the pressures of intensive training workloads. Bull et al. suggested developing mental skills to improve what they felt were the six specific attributes of mental toughness: a strong desire to succeed, staying positive in the face of challenge and pressure, being able to control the ‘controllables’, demonstrating high commitment with a balanced attitude, having a high level of self-belief, and lastly, displaying positive body language. While providing many useful practical examples to support these attributes, Bull and colleagues failed to provide a definition or any detail with regard to their program of research. In fact, their suggestions were based on their experiences of working with many world class performers, rather than grounded in theoretical and scientific research. These two examples represent a common approach that researchers have employed when investigating this construct, and despite the value of working with such elite performers, and the intuitive appeal of the observations, the lack of
empirical research is problematic. The following sections discuss how the understanding of mental toughness has evolved since the 1950s, beginning within the personality literature.

*Mental Toughness as a Personality Trait*

As early as 1955, Cattell, Blewett, and Beloff described mental toughness as one of the most important personality traits for success, and that it tended to be culturally or environmentally determined. Supporting this, Tutko and Richards (1971, 1972) and Tapp (1991) identified mental toughness as one of a number of personality traits that were related to high athletic achievement and success. It was suggested that, “the athlete who is mentally tough is somewhat insensitive to the feelings and problems of others” (Tutko & Richards, 1971, p. 46), and that, “being able to handle pressure off the field can help you be mentally tough on it” (Tapp, 1991, p. 45). Further, developing mental toughness in ‘sensitive’ athletes could be achieved, “by informing the individual ahead of time that, he will often be required to take a chewing out... to get across a message with strong emphasis” (Tutko & Richards, 1972, p. 46). Tutko and Richards (1972) also proposed a measure of mental toughness, the Motivation Rating Scale (MRS); however, no clear explanation was provided regarding a definition of mental toughness (by Tutko & Richards, or Tapp), or how a scale assessing ‘motivation’, lacking any reliability and validity data, was proposed to measure mental toughness. In fact, Dennis (1978) concluded that, “there is still some question as to whether mental toughness is a valid personality construct” (p. 386). It was clear at this time that researchers regarded mental toughness as an important component in sport, and pursued its investigation as one of the influential qualities necessary for successful performance.

*The Importance of Mental Toughness in Sporting Success*

In 1974, Alderman suggested that top-level sport was a ruthless, cold, and hard business, and no place for the tender-spirited, with successful athletes being not only physically tough, but mentally tough as well. Luszki (1982) viewed mental toughness as
important for successful performance and one of the four principles required to win at the highest levels of competition. Luszki also suggested that when the best athletes are competing, these four principles (i.e., physical well-being, skill, experience, and mental toughness) were working together. Importantly though, mental toughness was proposed as being ultimately responsible for the acquisition of the other three principles. Similarly, Tunney (1987) identified four factors that winning teams were built on: self-discipline, self-sacrifice, mental toughness, and teamwork, and proposed that the individuals who were mentally tough possessed the self-control and focus to limit their efforts to only the effective ones. Jim Loehr has written extensively on the subject of mental toughness, and in three books (Loehr, 1982, 1986, 1995), suggested that the world's greatest athletes give testimony to the existence of mental toughness every time they perform. Mental toughness, according to Loehr, separates the few who make it from the thousands who are unsuccessful in sport, proposing that mentally tough performers consistently responded to problems, pressure, making mistakes, and competition with the right attitude. In a similar manner, Goldberg (1992) suggested that most coaches readily believe mental toughness is necessary for success and that, “the ability to handle competitive pressures is a cornerstone skill of mental toughness” (p. 60).

While this approach of linking mental toughness with the qualities of successful performers was popular, other investigators tried to adopt the perspective that a lack of mental toughness was the reason for unsuccessful performances. Williams (1988) proposed fear and insecurity as the main causes for performers to lose, and individuals who were mentally weak latched on to these reasons for losing. Goldberg (1992) linked non-mentally tough performers with lack of control by suggesting that the opposite of mental toughness was being out of control and powerless. Likewise, Pankey (1993) indicated that the absence of toughness interferes with the ability to cope with challenge, and negatively affects a
person's self-image as an effective master of adversity. Additionally, those who are not 'tough' react to stressors in a more disorganized manner, resulting in ineffective coping, helplessness, and ultimately, depression.

Similar to the previous section, these studies were a result of personal belief and coaching experience rather than empirical research. Additionally, many studies did not set out primarily to investigate mental toughness, but addressed other psychological factors related to successful and unsuccessful performances (e.g., coping skills). As a result, no definition of mental toughness or explanation with regards to its make-up was provided. The variability and ambiguity in the literature has resulted in confusion surrounding the exact make-up of mental toughness, and led many investigators to approach the understanding of mental toughness from the perspective that, somehow, it provided protection from adversity.

**Mental Toughness as a Defensive Mechanism against Adversity**

Certain authors have suggested that possessing mental toughness allows a performer to overcome adversity and provide a degree of insensitivity to criticism (Alderman, 1974; Bull et al., 1996; Favret & Benzel, 1997; Goldberg, 1992, 1998; Graham & Yocom, 1990; Loehr, 1982, 1986, 1995; Pankey, 1993; Tapp, 1991; Taylor, 1989; Williams, 1988; Woods, Hocton, & Desmond, 1995). For example, Pankey suggested that mental toughness helps individuals to grasp the coping skills needed to overcome adversity, while Goldberg (1992, 1998) equated mental toughness to numerous mental skills including, the ability to bounce back quickly from setbacks or when faced with misfortune. Loehr (1982) claimed that mentally tough individuals can consistently sustain their ideal performance state during the heat of competitive battle and increase their flow of positive energy in crisis and adversity.

As is becoming a consistent theme within this review chapter, these studies were either based on personal beliefs acquired from consulting with elite performers and not grounded in experimental research or, once more, did not explicitly address mental toughness. To
illustrate this point, the purpose of Pankey’s text was to identify the qualities necessary for successful performance and not the qualities of mental toughness. Similarly, other authors proposed specific mental techniques and skills purported to sustain a performer’s ideal performance state (Loehr, 1982, 1986, 1995), and overcome slumps in the achievement of peak performance in sport (Goldberg, 1998). These mental techniques and skills were then suggested to be components of mental toughness, without the provision of any underlying rationale or supporting data. Therefore, this association with mental skills and specific positive psychological characteristics has been unjustified and responsible for the misinterpretation of mental toughness with more or less every positive psychological characteristic. Despite this, researchers have continued to propose mental skills training programs to develop mental toughness, rather than specific mental toughness programs, in an attempt to enhance performance.

Developing Mental Toughness

As it was believed that mental toughness was not an inherited gift, but the fruits of learning which were acquired through hard work, understanding, and practice, many specific mental skills and physical training programs have been designed to develop mental toughness in performers (e.g., Jones, 1982; Loehr, 1982, 1986, 1995; Tapp, 1991; Watts, 1978). Watts, for example, devised various techniques to develop mental toughness, which consisted of extreme physical workouts with minimal rest. He believed that this taught performers to accept adversity and pain as a natural part of training, thereby allowing athletes to rise above such pain and dull their awareness of it in competition. Loehr (1982, 1986, 1995) suggested that the acquisition of nine specific characteristics were required to be a mentally tough competitor. These were: being 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, doggedly self-confident, and fully responsible.
Furthermore, Loehr (1986) suggested the ultimate measure of mental toughness was consistency, and devised the Psychological Performance Inventory (PPI) to profile a performer’s mental strengths and weaknesses. Loehr regarded this profile as the individual’s mental toughness score, which was subdivided into seven sub-scales (i.e., self-confidence, negative energy, attention control, visual and imagery control, motivational level, positive energy, and attitude control). Each subscale contained six items with scores ranging from 6 to 30. Strategies were proposed to overcome any sub-scale deficiencies via a six stage, ‘Athletic Excellence Training Program’ (AET). The AET claimed to educate the athlete on how to create a greater self-awareness and better understanding of their ‘Ideal Performance State’ (IPS), which contributes to enhanced emotional control during competition. The impact of the AET was to increase performance consistency, which Loehr viewed as the most important aspect of mental toughness.

In a similar vein, Goldberg (1998) provided guidance on specific mental techniques and skills he believed necessary to become mentally tough within a text that was designed to be a practical approach to achieving peak performance. The techniques and skills entailed seven characteristics that performers possessed when, “they are at their best…. but are conspicuously absent when you’re caught in the clutches of a slump” (Goldberg, 1998, p. 4). These included: passion and fun, high self-confidence, concentration on the process of the performance, resilience, a sense of challenge, a non-thinking automatic quality, and a sense of relaxation during the performance. Goldberg then proposed ten ‘slump busting steps’ to develop a positive attitude in order to achieve peak performance and mental toughness. These were: ruling out non-mental causes, establishing self-control, developing a championship focus, dealing with your fears, expecting success, developing positive images, setting slump busting goals, building self-confidence, becoming mentally tough, and insuring against future slumps.
Despite the practical appeal, the work of Watts, Loehr, and Goldberg omitted to reveal any systematic research programs, or indeed, provide any evidence base to describe the methods involved in defining and measuring what they suggested mental toughness to be. No research appears to have been carried out to determine the effectiveness of Goldberg’s slump busting steps and Loehr’s AET, or whether Watts’s methods actually developed mental toughness or contributed to his team’s success. Equally no psychometric support for the PPI (Loehr, 1986) was presented or has since been made available, and it has been criticized for lacking predictive validity (Middleton et al., 2004). The mental techniques Goldberg proposed were based on personal experience of dealing with elite athletes, and no other published research has supported any of these authors’ assertions. Finally, the combined list of psychological skills necessary to achieve Loehr’s and Goldberg’s states of mental toughness appear to be endless, creating further confusion for researchers trying to understand mental toughness. Despite these issues, certain investigators have applied Loehr’s (1982, 1986) explanation and measurement of mental toughness to their investigations. This has resulted in researchers proposing inventories and methods of developing and enhancing mental toughness based on questionable conceptualizations and potentially invalid measures (e.g., Clough, Earle, & Sewell, 2002; Golby, Sheard, & Lavallee, 2003; Goldberg, 1998; Hodge, 1994; Lee, Shin, Han, & Lee, 1994; Shin & Lee, 1994). This is expanded upon in the following section.

Research Purporting to Investigate Mental Toughness

Using Loehr’s (1986) Psychological Performance Inventory (PPI), Shin and Lee (1994), and Lee et al. (1994) investigated mental toughness in elite and nonelite female performers, and Korean table tennis players, respectively. Based on their findings, Shin and Lee proposed mental toughness as one of the best indicators in identifying membership to skill level groups, while Lee et al. suggested that athletes who participated in volleyball,
archery, and shooting displayed higher levels of mental toughness in comparison to athletes who participated in table tennis and badminton. Not surprisingly, because the PPI was purported to be a measure of mental toughness (Loehr), neither study made any attempt to define or identify the characteristics of mental toughness. More recently, Golby et al. (2003) examined the relationship between demographic characteristics of rugby players and selected aspects of psychological performance in rugby league football. Once again, the PPI (Loehr, 1986) was used to measure mental toughness, and findings suggested no significant differences in mental toughness across the groups under investigation. Golby et al. concluded that the PPI contained insufficient discriminative power and only measured distinct attributes of mental skills and not mental toughness. As already mentioned, to use the PPI (Loehr, 1986) as a central measure of mental toughness in these studies is somewhat misleading in as much as the originator failed to define or justify the inventory as a specific measure of mental toughness.

Coming from a different perspective, Clough et al. (2002) proposed that mental toughness was ‘hardiness’ transposed into a more sport-specific setting with an additional inclusion of confidence. Confidence was justified as an element of mental toughness as Clough and colleagues felt it was an important factor relating to sports performance. They defined mental toughness in terms of characteristics that individuals possess suggesting that:

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 can control their own destiny, these individuals can remain relatively unaffected by competition or adversity (Clough et al., 2002, p. 38).

Clough et al. also devised a 48-item questionnaire (MT48) based on Loehr’s (1982, 1986, 1995) explanation of mental toughness (i.e., a constellation of mental skills), anecdotal
evidence gathered from athletes, coaches, and sport psychologists, and hardiness. The construction of the MT48 was based on what Clough et al. proposed as the 4 C’s of mental toughness, which consisted of the three elements of hardiness (commitment, control, and challenge: Kobasa, 1979), and confidence. The MT48 has been reported by Clough et al. to have an overall test-retest coefficient of .90, with internal consistency of .73 (Control), .71 (Commitment), .71 (Challenge), and .80 (Confidence), and participants who scored high on the MT48 reported lower ratings of exertion during a 30 minute cycle ride compared with participants who achieved a low score. Further, Crust and Clough (2005) found significant correlations between MT48 scores and the time a relative weight dumbbell (1.5% of body weight) could be suspended directly in front of the body. However, Clough et al. did not provide any details regarding the participants, data collection procedures, or a rationale for their conceptualization of mental toughness (i.e., hardiness and confidence). Theorists would argue that hardiness (Kobasa, 1979) is a distinct conceptual construct, and no research has thus far has investigated any direct association between hardiness and mental toughness. Therefore, the findings of the MT48 are conceptually based on hardiness theory, and not mental toughness. As such the MT48 can not be considered a valid measure of mental toughness. This is problematic, considering that studies (i.e., Clough & Earle, 2002; Crust & Clough, 2005; Levy, Polman, Clough, Marchant, & Earle, 2006) have used the MT48 in an attempt to measure mental toughness. Other measures of mental toughness have also been proposed (e.g., Middleton, Marsh, Martin, Richards, & Perry, 2004), however, to date, no research supporting the psychometric properties or rationale for the construction of such a measure has been published.

Critically, it appears that Lee, Clough, and Golby (and colleagues) have based their research on personal opinion, or previous research that did not, in effect, investigate mental toughness directly (e.g., Loehr, 1982, 1986). The PPI appears to measure a collection of
mental skills which Loehr (1986) linked with a performer’s IPS rather than mental toughness. The psychometric properties lack norms, or any reliability or validity data, and provide no clear rationale for the construction or selection of inventory items (cf. Murphy & Tammen, 1998). Equally, the MT48 lacks any sound psychometric properties that specifically relate to mental toughness, and theorists would argue that hardiness (Kobasa, 1979) is a different conceptual construct. Finally, Clough and colleagues have omitted to offer any satisfactory rationale as to why mental toughness is a sport-specific form of hardiness. With no comprehensively sound measure of mental toughness in existence (Middleton et al., 2004), a quantitative approach can only create more confusion in the understanding of mental toughness, and this conclusion led certain researchers to begin to examine this construct through qualitative means.

In 2001, Fourie and Potgieter published a qualitative study in a South African national journal which was purported to investigate the components of mental toughness using expert coaches and elite athletes from a variety of different sports. Coaches and athletes provided written statements regarding their interpretation of the characteristics of mental toughness resulting in the identification of twelve components: motivation level, coping skills, confidence maintenance, cognitive skill, discipline and goal-directedness, competitiveness, possession of prerequisite physical and mental requirements, team unity, preparation skills, psychological hardiness, religious convictions, and ethics. Additional findings suggested that the coaches regarded concentration as the most important characteristic of mental toughness, while the athletes rated perseverance the highest. However, upon closer inspection, many of the same conceptual issues found in previous studies were evident here. Specifically, less than a quarter of participants actually competed or coached at international level, questioning the validity of such an elite and expert sample. In addition, no definition of mental toughness was investigated or proposed, and there appeared to be some confusion with the wording and
meanings of the twelve components. For example, Fourie and Potgieter (2001) defined ‘psychological hardiness’ as, “the ability of the athlete to reveal a strong personality, emotional and psychological well-being, to take charge and show autonomy” (p. 68), which is in contrast to Kobasa’s (1979) established and accepted definition of hardiness. Another component, ‘cognitive skill’, was defined as, “the ability to concentrate, focus, think, make decisions and analyze” (p. 67). There is, of course, the strong possibility that many performers can demonstrate this quality (i.e., Cognitive skill) but may not necessarily be regarded as mentally tough.

A recent review of the mental toughness literature by Crust (2007) typifies the misunderstanding and lack of conceptual clarity with regard to mental toughness. The review fails to distinguish between empirical research that has specifically addressed mental toughness and anecdotal evidence, such as book chapters and populist texts based primarily on personal accounts, and as a result, there is much contradiction and conceptual confusion evident. For example, Crust proposes the need to derive a definition of mental toughness from relevant theories of personality and development. The suggestion to uncover a theory and attempt to align mental toughness with it, almost in a post hoc fashion, resulted in the identification of the 4C’s of mental toughness and the development of the MT48 (Clough et al., 2002). However, as previously explained, Clough et al. did not provide a rationale as to why mental toughness is a sport-specific form of hardiness, or justification for the conceptualization of the 4C’s as subscales of a measure of mental toughness (i.e., the MT48). Furthermore, Crust highlights the inadequacies of the development of Clough et al.’s MT48 by suggesting that the authors did not justify the transposition of hardiness to mental toughness. Therefore, using hardiness as the conceptual and theoretical basis for the majority of the MT48 subscales, and applying it as a specific measure of mental toughness was unjustified. Despite this questionable rationale, Crust devoted much of the review to
supporting the MT48 as measure of, and means to further enhance the understanding of mental toughness.

Précis of Conceptual Misinterpretation

To sum up the conceptual misinterpretation and previous commentary, mental toughness has been a popular topic and subjected to repeated investigations over the years. It has been defined by authors in a multitude of ways that have suggested it as a constellation of learned mental skills (Goldberg, 1998; Jones, 1982; Loehr, 1982, 1986). With no clear, accepted, or consistent definition, the majority of explanations only served to confound the precise nature and make-up of mental toughness. Indeed, many studies failed to investigate mental toughness, but linked the characteristics of mental toughness with successful performance and coping with adversity. The findings from non-empirical studies appear to be based on anecdote, acquired more from consulting and working with elite performers rather than from any systematic program of research. Additionally, they have incorrectly associated the possession of psychological skills as an indicator of mental toughness. Certain studies have tried to investigate mental toughness via quantitative means using problematic measures such as the PPI and MT48, despite researchers' agreement that no comprehensively sound measure of mental toughness exists. Therefore, after reviewing the literature, it was evident that: (a) a widely accepted definition of mental toughness did not exist; (b) the component attributes, and methods for development, were highly inconsistent across investigations, and included numerous positive psychological attributes and mental skills; and (c) although certain psychometric inventories were purported to be available for examining mental toughness, these lacked sound psychometric properties and focused primarily on hardiness and mental skills.

This aim of this thesis was, therefore, to address a number of the key issues which emanated from reviewing the available literature: defining mental toughness and identifying
its attribute make up; developing a framework of mental toughness; and finally, explaining
the perceived mechanisms underlying the development and maintenance of mental toughness.
References


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CHAPTER 3

Study 1

WHAT IS THIS THING CALLED MENTAL TOUGHNESS? AN INVESTIGATION OF ELITE SPORT PERFORMERS
Abstract

The literature on mental toughness is characterized by a general lack of conceptual clarity and consensus as to its definition, as well as a general failure to operationalize the construct in a consistent manner. This study addressed two fundamental issues surrounding mental toughness: how can it be defined? and what are the essential attributes required to be a mentally tough performer? Ten international performers participated in either a focus group or one-to-one interviews, from which a definition of mental toughness and the attributes of the ideal mentally tough performer emerged. The resulting definition emphasized both general and specific dimensions, while the 12 attributes covered self-belief, desire/motivation, dealing with pressure and anxiety, focus (performance-related), focus (lifestyle-related), and pain/hardship factors.
Introduction

Mental toughness is probably one of the most used but least understood terms used in applied sport psychology. The literature includes numerous contributions dedicated to the notion of developing mentally tough performers (e.g., Bull, Albinson, & Shambrook, 1996; Gibson, 1998; Goldberg, 1998; Loehr, 1982, 1986, 1995), but the widely-differing definitions and resulting operationalization have only served to induce confusion rather than clarity.

Proposed definitions include: an ability to cope with or handle pressure, stress, and adversity (Goldberg, 1998; Gould, Hodge, Peterson, & Petlichkoff, 1987; Williams, 1988); an ability to overcome or rebound from failures (Dennis, 1981; Goldberg, 1998; Gould et al., 1987; Taylor, 1989; Tutko & Richards, 1976; Woods, Hocton, & Desmond, 1995); an ability to persist or a refusal to quit (Dennis, 1981; Goldberg, 1998; Gould et al., 1987); an insensitivity or resilience (Alderman, 1974; Goldberg, 1998; Tutko & Richards, 1976); and the possession of superior mental skills (Bull et al., 1996; Loehr, 1982, 1986, 1995). Specifically, according to Loehr (1982), mentally tough athletes respond in varying ways which enable them to remain feeling relaxed, calm, and energized because they have learned to develop two skills; first, the ability to increase their flow of positive energy (i.e., using energy positively) in crisis and adversity, and, second, to think in specific ways so that they have the right attitudes regarding problems, pressure, mistakes, and competition. Furthermore, mental toughness has also been described as both a personality trait (Werner, 1960; Werner & Gottheil, 1966; Kroll, 1967) and a state of mind (Gibson, 1998). Cattell (1957), for example, suggested that mental toughness is manifested in realistic, self-reliant, cynical behavior, and represents some sort of tough, practical, mature, masculine, and realistic temperamental dimension. Gibson (1998) went on to suggest that harsh experiences toughen one’s spirits to endure the dilemmas of life and success is achieved through effort. Therefore, by knowing one’s limitation boundaries, realistic goals can be successfully accomplished which in turn establish
new goals leading to further success and developing mental toughness. Effectively, Gibson is suggesting that mental toughness is relating to an internal locus of control and self-efficacy.

The characteristics of mentally tough performers proposed in the literature have also been wide ranging and include: high levels of optimism, confidence, self-belief, and self-esteem (Bull et al., 1996; Favret & Benzel, 1997; Goldberg, 1998; Gould et al., 1987; Graham & Yocom, 1990; Hodge, 1994; Loehr, 1982, 1986, 1995; Luszki, 1982; Pankey, 1993; Taylor, 1989; Woods, Hocton, & Desmond, 1995); achieving consistency (Gould et al., 1987; Graham & Yocom, 1990; Loehr, 1982, 1986; Williams, 1988); desire, determination, and commitment (Bull et al., 1996; Goldberg, 1998; Hodge, 1994; Loehr, 1982, 1986; Luszki, 1982; Tunney, 1987; Williams, 1988); focus and concentration (Goldberg, 1998; Graham & Yocom, 1990; Jones, 1982; Loehr, 1982, 1986; Luszki, 1982; Tunney, 1987); and willpower, control, motivation, and courage (Bull et al., 1996; Favret & Benzel, 1997; Gould et al., 1987; Graham & Yocom, 1990; Hodge, 1994; Loehr, 1982, 1986; Tunney, 1987; Tutko & Richards, 1976; Woods et al., 1995). It appears, therefore, that virtually any desirable positive psychological characteristic associated with sporting success has been labelled as mental toughness at one time or another. Despite the breadth and differences of opinion surrounding this construct, there does appear to be some agreement that mental toughness is reflected in an athlete’s ability to cope with stress and resultant anxiety associated with high pressure competitive situations (cf. Goldberg, 1998; Gould et al., 1987; Pankey, 1993; Williams, 1988).

The general lack of clarity and precision surrounding the term mental toughness is unfortunate since it is arguably one of the most important psychological attributes in achieving performance excellence (cf. Gould et al., 1987; Williams, 1998). For example, over a decade ago, Gould et al. (1987) reported that 82% of coaches rated mental toughness as the most important psychological attribute in determining wrestling success. Within the study no
clear definition of mental toughness was forwarded, but the authors suggested that it seemed most closely related to the performers’ levels of self-efficacy and motivation. Interestingly, only 9% of these coaches stated that they were successful in developing or changing mental toughness in the performers they worked with. Also, Williams (1998) recently suggested “mental toughness may have more to do with winning than do such physical attributes as speed and power” (p. 60).

The lack of scientific rigor that has been applied in addressing mental toughness may be the key to the general lack of conceptual clarity within this area. The investigation described in this paper attempted, therefore, to address a major gap in the sport psychology literature. The purpose of this study was to conduct a scientific investigation which attempted to define and identify key attributes which underpin mental toughness. Consistent with a number of recent studies that have advocated the use of alternative approaches, the present study adopted a qualitative approach. This was chosen as it appeared to be an ideal methodology for this investigation, giving the researchers the opportunity to probe peoples’ responses and establish detailed information, especially with regard to new research questions (e.g., Gould, Eklund, & Jackson, 1993; Hanton & Connaughton, 2002; Hanton & Jones, 1999; Patton, 1990). Specifically, a focus group session with elite performers was conducted which generated the initial data for a profile of the ideal mentally tough performer. Focus groups have been used in previous research where the participants have brought to the focus groups their own personal constructs (e.g., Butler, Smith, & Irwin, 1993). The personal constructs are revealed to the researchers and then discussed by the group. The findings from the focus group were further developed and progressed through a series of individual interviews which probed individual performers’ personal constructs underlying mental toughness. Interview techniques were considered an appropriate method of enquiry because they provided the opportunity to accumulate as much quality detailed information and ensure
that mental toughness was explored both fully and accurately (cf. Hanton & Jones, 1999; Mason, 1997).

One of the main advantages of qualitative research is that it allows researchers to gain an indepth understanding of the participants’ personal constructs and experiences. The aim here, therefore, was to progress beyond “popular” sport psychology approaches that emphasize macrocomponents such as confidence and coping with adversity as underpinning the construct and to identify the micro-components of mental toughness. Personal construct theory (Kelly, 1955), the general framework on which this study was based, emphasizes the way in which the person construes or interprets events; it focuses on both the uniqueness of the individual and the processes common to all people. The fundamental premise of personal construct theory is that individuals strive to make sense of the world and themselves by constructing personal theories. This leads them to anticipate what will happen in given situations, and subsequently their theories are either validated or revised in light of how well these theories enable and guide them to see into the immediate and long-term future (Bannister & Fransella, 1986). According to personal construct theory, a person is basically a scientist, striving to understand, interpret, anticipate, and control the personal world of experience for the purpose of dealing effectively with it (Hjelle & Ziegler, 1992). Indeed, performance profiling is a natural application of Kelly’s personal construct theory, as it takes the perspective of the athlete to be fundamental and enhances the understanding of the athlete. Constructs identified through the performance profiling process are generated by the athlete, and in the athlete’s own words (Butler & Hardy, 1992). The process involves eliciting what the athlete considers to be, in the case of this study, the qualities of the ideal mentally tough performer, and has been applied effectively with individuals and teams in a range of sports including archery, field hockey, athletics, gymnastics, ice skating, weight-lifting, squash, swimming, speed skating, cycling, association football, judo, rowing, and modern

Method

Participants

Consistent with qualitative methodologies (e.g., Lincoln & Guba, 1985; Patton, 1990), purposive sampling was used to select study participants. Ten international performers (3 women and 7 men; \( M_{\text{age}} = 31.2 \ \text{years}, \ SD = 5.28 \)) agreed to participate. In line with Hanton and Connaughton (2002) and Woodman and Hardy (2001), the major consideration for selection was that participants had achieved full international honors and represented their country in major events (e.g., Olympic or Commonwealth Games). The performers had an average of five years of international experience and were chosen in order to gain a diverse representation of sex and sport. The sports represented were swimming, sprinting, artistic and rhythmic gymnastics, trampolining, middle-distance running, triathlon, golf, rugby union, and netball. One of the participants had competed as an international in two different sports at different stages in his career. Five of the participants were past internationals while the remaining five were still competing.

Procedure

The procedure for this study was divided into three main stages (Stage 1: focus group; Stage 2: individual interviews; Stage 3: individual rating of definition and ranking of mental toughness attributes), but for all participants standardized introductory comments were provided concerning the rationale for the study, the use of data, issues regarding confidentiality and the participants' rights, and the reasons for audio-taping the focus group and interviews. Two general instructions were then provided for the entire sample. First, participants were asked to base the profile of the ideal mentally tough performer on themselves, any individual they believed to be mentally tough, or even a combination of
several individuals who had certain qualities (but possibly not all) of being mentally tough. The second general instruction explained that participants could draw upon all aspects of their experience as an athlete to create an overall framework. Therefore, participants could relate their own experiences, in addition to observed examples, to formulate the profile of the ideal mentally tough performer. To help establish the parameters of the study, participants were asked questions relating to their experiences as an elite performer both in and outside the performance arena.

Following procedures successfully adapted by Butler et al. (1993) and Dale and Wrisberg (1996), Stage 1 required three participants within a focus group environment to brainstorm and discuss (a) a definition of mental toughness, and (b) an exhaustive list of the fundamental prerequisite qualities and attributes of the ideal mentally tough performer. Specifically, the performers were encouraged to engage with one another and verbally formulate their ideas regarding mental toughness (Kitzinger, 1994). They were then asked to reach consensus on a definition of mental toughness. Following this, they were asked to identify and discuss all necessary attributes that the ideal mentally tough performer possessed until saturation was deemed to have occurred (cf. Glaser & Strauss, 1967). Each attribute was examined and probed in detail and sporting examples provided before proceeding to the next attribute. Clarification and elaboration probes were used to ensure an accurate and in-depth understanding of what the participants were describing, and to create a consistent level of depth across the interviews (cf. Patton, 1990). Finally, participants revisited the original definition they generated in light of the process of identifying and discussing the individual attributes of mental toughness.

Stage 2 involved conducting individual interviews, either face-to-face or via the telephone (cf. Gould, Finch, & Jackson, 1993) with the remainder of the sample using the information generated from the focus group in Stage 1. Specifically, in each interview the
individual was asked to generate his or her own definition of mental toughness, before being provided with, and asked to comment on, the definitions generated in the focus group and previous interviews. Further, the attributes generated in Stage 1 were then presented individually and the interviewee’s sentiments regarding each attribute were discussed. The interviewee was then probed for any additional attributes not presented thus far. The research team then discussed each individual interview and the attributes before progressing on to the next interview.

By repeating this process for each individual a more complete profile of the ideal mentally tough performer was developed. Consistent with the procedures adopted in Stage 1, all performers had the opportunity to revisit the definition following the procedure.

In line with personal construct theory (Kelly, 1955), participants were asked to identify, describe, and explain with examples what the attributes meant to them. Confidentiality was assured throughout, and participants were reminded that there were no right or wrong answers, to take their time responding to questions, and to tell the interviewer if they could not remember something rather than guess (Hindley, 1979; Moss, 1979). The final section of the interview discussed the interview experience and any issues which may have been overlooked. Following each stage the definition and attributes were sent to participants, and comments regarding their accuracy were solicited. The performers all confirmed that the information provided accurately reflected their experiences of mental toughness.

The focus group lasted three hours, was audiotape-recorded in its entirety and transcribed verbatim yielding 40 single-spaced typed pages. Subsequent interviews lasted between approximately 60 and 90 minutes, were tape recorded in their entirety, transcribed verbatim and yielded over 300 single-spaced typed pages.
Stage 3 first involved the researchers independently and then collectively reviewing the participants' definitions of mental toughness and their accompanying comments on each. The researchers then arrived at an agreed definition that embraced all of the factors and key elements emerging from the focus group and interviews. The definition and attributes of the ideal mentally tough performer were then distributed to all of the participants who were first asked to rate the extent to which they agreed with the definition on a scale from 1 (not at all) to 10 (totally agree). The participants then rank-ordered the attributes in terms of their importance to the ideal mentally tough performer (with 1 being the most important and 12 being the least important).

Analysis

The data analysis procedures adopted in this study incorporated three steps: (a) transcripts were independently studied in detail by all three researchers to ensure content familiarity; (b) it was agreed, in line with Sparkes (1998) and Woodman and Hardy (2001), that the reader should be given the opportunity to interpret the data in a manner that may be more meaningful to them. Therefore, the chosen method of analysis was to present the attributes directly from the transcripts using selections of direct textual quotations. In this way the quotes can “speak for themselves,” thus enabling the reader to fully understand the issues involved (cf. Woodman & Hardy, 2001); and (c) trustworthiness characteristics were met throughout via thick description, recording and transcribing all interviews, peer debriefing, and member checking. In addition, regular meetings were held between the research team to ensure full understanding of the textual material which was generated.

Results

Due to the true complex nature of mental toughness, the results present the definition and subsequent attributes separately. Athletes were asked, in their own words, to: (a) define
mental toughness, and (b) identify and describe their perception of the attributes of the ideal mentally tough performer. For the purpose of the results, each attribute is reported separately.

*Mental Toughness Definition*

The definition that emerged from the procedure described previously was as follows:

*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.*

Therefore, mental toughness provided the performer a psychological advantage over opponents. This advantage, either innate or developed over years of experience, enabled the performer to have superior self-regulatory skills. Specifically, mentally tough performers consistently remained more determined, focused, confident, and in control under the pressures and demands that top level sport placed upon them. The process of asking each participant to rate the extent to which they agreed with the definition post-data collection resulted in a mean of 8.7 (*SD = 1.06*).

*Mental Toughness Attributes*

Participants identified 12 distinct attributes that were believed to be key attributes of the ideal mentally tough performer. The attributes, phrased in the participants’ own words, are presented in Table 1 in the order in which they were identified as the focus group and interviews proceeded. Table 1 also includes the sum of the rankings of each attribute’s importance across the participants and the resulting rank ordering.
The attributes are presented separately below and in the rank order of importance, with representative quotes (including self-referenced and observed examples) throughout to illustrate the specific meanings and bases upon which attributes were devised.

*Rank number 1: Having an unshakable self-belief in your ability to achieve your competition goals.* This emerged clearly as the most important attribute of the ideal mentally tough performer. The nature of this attribute is captured in one of the participant’s views that, “if you want to be the best in the world you have to be strong enough to believe you are capable of that.” The strength and intensity of self-belief regarding the achievement of competition goals required to be mentally tough was clear in the focus group and all of the individual interviews. One performer commented that:

Mental toughness is about your self-belief and not being shaken from your path... It is producing the goods and having the self-belief in your head to produce the goods.

*Rank number 2: Bouncing back from performance set-backs as a result of increased determination to succeed.* The participants felt that, “nobody’s rise to the top is completely smooth, there are always little hiccups or turns in the road.” Negative comments or poor performances result in increased determination because “you don’t want to be classed as a failure.” This attribute is largely competition-specific, and involved a combination of behavioral persistence, resilience, and enhanced motivation which allowed the mentally tough performer to see setbacks as a stage or process along the road to ultimate success. One performer commented, “yea, we all have them (setbacks), the mentally tough performer doesn’t let them affect him, he uses them.” Another one stated, “missing a two-footer is difficult to get over, but you have to come back, and stronger.”

*Rank number 3: Having an unshakable self-belief that you possess unique qualities and abilities that make you better than your opponents.* The intensity of self-belief again emerged as being a key attribute of the ideal mentally tough performer, this time regarding
the belief that they possess unique qualities and abilities that make them superior to their opponents. The participants felt that the ideal mentally tough performer believes that s/he is “better than everyone else by a long way” because “you have something that sets you apart from other performers.” This applies to competition and training: “when they train they train differently to others, they have their own personal way of doing things,” and they believe that they “are the best person for the job.” One participant made reference to a world champion gymnast and stated: He had such self-belief in his own ability to know that “this is definitely the way,” I guess it gets down to making the right decisions. He made the right decisions about how he was going to train, but he had the self-belief in his ability to know that he was making the right decisions.

_Rank number 4=: Having an insatiable desire and internalized motives to succeed._

The participants felt that the ideal mentally tough performer has a desire for success that is overpowering, and with the motivation coming from deep within: “the motives have to be for you . . . you have to really want it because it’s really hard work.” In this way, this attribute provides the performer with a frame of reference and meaning when “the going gets really tough,” so that it is important not only in competition but also in training and general lifestyle.

The desire is so strong that the mentally tough performer would do “almost anything (within the rules) to succeed, whatever the cost (e.g., win).” This attribute is best described in the quotes from one participant below:

You’ve really got to want it, but you’ve also got to want to do it for yourself. Once you start doing it for anyone else . . . you’re in trouble. You’ve also got to really understand why you’re in it . . . and constantly reminding yourself is vital.
**Table 1. Mental Toughness Attributes and Importance Rankings**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Sum of Rankings</th>
<th>Overall Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Having an unshakable self-belief in your ability to achieve your competition goals</td>
<td>26</td>
<td>1</td>
</tr>
<tr>
<td>2. Having an unshakable self-belief that you possess unique qualities and abilities that make you better than your opponents</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>3. Having an insatiable desire and internalized motives to succeed</td>
<td>56</td>
<td>4=</td>
</tr>
<tr>
<td>4. Bouncing back from performance set-backs as a result of increased determination to succeed</td>
<td>49</td>
<td>2</td>
</tr>
<tr>
<td>5. Thriving on the pressure of competition</td>
<td>76</td>
<td>9=</td>
</tr>
<tr>
<td>6. Accepting that competition anxiety is inevitable and knowing that you can cope with it</td>
<td>73</td>
<td>8</td>
</tr>
<tr>
<td>7. Not being adversely affected by others’ good and bad performances</td>
<td>76</td>
<td>9=</td>
</tr>
<tr>
<td>8. Remaining fully-focused in the face of personal life distractions</td>
<td>77</td>
<td>11</td>
</tr>
<tr>
<td>9. Switching a sport focus on and off as required</td>
<td>108</td>
<td>12</td>
</tr>
<tr>
<td>10. Remaining fully-focused on the task at hand in the face of competition-specific distractions</td>
<td>56</td>
<td>4=</td>
</tr>
<tr>
<td>11. Pushing back the boundaries of physical and emotional pain, while still maintaining technique and effort under distress (in training and competition)</td>
<td>67</td>
<td>7</td>
</tr>
<tr>
<td>12. Regaining psychological control following unexpected, uncontrollable events (competition-specific)</td>
<td>66</td>
<td>6</td>
</tr>
</tbody>
</table>
Rank number 4: Remaining fully focused on the task at hand in the face of competition-specific distractions. The participants believed that the ideal mentally tough performer was able to remain fully focused on what he/she had to do, despite other competition-related events happening around them. One participant stated that “when things are happening around you, whether they be positive or negative, you just keep your eye on the ball, on what you are doing.” Another participant stated that “if you want to be the best, you have got to be totally focused on what you are doing,” while another stated, “there are inevitable distractions and you just have to be able to focus on what you need to focus on.”

Rank number 6: Regaining psychological control following unexpected, uncontrollable events. The participants referred to competition situations in which many things can happen which are out of your control. One participant stated, “Even when you think things are against you, like abandoned matches, the weather . . . the mentally tough performer is able to compose himself and come back and still win.” Another one summed up this attribute in the following quote, “it’s definitely about not getting unsettled by things you didn’t expect or can’t control. You’ve got to be able to switch back into control mode”.

Rank number 7: Pushing back the boundaries of physical and emotional pain, while still maintaining technique and effort under distress in training and competition. The participants described this attribute as being able to push yourself through both physically and psychologically demanding aspects of training and competition, by “being determined to carry out what you know you have got to do.” One performer described this attribute as:

In my sport you have to deal with the physical pain from fatigue, dehydration, and tiredness . . . you are depleting your body of so many different things. It is a question of pushing yourself . . . it’s mind over matter, just trying to hold your technique and perform while under this distress and go beyond your limits.
Rank number 8: Accepting that competition anxiety is inevitable and knowing that you can cope with it. The participants believed that all performers experience some anxiety at competitions, especially those deemed to be essential for their sporting careers or, “when you believe you are expected to win.” However, the mentally tough performer can cope with this and, “get over it to succeed”; “anxiety is inevitable and you have to cope with it.” One participant commented, “I accept that I’m going to get nervous, particularly when the pressure’s on, but keeping the lid on it and being in control is crucial”.

Rank number 9: Not being adversely affected by others’ good and bad performances. This attribute emerged as being specific to competition. The participants felt that “others’ performances can be a huge influence . . . you just have to focus on you and your performance.” One participant’s description was:

There have been cases where people have set world records and people have gone out 5 or 6 minutes later, and improved the world record again. The mentally tough performer uses others ‘good performances as a spur rather than say “I can’t go that fast.” They say “well, he is no better than me, so I’m going to go out there and beat that.”

Another participant also highlighted that not being influenced by others’ bad performances is also important, “the same is true for opponents’ poor performances in wind, rain etc . . . you can’t let that provide you with the excuse for playing badly.”

Rank number 9: Thriving on the pressure of competition. Ideal mentally tough performers, according to the participants, are able to “raise their game when the occasion demands it, no matter what has happened.” The capacity to approach the pressure of competition by “taking it in your stride,” and actually “thriving on the pressure of competition” emerged as being important. One performer commented:
If you are going to achieve anything worthwhile, there is bound to be pressure. Mental toughness is being resilient to and using the competition pressure to get the best out of yourself.

*Rank number 11: Remaining fully-focused in the face of personal life distractions.*

Participants felt that the ideal mentally tough performer would “block out personal problems.” Whilst this was also applicable to training, the major focus of the participants’ comments was on competing. One participant reported that the ideal mentally tough performer would “turn it (personal problems) around in some way as some sort of motivation for himself.” All distractions would be blocked out in order to remain fully focused on the situation which led to increased motivation to stay focused. They were all clear that personal circumstances, whether good or bad, could not be allowed to distract them: “Once you’re in the competition, you cannot let you mind wander to other things”; and, “it doesn’t matter what has happened to you, you can’t bring the problem into the performance arena.”

*Rank number 12: Switching a sport focus on and off as required.* Although all of the attributes identified were viewed by the participants as being important and necessary to the ideal mentally tough performer, being able to switch their sport focus on and off to suit their needs emerged as the clear final one. The focus of participants’ comments was largely around competition:

You need to be able to switch it [i.e., focus] on and off, especially between games during a tournament. The mentally tough performer succeeds by having control of the on/off switch.

However, it was clear that switching a sport focus on and off as required is also important in their general lifestyle: “there are times when I just want to relax and just not think about my sport at all,” and “there are other important things in my life which deserve my attention . . . it’s important I discipline myself to give them the time.”
Discussion

The literature on mental toughness is characterized by a general lack of conceptual clarity and consensus as to its definition, as well as a general failure to operationalize the construct in a consistent manner. The study reported in this paper therefore addressed two fundamental issues surrounding mental toughness: how can it be defined? and what are the essential attributes required to be a mentally tough performer? Because mental toughness is the very essence of sport psychologists' work with elite athletes, it presents an important, and challenging, area of investigation. The discussion of the findings of the study is presented in the following subsections: mental toughness definition, mental toughness attributes, summary and future research.

_Mental Toughness Definition_

As reported earlier in this paper, the definition of mental toughness that emerged from this study was as follows:

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.

Inherent within the definition is the notion that athletes can possess a “natural” mental toughness that they bring with them to the sport environment. However, it is also possible to develop mental toughness so that sport psychologists can play an important role in this respect. A further important aspect of the definition is that the participants were keen to include an outcome dimension to mental toughness. The reference to “psychological edge,” “cope better than your opponents,” and “be more consistent and better than your opponents”
all involve a comparison with opponents which, given the almost negligible physical and technical skill level differences in the most elite athletes, will result consistently in successful outcomes. The implication of this is that the true test of mental toughness at this level is achieving success.

The distinction between general and specific dimensions of the definition is also interesting. 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. Indeed, the life of an elite athlete presents its own unique challenges in the form of balancing training and competition demands with, amongst others, social and personal life demands. Dealing with all of these demands and structuring your lifestyle around them so that you are able to perform optimally is an important aspect of being mentally tough. It is really about knowing what are your priorities are at any given time and not being distracted from them. And priorities are not always about training and competition. Mentally tough performers are able to switch off from sport-related demands when they need or desire to.

Almost inevitably, the definition includes a specific focus on competition and performing under pressure. Consistency in response is crucial, particularly in being able to remain determined, focused, confident, and in control. This aspect of the definition ties in closely with some previous definitions offered in the literature (e.g., Goldberg, 1998; Gould et al., 1997; Williams, 1988) that emphasize coping with the pressure of competition. It is also closely linked to the notion of having superior mental skills (Bull et al., 1996) because the consistency of response emphasized in the definition from the study reported here essentially requires the mentally tough athlete to have a high level of ability in controlling motivation, focus/attention, confidence, and stress (cf. Hardy, Jones, & Gould, 1996).

In summary, the definition of mental toughness that has emerged from this study reflects the general tendency in the literature to associate mental toughness specifically with
being able to cope with adversity in competitive situations. However, the definition also highlights another important dimension of mental toughness in the form of a more general ability to cope with unique demands that arise from the lifestyle associated with being an elite athlete.

**Mental Toughness Attributes**

The first point to emerge from the mental toughness attributes that were identified is that a number of them are already evident in the literature. However, previous literature on mental toughness has generally failed to distinguish between what mental toughness is and the attributes required to be mentally tough. This has resulted in a number of different definitions and approaches to mental toughness that have prevented any significant advances in the area. What the study reported here has attempted to achieve is to first establish what mental toughness is, and then to examine the key dimensions of mental toughness.

It is important to emphasize that all of the attributes identified by the participants are an important part of being mentally tough, but the results of the ranking procedure suggest that some attributes are clearly more important than others. Self-belief, and the magnitude ("unshakable") of it, emerged as being crucial and fundamental in the mental toughness process. This self-belief has two dimensions: belief in ability to achieve goals and believing that you are different to and therefore better than your opponents. Motivation in the form of desire and determination also emerged as being of particular importance to the mentally tough athlete. Using setbacks as a source of increased determination to "bounce back" and having an intense ("insatiable") desire as a function of purely internalized motives were ranked as being of high importance by the majority of the participants.

Not surprisingly, factors associated with the stress of competition were evident in the list of mental toughness attributes. Specifically, the participants felt that the mentally tough athlete thrives on the externally-derived pressure of competition and is able to cope with the
internally-derived anxiety response. Interestingly, a further belief dimension was evident concerning anxiety: the mentally tough athlete accepts that competition anxiety is inevitable, but “knows” or believes that he or she can cope with it. What is a little surprising from the findings is that these two attributes were ranked towards the bottom of the list (9 = and 8, respectively). Although dealing with competition pressure and anxiety is clearly an important aspect of competing at the elite level, there are other dimensions of the psychological response that are at least, if not more, important. The findings from this study suggest that self-belief and motivation, in particular, are worthy of closer scrutiny in elite athletes (cf. Hardy et al., 1996; Jones, 1995).

Being able to maintain focus emerged as an important aspect of mental toughness in the form of five attributes. Three were competition-specific and were about remaining focused despite potential distractions. The participants were keen to break the potential distractions down into others’ performances, inevitable distractions such as crowd noise, and unexpected events. Of less relative importance to the mentally tough athlete were the attributes of remaining focused in the face of both positive and negative personal life distractions, and being able to switch a sport focus on and off as required. All of these focus-related attributes require a self-discipline alongside finely-tuned focusing skills that the sport psychologist can play an important part in developing.

Finally, one attribute emerged that related to being able to maintain technique and effort while experiencing physical (e.g., fatigue) and emotional pain resulting from failure. The emotional pain aspect of this attribute is almost certainly generic across all sports. However, the physical pain dimension is likely to be sport-specific and associated, in this particular study, with sports such as swimming, triathlon, sprinting, and middle-distance running, rather than sports such as golf.
The authors propose that the attributes that emerged in this study can be placed into the following general categories: 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. As highlighted earlier in this discussion, these areas have been identified, sometimes using differing terminology, across the broad literature on mental toughness, but the literature has generally failed to provide distinct definitions and components parts of mental toughness which are based on the systematic, coherent, and detailed manner evident in this single article. Indeed, previous literature is characterized by definitions and characteristics of mental toughness that are too wide-ranging to be of significant help to scientists and practitioners alike. The present study has emphasized the need to first establish what mental toughness actually is, and then to establish the precise details of how athletes enact that mental toughness. Therefore, the definition of mental toughness that has emerged reflects what is essentially the desired end state of being mentally tough, while the attributes reflect the specific detail of how athletes achieve that state.

Summary and Future Research

The definition of mental toughness and the associated key attributes emerging from this study represent a starting point for the scientific investigation of mental toughness. The study does have its limitations, including the range and number of sports sampled, and the relatively small sample size. In addition, although the use of a focus group facilitated discussion and generated detailed information on the subject of mental toughness, it could be argued that only using one focus group with three individuals was a potential limitation. However, the authors believe that these possible limitations are outweighed by the richness of the data that have emerged. A start has been made in the quest to greater understand this thing called “mental toughness.”
A number of research avenues need to be followed as a result of the findings from the study reported here. First, the study sampled only athletes; future research should also include sport psychologists who have worked with elite athletes, and also coaches of elite athletes. Second, the athletes who participated in this study were internationals who had competed at major championships in their respective sports. Given the dimension of the mental toughness definition that related to successful outcomes, it would be interesting to compare the definitions and attributes emerging from the present sample with a sample of athletes who have achieved ultimate success, such as official *World Number One* ranking, in their sports. There may well be some subtle, but very important, differences between mental toughness in the world’s best athletes compared with those that are “merely” very good! Third, the mental toughness definition included reference to the fact that it can be developed; this begs the obvious question, how have mentally tough athletes developed their mental toughness? Finally, the findings from this study could form the basis for the measurement of mental toughness in a manner that has scientific rigor. Given the universal acceptance of the importance of mental toughness at the elite level, all of these questions, and others yet to be identified, deserve attention.
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CHAPTER 4

Study 2

A FRAMEWORK OF MENTAL TOUGHNESS IN THE
WORLD’S BEST PERFORMERS
Abstract

The authors conducted an investigation of mental toughness in a sample population of athletes who have achieved ultimate sporting success. Eight Olympic or World Champions, 3 coaches, and 4 sport psychologists agreed to participate. Qualitative methods addressed 3 fundamental issues: the definition of mental toughness, the identification of its essential attributes, and the development of a framework of mental toughness. Results verified the authors' earlier definition of mental toughness and identified 30 attributes that were essential to being mentally tough. These attributes clustered under 4 separate dimensions (attitude/mindset, training, competition, post-competition) within an overall framework of mental toughness. Practical implications and future avenues of research involving the development of mental toughness and measurement issues are discussed.
Introduction

Top level sport is characterized by a demand to excel at optimum levels while performing under conditions that are considered to be extremely demanding. Psychological attributes such as self-confidence, and the ability to cope with and interpret anxiety-related symptoms as positive are now commonly accepted as being major contributors to sporting success (cf. Hardy, Jones, & Gould, 1996; Mellalieu, Hanton, & Fletcher, 2006). However, researchers attempting to account for sporting performance via anxiety and self-confidence theory explanations (e.g., Bandura, 1977; Martens, Vealey, Burton, Bump, & Smith, 1990; Vealey, 1986) have revealed unexpectedly low amounts of performance variance (see Swain & Jones, 1996). Perhaps these theoretical explanations might not be as influential as investigators initially thought. A more holistic approach into positive psychological attributes may help researchers find more pivotal variables in explaining successful performance. One factor that may be core to the understanding and advancement of knowledge within this area is that of mental toughness.

Mental toughness has been described as one of the most used but least understood terms in applied sport psychology (Jones et al., 2002). Numerous articles investigating successful sporting performers have cited mental toughness as a vital component. Definitions and characteristics of mental toughness have been proposed by many authors leading to a diverse range of positive psychological characteristics being associated with mental toughness. Unfortunately, the majority of explanations have emanated from anecdotal evidence and personal accounts. This was highlighted by Jones et al., who concluded that the knowledge base regarding mental toughness lacked scientific rigor and was replete with contradiction, ambiguity, and conceptual confusion.

Jones et al. (2002) addressed some of the conceptual weaknesses by investigating mental toughness in elite performers. These authors sought to define mental toughness and
identify the attributes required to be a mentally tough performer using personal construct theory as a guiding framework (cf. Kelly, 1955). The resulting definition emphasized a natural or developed construct that enabled the mentally tough performer to generally cope better than his or her opponents with the demands of training and competing. Specifically, these athletes were more consistent and superior at remaining determined, focused, confident, and in control under pressure. Jones et al. further identified 12 attributes that were considered crucial and fundamental to the make-up of mental toughness. These related to self-belief, desire and motivation, performance focus and lifestyle-related factors, dealing with pressure, anxiety, and pain/hardship that is associated with top level performance. Further, the attributes highlighted how specific characteristics contributed to a performer’s state of mental toughness. It is interesting that two recent studies have adopted procedures and recommendations proposed by Jones at al. in the sports of cricket (Bull, Shambrook, James, & Brooks, 2005) and soccer (Thelwell, Weston, & Greenless, 2005). Both studies confirmed Jones at al.’s definition of mental toughness and proposed attributes that were comparable, even though specific to the sports involved. Overall, this suggests that although mental toughness might possess slight variants in specific sports a general template or framework can be developed irrespective of sport.

Although these researchers have contributed to the overall understanding of mental toughness, the area is still at a very exploratory stage of investigation. Recommendations were proposed to expand the mental-toughness knowledge base. First, given that the definition of mental toughness contains a dimension that relates to successful outcomes, mental toughness should be investigated in a sample of athletes who have achieved ultimate success in their respective sports (i.e., Olympic or World Champion; Jones et al., 2002). Second, sport psychologists and coaches who have worked with such World-best performers
can contribute to a clearer overall understanding of mental toughness (Jones et al.; Thelwell et al., 2005).

The purpose of this study was to address the recommendations highlighted by Jones et al. (2002). Because there is no validated measure of mental toughness, we employed qualitative methods to define mental toughness and develop a framework of mental toughness by identifying the key underpinning attributes in a broad range of sports. The sample consisted of performers who were considered superelite (i.e., officially recognized as the best in the World). Coaches and sport psychologists who worked with these high-achieving performers were also included to create a more complete understanding of mental toughness.

Method

Participants

Consistent with qualitative methodologies (e.g., Lincoln & Guba, 1985; Patton, 2002) and following procedures adopted by Jones et al. (2002), we used purposive sampling to select study participants. The samples were selected by canvassing various sport-governing bodies and individuals throughout the sporting world. Eight performers, 3 coaches, and 4 sport psychologists were chosen in order to gain a diverse representation. In particular, emphasis was placed on selecting participants from sports with varying task demands (i.e., team/individual, open/closed skilled, self-/externally paced, subjective/objective, contact/noncontact) who, once contacted, volunteered their consent. Following recommendations for data-rich individuals (Bull et al., 2005; Jones et al.; Thelwell et al., 2005), we required that performers had won at least one gold medal at an Olympic Games or World Championship and that coaches and sport psychologists had coached or consulted with Olympic or World Champions on a long-term basis. Participants who met this criterion were classified by the authors as super elite and are referred to as such throughout this article.
The superelite performers, 5 men and 3 women, were between the ages of 25 and 48 years, claimed 7 Olympic gold medals and 11 World-Championship titles, and had an average of 6 years of experience at the superelite level. Four of the performers were retired from competing; the other 4 were still competing at the time of the interviews. The coaches (3 men, age 38–60 years) and the sport psychologists (4 men, age 35–45 years) were all working with superelite performers at the time of the interviews. The sports represented were boxing, swimming, athletics, judo, triathlon, rowing, pentathlon, squash, cricket, and rugby union. In addition, participants represented a number of nations and cultures including Australia, England, Canada, and Wales.

Procedure
Following the procedures adopted by Jones et al. (2002), this study was divided into three distinct but iterative stages. In Stage 1 we used a focus group, and in Stage 2 we conducted individual interviews. Stage 3 was composed of two parts: In Part 1 individuals rated the definition, and in Part 2 participants confirmed the proposed framework and ranked the mental-toughness attributes in each dimension. To help establish the parameters of the study, an interview guide was sent to all participants before interviewing with instructions concerning the rationale for the study, the use of data, issues regarding confidentiality and the participants’ rights, and the reasons for audiotaping.

Stage 1

The focus group involved three sports performers engaging with one another and verbally formulating their ideas regarding mental toughness (Kitzinger, 1994). Participants were asked to define mental toughness in their own words, and following this, to provide a list of the fundamental prerequisite qualities and attributes that the ideal mentally tough performer possessed until saturation was deemed to have occurred (cf. Glaser & Strauss, 1967). Each attribute was then examined and probed in detail with sporting examples.
provided before proceeding to the next attribute (cf. Patton, 2002). The purpose of the focus group was to generate data rich information and provide a base that could be expanded upon in the individual interviews (Amis, 2005).

Stage 2

Individual interviews, either face-to-face or via the telephone (see Gould, Finch, & Jackson, 1993), were conducted with the remainder of the sample using the information generated from the focus group in Stage 1. In line with personal-construct theory (Kelly, 1955), we examined in detail the interviewees' sentiments, regarding all previous definitions and attributes generated by the focus group and individual interviews, and discussed sporting examples. After this, each participant was probed for possible additional attributes that had not been identified. By repeating this process for every individual, a complete profile of the ideal mentally tough performer was developed.

During the final section of the interview we asked for the participants' appraisal of the session and asked if any issues might have been overlooked. After each interview, the transcript was sent to the participant and then solicited comments regarding its accuracy via a follow-up phone call. Each participant confirmed that the information accurately reflected his or her experiences of and thoughts about mental toughness. The focus group lasted three and a half hours and was audiotaped in its entirety and transcribed verbatim, yielding over 100 pages of text. Subsequent interviews lasted between 75 and 95 minutes and were again audiotaped and transcribed verbatim, resulting in over 700 typed pages. After each interview the transcripts were discussed by the research team before proceeding to the next participant. All three researchers agreed that saturation had been reached after the interview with the 15th participant. On close inspection of the definition generated by the participants, the research team discussed and concluded that there was no discernable difference from Jones et al.'s
(2002) definition. Consequently, the definition proposed by Jones et al. was presented to participants for verification, comment, and rating.

**Stage 3**

Stage 3 involved two parts and was conducted via a follow-up interview. Part 1 asked the participants to rate the extent to which they agreed with Jones et al.’s (2002) definition on a scale from 1 (not at all) to 10 (totally agree). All participants responded and rated the definition. Part 2 involved presenting the mental-toughness attributes in each dimension of the framework to the participants, who were asked to: (a) confirm whether the proposed framework of mental toughness was a true reflection of their understanding of mental toughness, (b) confirm whether each attribute fitted in the proposed dimension, and (c) rank the attributes in each dimension in terms of their importance to mental toughness (1 = most important). All participants confirmed that the proposed framework of mental toughness was a true reflection of their understanding of mental toughness and that the attributes fit correctly in the dimensions. At this point, 1 participant requested not to take part in the ranking of attributes.

**Analysis**

The data-analysis procedures adopted in this study incorporated six steps: (a) transcripts were independently studied in detail by the researchers to ensure content familiarity, and regular meetings were held to ensure a complete understanding of the textual material; (b) the researchers independently reviewed the 30 proposed attributes and deductively categorized them into four dimensions. Through discussion and consensus, the research team collectively labeled the four dimensions; (c) any disagreement of attribute classification resulted in all three researchers rereading the transcripts until consensus was reached; (d) two external researchers, knowledgeable in qualitative-research analysis and familiar with the subject matter, confirmed that the attributes were classified under the most
appropriate dimensions and subcomponents; (e) participant feedback verified the construction of the framework. It was agreed, in line with Sparkes (1998) and following Jones et al. (2002), that the data should be displayed in a way that was easy to interpret and meaningful to the reader. Therefore, the attributes in the framework were presented in a straightforward manner from the transcripts using direct textual quotations. Finally, (f) trustworthiness characteristics, as recommended by Hardy et al. (1996) and Sparkes, were met throughout via thick description, recording and transcribing all interviews, peer debriefing, and member checking.

Results

The results section presents the definition and subsequent framework of mental toughness. The framework contains the 30 attributes which are reported and ranked within each of the four dimensions (i.e., attitude/mindset, training, competition, post-competition).

*Mental Toughness Definition and Framework*

The participants revealed that the definition of mental toughness proposed by Jones et al. (2002) and verified in Stage 1 of the procedure, was accurately worded and closest to their personal understanding of mental toughness. The process of asking each participant to rate the extent to which they agreed with the definition post-data collection resulted in a mean of 9.33 ($SD=1.05$; 10 participants rated it 10 out of 10). Therefore, in accordance with Jones et al. (2002), mental toughness was defined as follows: 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 and, specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure.
Probing participants' responses also indicated that, not only was mental toughness developed throughout their careers, it could also fluctuate during the time athletes spend in their respective sports.

Participants identified 30 distinct attributes that were believed to be the key in developing a framework of mental toughness. The attributes were phrased in the participants' own words, and were discovered, through triangulation, to cluster into four separate dimensions. Attributes within the dimensions were further categorized into subcomponents, which can be seen in Figure 1.

The attitude/mindset dimension is best described as containing attributes that characterize a general attitude that the ideal mentally tough performer possesses, whereas the three other dimensions (training, competition, post-competition) related to characteristics of mental toughness at specified time phases. The attributes were ranked in terms of importance to mental toughness in each dimension. Representative quotes, including self-referenced and observed examples, are presented throughout to illustrate the specific meanings of the attributes.

*Attitude/Mindset*

Table 1 presents seven attributes that were classified under the mental toughness dimension *attitude/mindset*. A finer examination of these seven qualities revealed a further division resulting in two subcomponents - belief and focus.

*Belief.* Belief is composed of four attributes that contribute to the ideal mentally tough performer's belief, which is required to ensure that the performer remains on course, regardless of obstacles or circumstances, in achieving his or her ultimate goal. The attributes in this subcomponent relate to factors that contribute to performers' unshakable belief through their awareness and inner arrogance and how this belief results in performers'
reaching their true potential, despite obstacles and barriers that people or organizations put in their path. Examples and explanations will now be provided.

The first attribute describes how a mentally tough performer acquires the unshakable self-belief that results from a total awareness of how the performer got to that level (Rank 1). One participant explained that “it takes a long time for a real belief in yourself to build.” The more they demonstrate their abilities to overcome specific challenges and reach certain targets, the more it raises their self-belief and confidence. A common statement was “I know I can achieve it [aims and goals]. . . This belief is built on a very solid foundation, it’s not about hoping and wishing, it’s about knowing as a result of what I have done.”

The second attribute relates to an inner arrogance that contributes to the belief that success is achievable, and they can achieve anything they set their mind to (Rank 2). Participants felt that this inner arrogance “makes them stand out. . . They are able to look at their talents and abilities and know that they can do it to the very highest level.” Participants described it as knowing that they can take on and beat the best in the world:

It’s that inner arrogance, that bit of an attitude towards things that I set my mind to. It is never ever giving up and knowing that if I just persevere I know that I am going to be able to do it... I believe I will be able to do it.

The third attribute explained how belief allows mentally tough performers to achieve success by punching through any obstacle people put in their way (Rank 3). It does not matter what it is; the mentally tough performer invariably overcomes such problems.

Mentally tough performers can overcome any obstacle or barrier that is put in their way... it allows them to bash through any obstacle that stands in their way... It's not necessarily just punching through it, it's knowing how you are going to punch through it and then learning from that......you gain something from that as well.
Figure 1 – Mental Toughness Framework
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Subcomponent</th>
<th>Attribute Rank and Description</th>
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| 1. Attitude/Mindset   | Belief                                            | 1. Having an unshakable self-belief as a result of total awareness of how you got to where you are now  
2. Having an inner arrogance which makes you believe that you can achieve anything you set your mind to  
3. Having the belief that you can punch through any obstacle people put in your way  
4. Believing that your desire or hunger will ultimately result in you fulfilling your potential  
|                       | Focus                                             | 5. Refusing to be swayed by short-term gains (financial, performance) that will jeopardize the achievement of long-term goals  
6. Ensuring that achievement of your sport’s goal is the number one priority in your life  
7. Recognizing the importance of knowing when to switch on and off from your sport  |
| 2. Training           | Using long-term goals as the source of motivation | 1. When training gets tough (physically & mentally) because things are not going your way, keeping yourself going by reminding yourself of your goals and aspirations and why you’re putting yourself through it  
2. Having the patience, discipline, and self-control with the required training for each specific developmental stage to allow you to reach your full potential  
|                       | Controlling the environment                       | 3. Remaining in control and not controlled  
4. Using all aspects of a very difficult training environment to your advantage  |
|                       | Pushing yourself to the limit                     | 4. Loving the bits of training that hurt  
6. Thriving on opportunities to beat other people in training |
### 3. Competition: Handling pressure

1. Loving the pressure of competition
2. Total commitment to your performance goal until every possible opportunity of success has passed
3. Adapting to and coping with any change/distraction/threat under pressure
4. Not being fazed by making mistakes and then coming back from them
5. Making the correct decisions and choosing the right options that secure optimal performance under conditions of extreme pressure and ambiguity
6. Having a killer instinct to capitalize on the moment when you know you can win
7. Raising your performance “up a gear” when it matters most
8. Coping with and channeling anxiety in pressure situations.
9. Totally focusing on the job in hand in the face of distraction
10. Being acutely aware of any inappropriate thoughts and feelings, and changing them to help perform optimally
11. Remaining committed to a self-absorbed focus despite external distractions
12. In certain performances, remaining focused on processes and not solely outcomes

### 4. Post-competition: Handling failure

1. Recognizing and rationalizing failure, and picking out the learning points to take forward
2. Using failure to drive you to further success
3. Knowing when to celebrate success and then stop and focus on the next challenge
4. Knowing how to rationally handle success

### 5. Post-competition: Handling success

1. Knowing how to rationally handle success
2. Using failure to drive you to further success
3. Knowing when to celebrate success and then stop and focus on the next challenge
4. Knowing how to rationally handle success

**Note.** The numbers = rank order for attributes in each dimension.
The fourth attribute describes how belief in their desire or hunger ultimately results in mentally tough performers’ fulfilling their potential (Rank 4). The participants viewed this attribute as having the belief that “you can actually be that good, that you can actually achieve that goal”, and this belief enabled them to “truly know what they can realistically achieve”.

**Focus.** This subcategory contains three attributes that contribute to the ideal mentally tough performer’s focus in the attitude/mindset dimension. Participants explained how this focus was used to attain their ultimate goal by prioritizing the long-term goal over any short-term gains, in addition to considering every component of their lifestyle in the achievement of this goal (i.e., Olympic gold).

The first attribute in this subcategory involves prioritizing the achievement of long-term goals (Rank 5). Participants felt that the ultimate goal of a mentally tough performer, and how to achieve it, was always foremost in their thoughts and plans. As one participant explained, long-term-goal achievement was structured and planned, “it didn’t just happen due to luck or ability, every detail and step in how to achieve this goal is planned and monitored,” and this meant that sometimes short-term gains (financial or performance) had to be sacrificed. One coach stated,

The mentally tough performer will not be swayed by short-term goals, such as money or minor successes, in their desire to achieve their ultimate goal.

You can think of many athletes who turn down vast amounts of money that are offered by promoters or sponsors to run in marathons... or compete or play in competitions ... or go on tours, so that they can focus on their long-term goal ... you know... the Olympics or Worlds.

Achieving one’s sporting goal was described as “the number one priority in your life” (Rank 6). The second attribute in this subcategory explains that a mentally tough performer is
"prepared to prioritize their sport and to forego other things that would have a detrimental
effect on goal achievement." Participants felt that to excel at the highest level "you have to
rate your sport as the most important thing in your life," and they prioritized this within the
framework of their lives. Ideal mentally tough performers create an environment around them
to facilitate this by keeping out factors that are detrimental to sporting success. One
performer commented that "if there were decisions to be made, I would consider what the
repercussions would be on my sport before accepting or rejecting it."
The final attribute in this subcategory highlights the importance of knowing when to
switch on and off from your sport (Rank 7). Participants stated that "life must have a balance
in order to function optimally". They were able to appreciate when "life was out of balance"
for them and as a result, switch their sport focus on or off as required so optimal functioning
would occur. All participants spoke about their interpretation of achieving "the correct
balance in life" between sport, family and friends, and social life. They all felt that "the
mentally tough performer knows what that balance entails and how that balance contributes
to their success".

Training
The training dimension contains six attributes that comprise three subcomponents
(using long-term goals as the source of motivation, controlling the environment, and pushing
oneself to the limit). Two attributes clustered under each subcomponent that highlights the
important qualities required to be a mentally tough performer in a training environment.

Using long-term goals as the source of motivation. The attributes in this
subcomponent relate to how mentally tough performers keep motivation levels high despite
the prospect of years of hard work ahead and things being difficult or not going as planned.
The first attribute deals with when training gets tough (Rank 1) and unplanned situations
occur during a sporting career. "Life gets difficult, training gets difficult, but the mentally
tough athletes know exactly why they are doing it . . . They know what their goals and aspirations are and why they are putting themselves through the hard work.” Participants believed that this is what keeps mentally tough performers going. When performers feel low, tired, or that training was too hard, mentally tough performers remind themselves, “I am doing this because I want to win gold . . . Mentally tough performers acknowledge that they are tired but realize and remind themselves that if they are to achieve their goal they have to get back in the gym and work.”

The second attribute describes the patience, discipline, and self-control required for an athlete to reach his or her full potential (Rank 2). “Mentally tough performers know what is and is not achievable within a given time frame. They do not dream about the impossible or set unrealistic targets that cannot be achieved in the time available to them.” Participants reported that mentally tough performers know exactly how much and where they can improve their performance to win. They are realistic about how much they can make up the improvement in a specified time period and how this leads to the next stage in their performance or goal achievement. “They have the patience and discipline to control their efforts to achieve each goal or step along the ladder. They don’t spend their time wishing for the impossible or the unrealistic.”

Controlling the environment. The two attributes in this subcomponent relate to how a mentally tough performer gains as much control over training preparation as possible. Explanations of these attributes include decisions about their approaches to training and the training environment. The ideal mentally tough performer must be in control and not controlled—retaining as much control as the performer believes is necessary (Rank 3). Mentally tough performers “must exert control in pressure situations . . . They are in control of their destiny, they can grab the situation and shape it according to what they want to happen as opposed to being externally controlled.” There was a strong sense of independence
in training – not relying on the coach or other people to do what participants described as "their work.” They felt that even though the coach motivated and helped them, they were the ones in charge, producing the quality, and “at the end of the day, those last few steps are taken alone”. One performer described it as “well this gig is all about me… I want to make sure that it's exactly the way I want it to be… you are working with them but you are the one doing it and driving it, not him (the coach”).

The second attribute in this subcategory focuses on using every aspect of the training environment to one’s advantage, even if it is a very difficult environment (Rank 4). Mentally tough performers are not swayed by extraneous factors in training that they cannot control. They view these factors as challenges to overcome and use these challenges to enhance their performance.

At training camps you don’t always get things your way… You've got to be able to train with other people in the training environment there. It may not be ideal for you but you’ve got to deal with that and use it to your advantage. The mentally tough performer can handle any environment he is put in and use it to his advantage.

**Pushing yourself to the limit.** The attributes in this subcomponent explain how mentally tough performers push and challenge themselves to reach their physical boundaries. This is achieved by “taking pleasure in and welcoming the parts of a training regime that most other performers avoided or disliked.” The nature of the first attribute here is best described as loving the bits of training that hurt (Rank 4). Mentally tough performers accept, embrace, and even welcome the elements of the training regimen that are considered painful. According to participants, most performers disliked this part of training, and although some performers coped or even tolerated the pain, mentally tough performers derived pleasure from being able to give absolutely everything.
To know that you've done as much as you can... yeah, it’s the part that I love about being an athlete, pushing yourself as hard as you possibly can and challenging yourself mentally through that. I would like the fact that it would hurt and I wouldn’t want to dream of stopping... to sort of stretch my back or something like that... for me there is something in that... that it hurts... that was a really good example of why I was better than all the rest of them.

The final attribute in this subcategory involves beating other people in training (Rank 6). Participants believed that mentally tough performers, at every opportunity, practice being better than everyone else. “They are supremely competitive with themselves, as well as with others. They love to compete and would try to establish a competitive environment in training.” This maximizes opportunities to learn and enhance the need to win.

Their identity is caught up with... ‘I am very good, I am going to prove it, I am going to take you out of this and beat you’... They thrive on opportunities of beating other people, and are not afraid put themselves on the line.

**Competition**

The 13 attributes that clustered under the competition dimension were considered essential to mental toughness in a competitive situation and are ranked in order of importance in Table 1. These attributes could be further divided into six subcomponents: belief, staying focused, regulating performance, handling pressure, awareness and control of thoughts and feelings, and finally, controlling the environment.

**Handling pressure.** Handling pressure contains four attributes purported to explain how ideal mentally tough performers’ attitudes toward competition pressure affect how they deal with this pressure and what results from handling it in this unique manner. The first attribute describes how mentally tough performers love the pressure of competition (Rank 1). According to participants, many performers train hard for a competition such as the
Olympics, and when they actually get to the Games, “they do not really want to be there . . .
y they want to get it over with . . . there is only the pressure of performing and no enjoyment
until it is over; mentally tough performers enjoy every minute of this pressure.”

The mentally tough performer is eager to be there and enjoys everything about
the competition... the build up... the prelims, the waiting, the final, the
race... he looks forward to all these, this is the only place he wants to be... ‘this
is what I’m here for’... this is what separates the athletes.

The next attribute was described as an adapting and coping characteristic that
results in optimal performance regardless of distractions or changes (Rank 3).
Participants indicated that if athletes can only perform under perfect conditions and not
under difficult circumstances, then “you are not going to get to the top.” The ideal
mentally tough performer was perceived as being able to adapt to or cope with any
unplanned adverse situation and perform optimally no matter “what was thrown at
him.” One participant described this attribute well:

When suddenly thrown or faced with an unpredictable situation, something that
was not planned for, the mentally tough performer actually turns it around.

Competition is an ever-changing physical state, which you have to adapt to
mentally, and the mentally tough performer can adapt whatever. You can just
flow with it even though you are dead serious about what you are doing.

The next attribute in this subcategory involves making the correct decisions
when circumstances are ambiguous and pressurized (Rank 5). Participants believed
that mentally tough performers are able to make the right decisions and choose the
right options under conditions of extreme pressure, even when the situation contains
ambiguity. Participants felt that when decisions had to be made, the mentally tough
performer “identifies what needs to be done and does it. . . This could be acting out a
strategy or waiting to stage-manage or influence the arrival of the right moment while performing under pressure.” This strategy then results in a successful outcome.

Sometimes it is about curbing your initial instincts in a pressure situation, because the instinct says ‘go for it now’, whereas actually, the best option might be to wait five minutes before you go for it. Mentally tough performers are able to make the right decisions…and know when that is...they will make the right decision when it is required.

The final attribute in this subcategory described the ability to channel anxiety in pressure situations (Rank 8). Mentally tough athletes are perceived as being able to cope with high-pressure situations and to channel anxiety in order to enhance performance. A typical comment was “why would you not be nervous for something that you have prepared six years for?” Participants felt that competitions such as the Olympics created unique pressure situations, and mentally tough performers are able to cope with the pressure and expectation of winning. They can use, and indeed, channel the anxiety effectively so that the symptoms enhance their performance.

When you go into a competition such as the Olympics, there is a huge amount of pressure and anxiety, so coping with the anxiety is a question of controlling your anxiety and channeling it in the right way. It's being able to cope with such a pressure situation and the expectations…parents, lovers, press, team mates, coach, all of it. The mentally tough performer can do that, can handle it all and even use it.

Belief. The attributes within this subcomponent relate to the mentally tough performer’s belief that goal achievement will occur. They highlight the performer’s commitment with regard to that belief and how errors do not diminish that belief. The first attribute in this subcategory describes the performer’s total commitment to goal achievement
while there is a chance of success (Rank 2). A mentally tough performer remains committed to the belief of goal achievement until every possibility of success had passed.

It’s giving 100% even if you are say 8 - 1 down in the fifth... some players may say ‘that’s it, there’s no way I can win now’... where mentally tough performers always have the belief and are committed to it ... you will always try until the very last point has been won ... It isn’t over until it is over.

The second attribute refers to a mentally tough performer not being fazed by making mistakes (Rank 4). “Performers cannot compete to win the Olympics, with half-hearted efforts”. When mistakes do take place, mentally tough performers regain composure quickly and “hold it all together under pressure” so that the optimal performance occurs.

Mistakes would get some people down because they start worrying and thinking about failure. The ideal mentally tough performer can put a mistake to one side and carry on performing regardless. They have a resilience, a toughness, they are not fazed by mistakes. They stay mentally strong when things do go wrong, they are able to bounce back from mistakes or errors... and then produce it again.

*Regulating performance.* The two attributes here involve performance regulation such as recognizing and seizing the opportunity to win and increasing effort when it is required. The first attribute in this subcomponent requires performers to have a “killer instinct” in competition, which enables mentally tough performers to realize that the opportunity to snatch victory is presenting itself (Rank 6). They immediately capitalize on that opportunity with a “cold blooded killer instinct” in order to win. These performers do not hold back when they know that victory is within their grasp “they go straight for it, it enables you to go for the jugular and not feel guilty or bad about it”.

A lot of performers come away from a competition or game and say ‘well we had an opportunity there but by the time we realized it, it was gone’... the mentally tough performer has the presence of mind to realize ‘this is the moment, do it now, take it’.

The second attribute within this subcomponent highlights how mentally tough performers can raise their performance level when required (Rank 7). Participants felt that mentally tough performers are able to react to and increase effort, or perform better if it is required to win. They could find that “little bit extra which had not been apparent until then... when it was needed most... they can step up a gear”.

If somebody in a heat breaks the world record, you know you are going to have to do the same. In a final you might have to break the world record to win, you have to be prepared to break the world record to win, and the mentally tough performer can and importantly, knows how to do that.

*Staying focused.* This subcomponent contained three attributes that relate to mentally tough performers’ staying focused in a competitive setting and how they focus on long-term goal achievement. The first attribute in this subcategory describes how mentally tough performers remained completely focused on the job at hand, despite any distraction (Rank 9). Their focus is on why they are there and what they must do in order to achieve their goal, despite distractions attempting to divert their attention.

He is able to stay focused on what he has to do, regardless of the hype, pressure... what people are saying... It’s about recognizing where you are...

Olympics, Worlds, ‘I am here to do a job and not get carried away with the hype’... You have a job to do regardless of what may or may not be happening on the day in question... it is all that matters.
The second attribute in this subcategory relates to how mentally tough performers remains committed to their self-absorbed focus, regardless of external distractions (Rank 11). Participants believed that at major competitions “everything around the performers is drawing you away . . . to an external focus.” Mentally tough performers were described as being able to create a state of mind in which they are able to think about other people, the opposition, and other events yet are able to stay committed to their internal focus.

They are in a cocoon almost, absorbed in themselves, committed to what they’re doing, what they need to do, how they’re going to react. Regardless of what happens, mentally tough performers remain committed to what they should be focused on, despite the efforts of other people and circumstances that try to draw them out of it.

The final attribute in this subcategory describes how during certain competitions or games a mentally tough performer can remain focused on processes and not solely on outcomes (Rank 12). In certain competitions performers need to focus on the processes, such as the start or certain aspects of technique, rather than just the outcome. Participants indicated that these processes have to be mastered in order to achieve the eventual outcome (e.g., Olympic gold) and that “winning may not be the most important thing in every competition . . . and the mentally tough performer knows how to achieve this eventual outcome.”

The mentally tough performer has an understanding of what aspects of his performance he must focus on in particular competitions so that you are fully prepared in every aspect for the Olympics.... He does not see it as winning or losing....it is achieving the goal that they set for themselves... Winning can be considered a bonus here.
Awareness and control of thoughts and feelings. This subcomponent contains one attribute that explains how awareness and control of thoughts and feelings help mentally tough performers achieve the correct preperformance state. The attribute describes how being acutely aware of inappropriate thoughts and feelings helps them perform optimally (Rank 10). The participants believed that being sensitive to any thoughts and feelings that were experienced in competition contributed to the recognition of inappropriate ones (e.g., negative thoughts). Mentally tough performers change the inappropriate thoughts and feelings into ones that help them win.

They have this recognition mechanism that kicks in but the key difference between them and other athletes is that the mentally tough ones are able to change that thought or feeling so that they can perform at their best.

Controlling the environment. The final subcomponent in the competition dimension contains one attribute, which is closely linked to the training-dimension attribute, namely, using all aspects of a very difficult training environment to one’s advantage. This attribute explains how using the competitive environment to one’s advantage is a factor in being mentally tough (Rank 12). They must recognize that aspects of the competitive environment are not always ideal (e.g., weather, food, accommodation) and that specific situations will, on occasion, be out of the performer’s control. Mentally tough performers view this as a different environment and will “get on with the job.” They do not allow the conditions or other performers to have a negative effect on them.

You need to be able to handle any situation that’s thrown at you. At the Olympics you cannot isolate yourself... it involves team-mates, coaches, doctors, management. You may not get on with all of them but you’ve got to hold it together, you have to be consistent. You may have to compete in conditions that you didn’t wish for... you have to be able to cope with that...
mentally tough performers are able to handle all the environments, all the personal and impersonal relationships, and use them to his advantage.

Post-competition

Post-competition contained four attributes that depict how mentally tough performers reflect on and dealt with competition failures and successes. This dimension was further categorized into two subcomponents: handling failure and handling success.

Handling failure. The two attributes in this subcomponent relate to how mentally tough performers rationalize and use failure to learn how to reach their ultimate goals. The first attribute explains how recognizing and rationalizing failure leads them to investigate "why they failed and the reasons that caused the unsuccessful outcome" (Rank 1). Participants believed that all performers experience failure at some stage, but a mentally tough performer learns from what happened and picks out the learning points to take forward for future performances. These failures add to their knowledge and understanding of themselves and what they need to do in order to be successful in the future.

He is able to analyze his performance and learn to adapt to whatever caused the errors so that he can reach his ultimate goal. The mentally tough performer is able to move on from that failure and it's not an issue or a mental block for him. He uses this knowledge for future performances.

The second attribute describes how mentally tough performers use failure to drive themselves to further success (Rank 2). The effect of having experienced a disappointment (e.g., losing an event) motivates mentally tough athletes to raise the level of their performance for the next race or game. The experience of failing was seen as making a mentally tough performer a stronger person, more determined to prove that failure would not occur again. Participants believed that mentally tough
competitors who do not win the first time are driven to try harder and harder until they achieve what they want (i.e., the gold medal).

Failure or not achieving the expected is used as a stimulus to do better next time... it's like a heightened motivation, a springboard to the next step... failure added something to my mental body armor, in that it made me a stronger athlete and it made me more protected from failure in the future, and so I was more successful because I was harder.

Handling success. The two attributes in this subcomponent relate to how mentally tough performers deal with success and the extra pressures that come with it. The first attribute relates to an understanding or knowledge of when to celebrate success and when to focus on the next challenge (Rank 3). Mentally tough performers know or understand what to take away from success, how long they can live in the glory of that success, and when it is time to move on and get back to focusing on the next challenge (i.e., an important game or race).

The mentally tough performer has an acute awareness of his own ability, his levels of fitness, his strength, limitations, and what needs to be done in order to achieve the level of performance required to win... he also knows when to stop celebrating and how long it will take to reach that top level performance again.

The second attribute explains how mentally tough performers know how to rationally handle success (Rank 4). According to participants, mentally tough athletes know how to handle the pressure of succeeding and the extra pressure that success adds to future performances, such as the next big game or competition. Participants indicated that a mentally tough performer was able to deal with the fame, rewards, and additional pressure that success brought "in a rational and level-headed manner" in order to repeat that success in the next Olympics or the next big game.
If you win an Olympic Gold the pressure to repeat that increases...

expectations are higher because people, competitors and even you have put
yourself at a higher level... the mentally tough know how to handle that and
still keep their feet on the ground.

Discussion

The purpose of this study was to address the recommendations highlighted by Jones et al. (2002) from a sample of participants who are recognized as being the best in the world at one time or another. This entailed defining and developing a framework of mental toughness using the identified underpinning attributes.

Mental Toughness Definition

Participants verified that Jones et al.’s (2002) definition of mental toughness was an accurate description of their personal understanding of the construct. Although it was not the main purpose of this study to directly compare Jones et al.’s elite sample with the superelite participants, it is interesting to note that the superelite group agreed with the definition more than the elite group, with mean ratings of 9.33 (SD = 1.05) and 8.7 (SD = 1.06) out of a possible 10, respectively. According to the superelite participants’ interpretation, mental toughness has general and specific elements. The first element permits the mentally tough performer to better cope with the general demands and associated pressures that occur at the highest level of sport than non-mentally tough performers do. In essence, this element relates to the successful coping and balancing of one’s social and personal life with the very specific and unique demands of a modern-day sporting career. The second element highlights a specific outcome dimension (i.e., success, winning) that describes how mentally tough individuals produce more consistent high-level performances via the use of superior psychological strategies and mental skills. Not unusually, therefore, there are some parallels with previous mental-toughness definitions. This is a result of previous research that has
linked the notion of enhanced mental skills, coping with pressure, and the desire to succeed in pressure environments with mental toughness (e.g., Bull, Albinson, & Shambrook, 1996; Goldberg, 1998; Gould, Hodge, Peterson, & Petlichkoff, 1987). It is unique, however, that this definition highlights the use of specific mental skills in combination with a general attitude to assist the performer in demonstrating mental toughness. This explanation is in contrast to previous definitions that have solely defined mental toughness as a constellation of mental skills (e.g., Bull et al., 1996; Goldberg, 1998; Gould et al., 1987).

Within the definition, participants stated that athletes might possess a natural mental toughness that was then developed throughout their careers. Indeed, participants believed that mental toughness could also fluctuate during the time athletes spent in their respective sports. This suggests that mental toughness is a component that performers must continually attend to throughout their sporting career. This information poses several questions with regard to the future directions of mental toughness research. For instance, by what means have mentally tough athletes developed their levels of mental toughness? This question has also been highlighted by Bull et al. (2005) and Thelwell et al. (2005) and is being examined by the current authors. In addition, how do performers successfully maintain a state of mental toughness throughout their sporting careers? Research should also concentrate on the reasons that, and under what conditions, mental toughness might indeed fluctuate. Findings also highlight an important role for sport psychologists and coaches with regard to the development and maintenance of mental toughness.

Mental Toughness Attributes and Framework

In relation to the identification of the key underpinning attributes of mental toughness, the findings revealed an interesting difference between the superelite participants in this investigation and the elite participants in Jones et al.’s (2002) study. Namely, both groups agreed on what mental toughness is (i.e., the definition); however, explanations of the precise
makeup of mental toughness differed considerably. The superelite group identified 30 distinct attributes, compared with the 12 attributes identified by Jones et al. To our knowledge, no specific mental toughness research has been conducted to compare Olympic and World Champions with elite performers. Orlick and Partington (1988) compared highly successful performers (e.g., Olympic medalists) with performers who failed to achieve at the level expected of them. They found distinct differences with regard to attentional focus, commitment to pursuing excellence, engaging in competition simulation and imagery training, and an ongoing post-competition evaluation plan. Although no direct comparison between elite and superelite performers is possible here, an interesting avenue of research would be to determine differences in mental toughness levels. It is encouraging that all of the attributes identified by Jones et al. were contained in the superelite performers' understanding of mental toughness and collapsed into this investigation's framework. This suggests that although the superelite sample concurred with the findings of Jones et al., they appear to have a far more comprehensive insight into the makeup of mental toughness than does the elite group. Although the findings suggest that these superelite participants might have a greater understanding of how to become mentally tough, this is beyond the scope of the current study but is advised for future research.

The 30 attributes identified were found to cluster into four separate dimensions within the overall framework. In particular, the framework contained a general dimension (attitude/mindset) and three time-specific dimensions (training, competition, post-competition), which provides further support for accuracy of the definition (i.e., mental toughness is made up of general and specific elements). A question that has emerged as a result of the construction of this framework is whether performers must acquire the correct mental-toughness attitude/mindset in order to become mentally tough in situations such as training, competition, and post-competition? or do they need to develop mental toughness in
any or all of the three time-specific dimensions before they can develop the mental-toughness attitude/mindset? Although complex, these questions need to be addressed in future research for a more complete understanding.

The attributes in each dimension were further categorized into subcomponents that highlight specific areas that must be achieved in order to reach a state of mental toughness in each dimension. Attributes within the attitude/mindset dimension described how the performer achieves and maintains the belief and focus necessary to possess the correct mental-toughness attitude/mindset. For example, the subcomponent of belief was enhanced by successful achievement in a manner similar to that of Bandura’s (1977) efficacy source, performance accomplishments. The subcomponents in the three time-specific dimensions explain what mental skills and strategies performers must master in order to achieve and maintain mental-toughness levels. These specific mental skills and strategies are unique to the time-specific dimensions and describe how performers implement these attributes to optimize their motivation, confidence, and focus; how they handle the pressures, successes and failures associated with competing and preparation; and, finally, how their awareness and perceptions allow them to use the conditions and environment to achieve their potential and, ultimately, their goals.

There are a number of practical implications associated with the findings of this study. The development of the mental-toughness framework has allowed for this intriguing construct to be deconstructed and further understood. Indeed, the framework allows mental toughness to be divided into precise areas so sport psychologists, coaches, and performers can better understand what is required to achieve a state of mental toughness in each dimension. Furthermore, the subcategories in this investigation’s framework allow the coach, sport psychologist, and performer the possibility, through profiling (cf. Butler & Hardy, 1992; Kelly, 1955), to identify and highlight perceived individual strengths or weaknesses
that the performer might possess. Mental-skills training programs could then be implemented to counteract any identified weaknesses and to further enhance any strengths in the appropriate dimensions. Although this would be of great benefit, there is a need to develop a valid and reliable measure of mental toughness based on a sound knowledge base of dedicated empirical research. The findings from this study could form the basis for the development of such a measure, allowing for perceived levels of mental toughness to be assessed. Once developed, a measure would facilitate comparisons of groups of individuals, highlighting areas that require attention. Such study could identify talented but mentally weak performers to see what subcomponents or attributes require attention. Interventions could then be implemented to ensure that levels of mental toughness in each dimension could be developed and enhanced for consistently successful performance outcomes. Another interesting avenue for future research would be to investigate what mental toughness is not (i.e., certain positive psychological characteristics mislabeled as mental toughness). The framework presented here might assist in this matter and address some of the current confusion.

The result of the ranking procedure in each dimension tentatively suggests that some attributes might be more important to mental toughness than others are. The limitation of a relatively small sample size and the simplistic nature of the hierarchical procedure, however, necessitate further investigation to determine this. In addition, the importance of attributes in the framework might also fluctuate with regard to variables such as gender or sport type (individual or team). Equally, there might be subtle differences in mental toughness between individual and team performers, which this investigation did not address. Minor variation was found with Jones et al.'s (2002) definition and attributes of mental toughness in comparison with specific team-sports investigations (i.e., Bull et al., 2005; Thelwell et al., 2005). It is clear that this requires attention in future research.
We also acknowledge that participants were not specifically selected for being mentally tough, because there is currently no valid measure of mental toughness to use for selecting participants. To overcome this issue, however, all of the questions we asked were related to world-best performers' experiences and perceptions of mental toughness. Finally, we recognize the omission of coaches and sport psychologists in the focus group as a possible limitation; however, multiple interviews of each participant allowed the opportunity to clarify, revise, and discuss information proposed by all interviewees.

The study does have a number of strengths, including the range and number of sports sampled and the level that the performers, coaches, and sport psychologists have achieved in their respective sports. Researchers have recognized the information-rich insight that these superelite performers possess in specific topics such as investigating psychological-talent development (Gould, Dieffenbach, & Moffett, 2002) and the development and maintenance of expert athletic performance (Durand-Bush & Salmela, 2002). Interviewing these superelite participants has enabled the development of a framework of mental toughness. The framework provides a clear description of what mental toughness is and in what settings these attributes and subcomponents are necessary and has the potential to help performers articulate how, in what order, and under what conditions these specific components of mental toughness can be developed. We believe that the framework offers a valuable tool for coaches and performers to disseminate this multifaceted construct. In addition, the richness of the data that have emerged from this study has furthered the understanding of mental toughness and its components, and the questions that have emerged from the findings warrant attention.
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CHAPTER 5

Study 3

THE DEVELOPMENT AND MAINTENANCE OF MENTAL TOUGHNESS IN THE WORLD’S BEST PERFORMERS
Abstract

This study re-interviewed 11 superelite participants from Jones et al.'s (2007) study regarding: (a) the development and maintenance of mental toughness, and (b) how Jones et al.’s framework dimensions and subcomponents interact during the development and maintenance process. Part I revealed four distinct career phases: three developmental phases, and one maintenance phase. Positive and negative critical incidents were perceived by the participants to act as catalysts in cultivating mental toughness, and once acquired, mental toughness needed to be maintained. Findings from part 2 confirmed the development and subsequent maintenance of mental toughness over three stages, and in the dimensional order of attitude/mindset, training, competition, and post-competition. Factors influencing development and maintenance included: stage 1, skill mastery, competing against peers, and socialization; stage 2, competitiveness, successes in training and competitions; and stage 3, international competitive experience, education and advice, the use of mental skills, a good social support network, and reflective practice. Practical implications highlight the importance of the attitude/mindset dimension in the development and maintenance of mental toughness. Finally, future directions are discussed in relation to measurement development and intervention strategies.
Introduction

Mental toughness has been reported to be an important psychological contributor to successful performance (Gould, Hodge, Peterson, & Petlichkoff, 1987), and a characteristic in the development of Olympic Champions (Gould, Dieffenbach, & Moffett, 2002). However, until recently the majority of mental toughness explanations have emanated from anecdotal evidence rather than empirical research (see Connaughton & Hanton, in press; Connaughton, Hanton, Jones, & Wadey, in press). In 2002, Jones, Hanton, and Connaughton began a program of research, guided by personal construct theory (Kelly, 1955), that investigated mental toughness in sample of elite performers. Their findings provided a definition that emphasized successful coping with the demands of training and competing, in addition to being more consistent and superior than their opponents at remaining determined, focused, confident, and in control under pressure. Jones et al. (2002) then identified 12 attributes that the ideal mentally tough performer possessed. These consisted of performance and lifestyle-related factors, self-belief, desire and motivation, and how a mentally tough performer deals with the pressure, anxiety, and hardship associated with top level performance. This work initiated an upsurge in mental toughness research and encouragingly, Jones et al.’s definition has been supported and accepted as an accurate description of mental toughness (e.g., Bull, Shambrook, James, & Brooks, 2005; Connaughton, Wadey, Hanton, & Jones, 2008; Jones, Hanton & Connaughton, 2007; Thelwell, Weston, & Greenlees, 2005). Furthermore, the 12 attributes proposed by Jones et al. (2002) have also been substantiated, with some subtle differences as a function of specific single sport investigations in cricket (Bull et al., 2005) and soccer (Thelwell et al., 2005).

These studies certainly enhanced the overall understanding of mental toughness but the authors’ recognized that quality mental toughness research was still in its infancy and made a number of recommendations for further study. First, the definition and attributes
proposed by Jones et al. (2002) contained components that related to successful outcomes, suggesting the requirement to investigate mental toughness in those performers who have achieved ultimate success in their respective sports (i.e., Olympic or World Champions: Jones et al., 2002). Additionally, the inclusion of coaches and sport psychologists who have worked with Olympic and World Champions would provide a more comprehensive and clearer insight in the overall understanding of mental toughness (Bull et al., 2005; Jones et al., 2002; Thelwell et al., 2005). In response to these recommendations, Jones et al. (2007) investigated mental toughness in a sample of 15 superelite participants (i.e., 8 Olympic/World Champions, and 3 coaches and 4 sport psychologists who have coached and consulted with such performers). Findings confirmed Jones et al.'s (2002) definition of mental toughness, however, the superelite group identified 30 distinct attributes compared to the 12 attributes identified by Jones et al. (2002). This suggested that while elite and superelite individuals may agree on what mental toughness is (i.e., the definition), the superelite participants appeared to possess a greater understanding of its precise make-up. Jones et al. (2007) further developed a framework of mental toughness, which categorized the 30 attributes under 13 subcomponents within four overall dimensions. Specifically, the framework consisted of a general attitude/mindset dimension containing two subcomponents (belief and focus), and three time-specific dimensions: training (3 subcomponents: using long-term goals as a source of motivation, controlling the environment, and pushing yourself to the limit), competition (6 subcomponents: handling pressure, belief, regulating performance, staying focused, awareness and control of thoughts and feelings, and controlling the environment), and post-competition (2 subcomponents: handling failure and handling success). The framework provided a clear description of the make-up of mental toughness, and the settings in which its attributes and subcomponents were applicable. It has the potential to form the basis for a measure of mental toughness, and from an applied
perspective, Jones at al.’s (2007) framework has enabled coaches, performers, and sport psychologists to disseminate this multifaceted construct. Most importantly, in terms of this investigation, the definition of mental toughness indicated that this construct could be developed in performers, and the framework may significantly aid the understanding and articulation of how, and under what conditions, mental toughness can be developed and maintained.

Several developmental studies have qualitatively examined the psychological factors of outstanding individuals and the means by which they have acquired such characteristics (e.g., Bloom, 1985; Côté, Baker, & Abernethy, 2003; Csikszentmihalyi, Rathunde, Whalen, & Wong, 1993; Durand-Bush & Salmela, 2002; Gould et al., 2002; Hanton & Jones, 1999). Hanton and Jones was one of the first sport psychology studies to investigate the acquisition of cognitive skills and strategies in order to develop and maintain facilitative interpretations of competitive anxiety-related symptoms. Two other investigations of relevance to this study, Durand-Bush and Salmela, and Gould et al. examined factors that were perceived to be important in the development and maintenance of expert performance in sport, and the psychological characteristics that affect the development of Olympic Champions. These investigations revealed that athletes progressed through three main stages of development, and a subsequent maintenance phase, throughout their sporting careers. A variety of individuals, institutions, and factors were reported to influence the athlete’s psychological development and maintenance, either directly or indirectly (e.g., community, family, the individual himself or herself, non-sport personnel, sport environment personnel, and the sport process). Of particular interest to this study, Gould et al. identified mental toughness as a prominent variable in the development of Olympic Champions, although this was not the central aim of the study. The acknowledgement that mental toughness can be developed, strengthen the call for researchers to try to understand the precise mechanisms by which
mental toughness is developed and maintained in sports performers (Bull et al., 2005; Connaughton et al., 2008; Jones et al., 2002, 2007; Thelwell et al., 2005).

Bull et al. (2005) investigated the characteristics a mentally tough cricketer possessed, in addition to factors that were perceived to influence its development. They highlighted 20 global themes under five general dimensions that were arranged into a pyramid shaped structure containing four specific category locations: environmental influence, tough character, tough attitudes, and tough thinking. These category locations provided a reference point for informed mental toughness development recommendations, and what Bull et al. described as a 'winning mind'. However, this study was limited in that it failed to distinguish between the global themes that related to the characteristics of mental toughness, and those that related to its development. Bull et al. also suggested that the subjective meaning for each of the themes may be different for every player, thereby increasing the ambiguity of each theme. Finally, explanations and supportive data with regard to how these factors actually influenced development were lacking. For example, 'parental influence', under the structural category, 'environmental influence' was cited as an important influence at various stages in a performer's upbringing. However, there is no explanation as to what kind of influence this was, how this influence impacted on mental toughness development, or at what stages in the performer's career this influence actually took place.

More recently, Connaughton et al. (2008) investigated two key factors related to mental toughness development: (a) to uncover the underlying mechanisms through which each of the 12 mental toughness attributes identified by Jones et al. (2002) were developed, and (b) once acquired, whether mental toughness required maintenance. The elite performers from Jones et al.'s study were re-interviewed, and findings revealed that mental toughness was perceived to develop over three distinct career phases that clearly aligned with Bloom's (1985) early, middle, and later years of elite performer development, and previous
developmental research (e.g., Durand-Bush & Salmela, 2002; Gould et al., 2002). Overall, a multitude of underlying mechanisms operated in a combined, rather than independent, manner to facilitate the perceived development of mental toughness. Specifically, during the early years, advice from significant others (e.g., parents, coaches), and observing older, elite performers in a training and competitive environment provided a source of knowledge, inspiration, and encouragement that provided a powerful influence in enabling the efficient mastery of relevant skills. This along with effective leadership from coaches assisted in nurturing the correct motivational climate that was challenging, rewarding, and enjoyable in the developmental of three of the 12 attributes. These three attributes were considered the foundations for mental toughness development, and related to acquiring an unshakable self-belief, and influencing an insatiable desire and internalized motives to successfully achieve specific outcome goals. Whilst these three attributes were further enhanced during the middle years, the development of five additional attributes were influenced by competitive rivalry in training and competition, rationalization of successes and failures, and receiving guidance from an understanding social support network. The five attributes related to: bouncing back from setbacks, regaining psychological control, pushing back the boundaries of pain, accepting and coping with competitive anxiety, and thriving on pressure. The remaining four of Jones et al.’s (2002) 12 attributes were reported to develop in the later years phase, specifically, switching a sport focus on and off as required, remaining fully focused on the task at hand in the face of competition-specific distractions, not being adversely affected by others’ good and bad performances, and remaining fully focused in the face of personal life distractions. Experience of elite level competition, simulation training, and the extraction of positive experiences and rationalization of setbacks, via reflective practice, contributed to their development. Furthermore, according to Connaughton et al. (2008), the experience of perceived critical incidents (e.g., disruptions at school, loss of a peer, parental divorce) was
identified as having a crucial role in cultivating mental toughness development. Finally, once acquired, mental toughness needed to be maintained through the use of a variety of mental skills and strategies, including: goal setting, mental imagery, self-talk, cognitive reconstruction, pre-performance and pre-race routines, simulation training, and the establishment of a social support network.

While Connaughton et al. (2008) were the first to investigate the development and maintenance of mental toughness as defined by Jones et al. (2002), there were a number of limitations associated with this study. Specifically, the sample contained elite performers, who as such, provided their perceptions of mental toughness development and maintenance in relation to the ideal mentally tough performer. However, Jones et al. (2007) discovered that the superelite performers, coaches, and sport psychologists possessed a more fine grained understanding of the make-up of mental toughness compared to the elite performers in Jones et al. (2002). Therefore, investigating the development and maintenance of mental toughness using Olympic and World Champions, as well as including the experience and advice of coaches and sport psychologists who have worked with Olympic and World Champions, may provide a more precise explanation of the underlying processes involved (Jones et al., 2007; Connaughton et al.). Furthermore, coaches and sport psychologists were found to have an integral role in the development and maintenance of mental toughness (Connaughton et al.) thereby providing a unique insight into the overall development and maintenance of mental toughness. Finally, Connaughton et al.'s study was based on Jones et al.'s (2002) 12 attributes of mental toughness. Jones et al. (2007) has since proposed a framework of mental toughness in which a more comprehensive and definitive list of 30 attributes were categorized under 13 subcomponents and four dimensions. Using this framework as a base for investigating the development and maintenance of mental toughness could assist researchers in shedding more light on the development of this complex construct. The
purpose of this investigation, therefore, was to examine the development and maintenance of mental toughness in a sample that met the outcome component criteria suggested by recent mental toughness research (i.e., Olympic/World Champions: Connaughton et al., 2008; Jones et al., 2002; 2007), and included the insights and unique contributions of coaches and sport psychologists (e.g., Bull et al., 2005; Connaughton et al.; Jones et al., 2002, 2007; Thelwell et al., 2005). Presenting the framework in terms of how it builds mental toughness, and the processes by which attributes are developed and maintained within specific subcomponents, would assist in understanding how the four dimensions and 13 subcomponents are developed and maintained, and the order in which this should occur. Therefore, this study contained two parts that addressed: Part 1 – the development and maintenance of mental toughness from the separate perspectives of superelite performers (i.e., Olympic/World Champions), and coaches and sport psychologists who have worked with superelite performers; and Part 2 – using the findings from Part 1 to identify and confirm the interaction and processes by which the 4 dimensions and 13 subcomponents of mental toughness are developed and maintained.

Method

Participants

The respondents in Jones et al.’s (2007) original sample were re-contacted, and informed of the purpose of the study. Eleven of the 15 participants (7 performers, 2 coaches, and 2 sport psychologists) agreed to contribute their views and experiences once more, while the remaining four were unable to participate due to time demands and personal issues. The criteria for these data rich individuals were: at least one Gold medal at an Olympic Games or World Championships (performers), while coaches and sport psychologists had to have coached or consulted with Olympic or World Champions on a long-term basis (see Jones et al., 2007). The sports represented were swimming, athletics, judo, rowing, pentathlon, squash, and rugby union, while nationalities included Australia, England, Canada, and Wales.
The superelite performers, four males and three females, were aged between 25 and 48, and laid claim to seven Olympic gold medals and 10 World-Championship titles. They also had an average of seven years’ experience at this level of performance. The coaches (two males; aged between 38 and 62), and the sport psychologists (two males; aged between 40 and 47) had worked with superelite performers during their careers (between 5 and 20 years).

**Instrumentation**

*Interview guides (Study Part 1).* Two interview guides, one for the performers and one for the coaches and sport psychologists, were developed to elicit the relevant data and to facilitate the interview process. Both guides outlined the aims and objectives of the study, the interview process, participant’s rights, and how confidentiality would be maximized.

Questions were primarily open-ended in order to understand the development and maintenance of mental toughness as viewed by the participants. Probes were used to clarify any discussion points of confusion and the participants were also encouraged to elaborate and expand upon any information they thought relevant when discussing the development and maintenance of mental toughness (cf. Patton, 2002). The design of both guides were based on the four dimensions, 13 subcomponents, and 30 attributes contained within Jones et al.’s (2007) framework of mental toughness, and previous studies that have employed interview guides in the development and maintenance of expert performance in sport (Durand-Bush & Salmela, 2002), psychological characteristics of Olympic Champions (Gould et al., 2002), and mental toughness in elite performers (Connaughton et al., 2008).

Unique to the performer’s guide was an involvement progression questionnaire, adapted from Bloom’s (1985) and Côté et al.’s (2003) three career phases of talent and expertise development. This divided the development and maintenance of mental toughness into four specific phases: (a) initial involvement to intermediate level, (b) intermediate to elite level, (c) elite to Olympic/World Champion status, and finally (d) maintenance years. To
assist in the description of mental toughness development within each career phase and encourage discussion, each performer was asked at the beginning and end of each career phase, to subjectively rate their perceived levels for each of the four dimension and 13 subcomponent as: none at all, low, medium, or high. For example, typical probes included: how did the subcomponent, using long-term goals as a source of motivation (training dimension), increase from medium to high over the intermediate to elite level phase? It was emphasized, however, that these ratings would only be used to facilitate the general discussions of development and maintenance within the interview.

None of the coaches or sport psychologists had worked with superelite performers during the initial involvement to intermediate level, or the intermediate to elite level career phases. Therefore, their interview guide contained questions that drew on their experiences of working with superelite sports performers, and facilitated the discussion of mental toughness development and maintenance. The final section for both guides concluded with recommendations sought for developing future mentally tough performers, validity questions, and the participant’s appraisal of the interview process. Copies of the interview guides are available from the corresponding author.

Interview guide (Study Part 2). The interview guide outlined the aims and objectives of this part of the study, and reaffirmed the process, participant’s rights, and confidentiality. The main content of the interview involved presenting the combined findings of Study Part 1 to confirm the time-ordered sequence of the development and maintenance of mental toughness, specifically: (a) the order and interaction of the four dimensions within Jones et al.’s (2007) framework, and (b) the perceived processes involved in the development and maintenance of the four dimensions and 13 subcomponents. Finally, validity questions, and the participant’s appraisal of the interview process concluded the interview. Copies of the interview guides are available from the corresponding author.
Procedure

In line with the university’s ethical research guidelines, voluntary informed written consent was obtained from each participant. To help establish the parameters of the study and to allow the participants to reflect on and refresh their experiences (and for performers to reflect on their experiences within each specific career phase), the relevant interview guide was sent to each participant two weeks prior to interviewing (Jones et al., 2007). To enhance the interview process, participants were asked to write down comments and experiences that they felt were important to the development and maintenance of mental toughness, prior to taking part in the interview. All interviews were conducted face-to-face by the same researcher, who was an elite, international performer and trained in qualitative techniques.

In Part 1 of the study, performers were reminded to maintain perspective to the specific career phases that the interview questions related to. Interviews were recorded in their entirety and transcribed verbatim, lasting between 120 to 180 minutes (for performers) and 90 to 120 (for coaches and sport psychologists), collectively yielding over 500 typed pages. The transcripts were then sent to the participants and comments regarding their accuracy solicited via a follow-up phone call. Each participant confirmed that the information provided accurately reflected their experiences and thoughts regarding the development and maintenance of mental toughness.

When all interviews in Part 1 were completed and analyzed, Part 2 of the study began. Each participant received the transcript of their interview from Part 1, and the interview guide and instructions for Part 2, again two weeks prior to the interview. Once again, they were asked to prepare by generating personal comments prior to the interview, this time regarding the framework interaction and subcomponent development and maintenance. Interviews lasted 30 to 40 minutes, were recorded and transcribed verbatim yielding over 200 typed pages collectively.
Analysis

The data analysis procedures adopted in Parts 1 and 2 of this study incorporated eight steps: (a) transcripts were independently and then collectively studied in detail by the research team to ensure content familiarity. Regular meetings were held to ensure a complete understanding of the textual material; (b) the data was coded in relation to framework subcomponents and dimensions, and analyzed to identify common themes from the transcripts. This involved deductively analyzing the transcripts in accordance with Jones et al.'s (2007) framework of mental toughness; (c) any disagreement resulted in all three researchers re-reading and discussing the transcripts until consensus was reached; (d) two external researchers, knowledgeable in qualitative research analysis and familiar with the subject matter, provided feedback with regard to the data analysis, and confirmed the processes and stages involved in the development and maintenance of mental toughness; (e) participant feedback further verified the interpretation of the data; (f) direct quotations from the transcripts were selected and presented to allow the reader the opportunity to interpret the data in a more meaningful way (Sparkes, 1998); and finally; (g) trustworthiness characteristics relevant to this study were met through thick description, recording and transcribing all interviews, peer-debriefing, and member-checking (cf. Hanton, Cropley, Neil, Mellalieu, & Miles, 2007; Jones et al., 2002, 2007).

Results – Part 1

The findings are presented with an emphasis on the development and maintenance of the 4 dimensions and 13 subcomponents of Jones et al.'s (2007) framework of mental toughness. To reiterate, this study was concerned with the development and maintenance of the dimensions and subcomponents, and not the individual attributes of mental toughness. To assist the reader, the framework dimensions and subcomponents of mental toughness (Jones et al.) are presented in Table 1.
Table 1. Jones et al.'s (2007) Mental Toughness Framework Dimensions and Subcomponents

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Subcomponent</th>
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</thead>
<tbody>
<tr>
<td>1. Attitude/Mindset</td>
<td>Belief</td>
</tr>
<tr>
<td></td>
<td>Focus</td>
</tr>
<tr>
<td>2. Training</td>
<td>Using long-term goals as the source of motivation</td>
</tr>
<tr>
<td></td>
<td>Controlling the environment</td>
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<tr>
<td></td>
<td>Pushing yourself to the limit</td>
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<tr>
<td>3. Competition</td>
<td>Handling pressure</td>
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<tr>
<td></td>
<td>Belief</td>
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<tr>
<td></td>
<td>Regulating performance</td>
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<tr>
<td></td>
<td>Staying focused</td>
</tr>
<tr>
<td></td>
<td>Awareness and control of thoughts and feelings</td>
</tr>
<tr>
<td></td>
<td>Controlling the environment</td>
</tr>
<tr>
<td>4. Post-competition</td>
<td>Handling failure</td>
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<td></td>
<td>Handling success</td>
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Performers' Perspectives on Mental Toughness Development and Maintenance

The findings from the performers' perspectives are presented in five distinct sections. Sections one to three relate to the three developmental career phases (i.e., initial involvement to intermediate level, intermediate to elite level, elite to Olympic/World Champion status) and are characterized by the participants' description of the perceived underlying themes accountable for the initial development, and subsequent increases in mental toughness levels. Throughout these three developmental phases, participants reported encountering, what they perceived as critical incidents in their life and sporting career. Both negative (e.g., bullying at school, parental divorce, loss of a peer) and positive critical incidents (e.g., being selected for sporting scholarship, being highlighted by governing body as a talented performer, over-
hearing respected individuals talking about them in a positive manner) affected the
development and enhancement of mental toughness. The fourth section details the
performers’ strategies to maintain their high levels of mental toughness and emphasizes the
reasons why mental toughness levels fluctuated throughout the maintenance years. Finally,
section five proposes recommendations to assist future athletes in the development and
maintenance of mental toughness.

*Initial involvement to intermediate level.* The length of this stage varied from six to
10 years with participants reporting possessing no meaningful levels of mental toughness at
the beginning of their sporting careers. Individuals engaged in various sports and activities
for enjoyment, and as a means of socialization and skill mastery, and some were not
participating in their eventual discipline. Development in this career phase began with the
two subcomponents, belief and focus (attitude/mindset dimension) followed by the
development of two subcomponents within the training dimension: using long-term goals as
the source of motivation, and pushing yourself to the limit. The subsequent development of
these two training subcomponents was then perceived to further enhance the attitude/mindset
dimension. Specifically, mastering the various sports skills that the participant engaged in,
and deriving pleasure and a sense of achievement from that further developed the
subcomponents, belief and focus (attitude/mindset dimension). Participants reported being
competitive, learning new skills faster than their peers, and as a result performed to a higher
level than their peers. This perceived superiority, compared to their peers, was an experience
that initiated the belief that they were talented and “special”, which motivated them to
practice more and increased their focus in practice to strive to be better. One performer
commented:

I think I was sporty and enjoyed being active... The idea of learning the sport
initially... do one skill and then do the next skill... I guess mastery of a skill... I liked
racing against other kids... having success raised my self-esteem and I felt good about myself... so I liked beating other people... it was about achievement and being the best I could.

Mastering the skills and performing better than their peers enhanced the belief that they could achieve their goals, and motivated them to focus on improving and mastering more advanced skills. This increase in belief and focus triggered the development of two subcomponents: using long-term goals as the source of motivation and pushing yourself to the limit (training dimension). A typical comment was:

I didn’t really train properly at that stage... training for me equated to playing. It was a more self-motivated practice rather than real training. I did it ... practice... because I wanted to be good... I saw it as a challenge and an enjoyable one... I think I had that drive of wanting to be better, to be the best I could in that area. It starts off as an enjoyable thing but when you know you can do well then you train to do the best you can... that motivated me to try to achieve the goals... it gave me an awareness of what I have to do to get to the next level... because in every new level you get to learn a completely new set of skills... and that motivated me to push myself hard in each level so I could get to learn a new set of skills.

The successes achieved in training (e.g., mastering skills, being more successful than peers, achieving goals) enhanced motivational levels and work ethic in training, and further impacted on the strength of the subcomponents, belief and focus (attitude/mindset). Perceived critical incidents were common throughout this career phase, and positive incidents were reported to increase the participants' belief (attitude/mindset), while negative experiences resulted in enhanced focus (attitude/mindset). Below are descriptions of the impact of such critical incidents in this career phase:
The PE teacher recognized my talent and suggested I go to (named elite sports school) ... I didn’t realize that people actually recognized my talent... Another teacher also spoke to my parents about me being talented... that gave me a lot of belief in what I could do... I began to believe in myself, in my desire to get going... in what I was doing and could do... I tried harder in training and took more of an interest in what I was doing and why.

My focus was low really especially in the beginning... I was bullied and isolated at school... as a result I began to become internally resourceful... I had to be resourceful to get through what was happening to me at school... here (sport named) was something that I could be good at... that drove me to focus on the things that I was good at...on trying to be the best performer I could be... my sport was an escape for me ... I saw it (sport named) as my anxiety control and a form of relaxation from the bullying... I used it as my haven... to get away from those thoughts of being bullied... and I would get picked for the team whereas I wouldn’t get picked for the team at the playground during lunch...That enhanced my focus to try to be the best.

As participants reached the end of this career phase, they reported possessing medium levels of four subcomponents: belief and focus (attitude/mindset), and using long-term goals as the source of motivation and pushing yourself to the limit (training). Controlling the environment (training) had not developed as yet, and while the performers had begun to take part in competitive events, no levels of the subcomponents within the competition and post-competition dimensions were reported.

*Intermediate to elite level.* This phase varied in length from three to six years with participants describing it as the, “real beginning of the road to the Olympics/World Championships”. It was also described as the phase where the majority of the subcomponents were developed. First to develop was the subcomponent, controlling the environment.
(training), followed by four of the competition subcomponents: belief, staying focused, regulating performance, and controlling the environment. The two remaining competition subcomponents, handling pressure, and awareness and control of thoughts and feelings, developed later, in conjunction with the initial development of the two post-competition subcomponents, handling success and handling failure. Finally, during this career phase, attitude/mindset and training dimensions increased from medium to high levels, the competition dimension increased from low to medium, and the post-competition was described as low.

Progression into this career phase was linked to the development of the subcomponent controlling the environment (training). This was achieved either by being promoted to a more advanced training squad with “expert coaching”, or purposely relocating to a club/team that had a more desired and structured regime. One performer typified this sentiment in his statement, “the biggest thing here was the move to (club named)...which had a very structured training regime and it was more serious club regarding achievement ... facilities... international coach... weight training... and we moved to 10 sessions a week”. Being part of such a program gave the performer the perception that they were learning to control their training environment as this was the structure and discipline they “needed to achieve their goals”. They also described older, elite performers in these teams as having an influence on their mental toughness development (attitude/mindset and training). They observed these successful athletes and saw them for the “real people they were”, how they trained, and how they reacted to pressure. This increased their belief as it instilled in them that they, “could achieve what these performers were doing”. Overall, being in such an elite environment enhanced the expectation of future success and the, “proven track record of the coach and training regime” increased their belief in their potential, and motivated them to strive harder and focus on reaching their long-term goals (training and attitude/mindset). Mastery was still
a factor for the development and enhancement of mental toughness; however, competitiveness and doing what was necessary to achieve success became the biggest influence on development within this career phase. Two examples are provided below:

Being in a more or better (sport type named) environment and having better people around me... having better coaches and facilities around me ... we watched and copied older and better performers... I saw them working hard for it and how they did it....it had a big impact on me... I felt I could achieve that... so I decided I would work harder to get there. It increased my expectations of what we were going to do... I wanted to succeed.

He (the coach) seemed to understand what was necessary to become an Olympic athlete... he had a very good understanding... he had been to the Olympic Games and he had met a lot of top athletes, anecdotally he was very good at talking about what these other athletes were doing. He was constantly challenging your mind to not accept where you were but to be thinking in terms of being better. He was constantly challenging you so that you would believe... and focus on what you had to do.

The increase of subcomponent levels within the attitude/mindset and training dimensions were reported to have a positive impact upon each other. Specifically, increases in belief and focus (attitude/mindset) strengthened the attributes within the training dimension (using long-term goals as a source of motivation, controlling the environment, and pushing yourself to the limit). In turn, the experience of progressing in quality and quantity of training sessions (compared to peers), achieving successes and goals in training, and the recognition of this by coaches, further impacted on levels of belief and focus (attitude/mindset). One performer illustrated this in the following statement:

Because of my belief and focus I worked harder in training, set more goals and tried harder to achieving them in training... succeeding and achieving these goals meant
that I was right, my program was right... the more I focused on my work the better I got... I was as good as I believed I was.

During this career phase, the subcomponents within the competition dimension began to develop; however, they did not all develop at the same time or at the same rate. Some subcomponents developed faster and to a higher level than others. For example, participants reported that the first subcomponents to develop, to low levels, in the competition dimension were: belief, staying focused, regulating performance, and controlling the environment. They were perceived to directly transfer or adapt from belief and focus (attitude/mindset) and the three subcomponents within the training dimension. Specifically, previous experience of successes in training enhanced their belief that they could regulate their performance, control the environment, and succeed in competitions/games. This belief in competitions allowed them to stay focused and increased their commitment to achieving their competition goals, despite distractions. The following statement provides an example of this:

My strength in competitions was around belief and focus... and regulating my performance... probably mainly from training... knowing that I could tap in to something when I need a little bit extra. I could focus on what I had to do... to win.

In order to develop the remaining competition subcomponents (i.e., handling pressure, awareness and control of thoughts and feelings) performers searched for ways to educate themselves regarding their development. Older, more experienced performers and the coach were perceived as very influential in educating the performer during this phase. They asked questions regarding how to recognize inappropriate thoughts and feelings before games/competitions, and what possible strategies could be implemented to control and change them. Through trial and error, in addition to reflective practice, the performers reported developing strategies that enhanced their decision making, coping abilities, and control over their pre-competition thoughts and feelings. A typical comment was:
I think my areas of weaknesses were around handling pressure and dealing with my thoughts... I still could be distracted a little by my thoughts and feelings. I was aware of them but I really wasn’t able to do much about them... I found it hard to control them. I talked to the older performers and asked how they behaved in these situations... (athlete named) was big, extraverted, almost no fear of anything, and that rubbed off on us athletes... and by spending a lot of time with him, you picked up on a lot of his own personal qualities... this helped me with my belief that I could handle what they could... I began to see them as human beings... as people just ahead of me... I learned a lot from them... and put into practice what they did... I learned to adapt strategies so I could handle the pressure and control things so I could win.

Towards the end of this career phase, attributes within the post-competition dimension began to develop to what was described as low levels. Reflective practice was the main influence on developing these attributes. Performers reported having formal meetings with their coaches to analyze their performances. They discussed their performances to understand why they were successful or why they had not performed optimally. This was seen to develop the subcomponents within the post-competition dimension, and also positively impacted upon the three other dimensions (attitude/mindset, training, and competition). Specifically, successes were viewed as increasing belief in themselves, the training program, the coach, and competition preparation, which positively impacted on perceived control of the environment, motivation to strive harder, and to push themselves to the limits of their capabilities. One performer stated:

I always reviewed what I did with (coach named), reviewed what I did well and what didn’t work and the causes of these. It was a structured session which was written out and discussed rather than just a chat. I began to realize that I wanted to be at the Olympics and winning significant races made me believe that I could win them. I had
better records than (previous Olympic Champion named) had at that level when I left school at 18... These kinds of things made me believe that I could go all the way... I had targets... training and competition... I could compare myself to these performers and when I was ahead of them I then believed that I could go all the way. We internalized the successes and this helped us increase our belief.

Failures were rationalized and reflected upon as a learning experience and a means of identifying areas (in training and competition) that required improvement. This impacted upon the performer’s focus (attitude/mindset) and on how to improve these weaknesses by enhancing specific attributes in the training and competition dimensions. For example:

It was very much seen as a learning segment and important for my development. I didn’t really have failures... I could rationalize that I was younger and more inexperienced than those who beat us and that we would be better the next time. I saw them a journey to pick out the positives and learn from them. I started to analyze what went wrong and take it back into training... and changed something I was doing in training or how I was preparing for competitions.

Perceived critical incidents also had a vital impact upon overall mental toughness development during this career phase. Negative incidents which affected mental toughness during this career phase included parental divorce, negative peer influence, injury, car accidents, and the death of a peer. Such unforeseen problems were viewed as a means of developing the subcomponent, handling pressure, and the aspect of controlling their thoughts and feelings was achieved by learning to balance their life with their sport. Performers described it as developing a clear perspective on what they were doing and why, and how they could ultimately achieve their goal. One performer described an injury as the main influence in achieving the correct balance in their life:
One of the things was coping with an injury... it made me be realistic about what I could and couldn’t achieve in that year... it made me get another focus for that year which helped me readjust my goals... transfer my focus onto other things. I then had another injury which meant that I was out of sport for 8 months... I switched to my academic work and learned to get balance in my life... so when I went back to (sport named)... I knew how to balance the pressures of (sport named) with the rest of my life. This helped me switch my focus on and off when required.... and meant that I did not waste energy on worrying... I wouldn’t allow the pressure to get to me until I switched on... at the race.

Another performer described the death of a friend as enhancing his mental toughness levels, as he viewed it as helping him to take control of his life and to focus on how to achieve that control:

I realized that this sort of think could happen and you need to take control of your own life... so you got to go for it as you never know what will happen tomorrow... the other thing was that you can not rely on other people... you need to take responsibility for your own stuff and get on... It made me more determined to achieve something and I knew I had to do it for myself as no one else can do it for you.

Positive critical incidents were perceived by performers as an indication that their potential and long-term goals could be achieved, and included: valued or prestigious successes, beating respected opponents, winning specific competitions, and being selected for national squads.

One performer described such an incident:

Being selected to perform for my country boosted my confidence and reassured me that I was good enough to achieve my goals... I crashed my car and it made me realize that I needed to take more responsibility... other things were going very well... so the crash made me realize what I had and could lose... it gave me a
realization of what my expectations were and what I had to do and not do to achieve these goals.

By the end of this career phase all attributes within the four dimensions of mental toughness had developed to varying levels (i.e., attitude/mindset and training, high; competition, medium; and post-competition, low). The development and enhancement of these attributes resulted in many successful performances, and performers linked moving in to the next phase (i.e., elite to Olympic/World Champion status) with: being selected for their country, making an Olympic/World/European/Commonwealth final, or being successful at a major/prestigious event.

*Elite to Olympic/World Champion status.* With all 13 subcomponents developed to some level, the final career phase involved the enhancement of subcomponents within the four dimensions to what the participants perceived as, “their highest levels”. Several factors influenced the increase of mental toughness levels during this 2 to 4 year career phase including: competitiveness, a great desire to compete against and beat world ranked performers, experience of international competition/games, an awareness of the abilities and capabilities of world class peers/competitors, and finally, knowledge of the training regimes and preparation schedules of world-class peers/competitors in relation to theirs. Performers reported that the experience of competing at the highest level (e.g., Olympic Games, World and European Championships, and Commonwealth Games), and observing and talking to world class athletes and coaches, allowed them to gain an in-depth knowledge of the training schedules, coaching styles, and competition preparation that world class performers engaged in. This knowledge, in conjunction with their competitive desire to win, enhanced the subcomponents, belief and focus (attitude/mindset); motivation, control, and pushing yourself to the limit (training); and belief, control, handling pressure, and regulating performances (competition). Below is a typical example of their sentiments:
I traveled a lot and met other world (class) performers in my event, and in particular the world record holder at that time... from talking to these and watching them in training and warming up... I tried to experience and learn from the different methods to make sure my method was the best it could be. I felt I got bits from everywhere which helped my belief in what I was doing, my attitude to training, competition, and life really.

During this career phase, mental toughness levels in the competition and post-competition dimensions increased considerably as levels in the attitude/mindset and training dimensions were already perceived high. One participant stated:

I don’t think my overall belief and focus changed that much, or how I approached training, they grew stronger... but the success thing... winning races and achieving goals gave me more and more belief in competitions... winning meant that what I was doing was correct... my belief in my training, decisions, preparation was correct, as I won the Europeans... I was on the right track... I used each competition as a stepping stone to increase my belief, focus, awareness and control in competition.

Participants also reported a wide ranging support network in this career phase (i.e., family, friends, coaches, sport psychologists). Their assistance was perceived as a means of enhancing their mental toughness levels in all of the competition and post-competition subcomponents. Family and friends were perceived as contributing to the performers’ balance in life, “to be able to get away from the sport and switch off... to use other people to help me and not be so internal... to take pressure off me and stay in control”. Working with a sport psychologist was reported as, “giving me the tools to deal with the competitive situation... to develop the focus on/off switch... and imagery enhanced my self-belief... and to recognize what I had done and what I could do”. Knowledge of sport psychology and the use of mental skills allowed participants to interpret pressure, expectations, and anxiety in a different way,
and the outcome of this increased their focus and belief in competitions. The increased competition focus and belief enhanced the performer’s ability to control their thoughts and feelings under the pressure of important competitions. Finally, sport psychologists were perceived to aid the development of the two post-competition dimensions to their highest levels (i.e., handling success and handling failure) by assisting in reframing goals, rationalizing performances (good and poor), and attributing failures to poor preparation and successes to ability. One performer recalled:

The psychology support during this phase really helped me... setting goals... analyzing how I was feeling towards certain things and how I should feel about things... training... coaches... managers and things like that. Overall, everything was far more organized in this phase... He (sport psychologist) helped develop a greater awareness of what needed to be done in order to achieve your goals... It wasn’t just a general guidance or aim but more specific detail of what you needed to do... and when and by how much, that made you aware of how each thing led to the ultimate goal.

The increase of the post-competition dimension to high levels was perceived as necessary in order for the competition dimension to increase to its highest levels. Performance failures were reported as being responsible for the enhancement of the post-competition subcomponent, handling failures, and this ultimately led to the increase in all the competition subcomponents. These performance failures caused temporary fluctuations in mental toughness levels, and were explained by changes in personal circumstances (e.g., moving to a different team/coach), changes in how they defined their sporting career within their life, and changes in performance expectations. The fluctuations, in combination with the previously mentioned social support, ultimately assisted in creating the awareness, balance,
and control necessary to, “love the pressure” of such high level competitions (i.e., Olympics). An example is provided to illustrate the impact of such fluctuations:

In January (year identified), I had the top ranking time going into the Olympics and that put a lot of unwanted pressure on me... I wasn’t sleeping... everything was piling on top of me and I couldn’t cope with that... the expectations... I was high profile... and I was heading the world rankings... and everyone really expected me to win... I wasn’t performing well... I wasn’t sleeping... I was questioning my training...I couldn’t deal with all the expectations... when I was younger (named sport) used to be a relaxation for me... I enjoyed it because I got away from things... like bullying... But now I felt enclosed... trapped... I didn’t have anything else in my life... I also tried to do it all by myself. It took me 4 or 5 months to get over the (year identified) Olympics... to work it out... it was a horrible 4 or 5 months... but after that everything else started to get easier... I decided to see if I could enjoy (named sport)... try and be the best in Britain... train for 4 months better than I had done before... so I felt in total control of it all... training came easier because I had released myself... I took more control... there was nobody else I had to perform for... I built back my belief from feeling in control and from small successes... I had balance in my life... in my sport... I took control regarding my training and used my awareness to understand what I should be doing... to enjoy it, to love it, pressure and all.

Perceived critical incidents, both negative (e.g., family illnesses, being beaten by more junior athletes, injury) and positive (e.g., academic achievement, winning major competition, beating significant individuals such as World Champions in competition) were reported to occur during this career phase, resulting in increased belief, handling pressure and expectation, awareness of capabilities, and greater control and balance. This impacted upon
all four dimensions and the following extracts provided examples of such perceived negative and positive critical incidents:

My mum got ill (condition named) ... I realized that (sport named) wasn’t everything... and that I was too intense... and I vowed to be more relaxed... get a life really... get a balance in my life so that I could get away from (sport named)... stress when I needed to... I learned how to get pleasure and meaning from outside (sport named)... I worked out how to feel good about myself outside (sport named) and be more in control in (sport named).

One significant event was in (place named), I was competing against (competitor named) and I beat him... This was a huge confidence boost for me because he had been my hero and I looked up to him... it set me up for the Olympics. It made me realize that even though on paper this guy was the best... in that competitive environment... I beat him. Suddenly he was human, he was beatable, and I had the ability to beat him.

Winning the Olympics/World Championships was reported as being associated with the highest possible levels of mental toughness across all dimensions. This coincided with the end of the elite to Olympic/World Champion status career phase, and the beginning of the maintenance years.

*Maintenance years.* During the maintenance years, which lasted between two and five years, no participant reported perceptions of mental toughness increasing beyond the previously stated high levels. Additionally, it was believed necessary to maintain mental toughness levels or they would diminish. This was achieved through the use of mental skills and strategies:

To keep the levels necessary to win something like the Olympics, you need to constantly work on it... you keep your mental toughness levels high by working on it...
in training and in competitions... you formulate routines and strategies in training and competitions to enhance your mental toughness levels so that it is at its highest level when you go in to that important competition. It is very much like preparing physically... all the preparation leads up to the big competition.

Winning the Olympics/World Championships provided a personal confirmation that was perceived to contribute greatly to the maintenance of mental toughness levels, especially in the first two years after winning. Achieving this status reinforced their belief that they had all the qualities necessary to be “the best in the world”, and this assisted in maintaining high levels of mental toughness. One performer commented:

Winning the Olympics validated everything... it confirmed my belief and knowledge... now you know your abilities and preparation are good enough for you to win... so you know how to win really... you also know how much time you need to get yourself in to that state to win, so you are relaxed about your preparation and you believe in your program that much more than before... You know how you have handled that pressure in competition and know that you can overcome it and use it to help you... in fact my levels of mental toughness remained that high for about 2 years because of winning the Olympics.

Strategies to maintain high levels of mental toughness included: setting new targets and goals that challenged the performer and sustained high levels of focus (attitude/mindset); developing routines for everyday training, and specific competitions; maintaining the correct balance with regard to sport and lifestyle; adopting affirmative self-talk strategies; using positive rationalization; and finally, controlling negativity and expectations. For example, one performer described setting the goals of, “adding European and Commonwealth gold to the Olympic gold... which no other British athlete had done...and which I did”, while another described developing routines that addressed, “everything from training to when I got up in
the morning on race day to when we finished the race”. Maintaining the correct balance was equated with, “loving the lifestyle, enjoying the training and realizing how that contributed to winning”. Self-talk, positive rationalization, and controlling negativity re-enforced the performer’s belief that they could handle and use the pressure in competition to help them win.

All of the performers reported a reduction in mental toughness levels at some stage during the maintenance years. Three participants claimed to recover from this drop in mental toughness levels through a radical change in routine, and the use of the mental skill and strategies mentioned previously, while the other four stated that the reduction in mental toughness levels contributed to unsuccessful performances and ultimately, retirement from competitive sport. A common trend emerged in relation to this reduction in mental toughness levels with participant suggesting that attributes within the attitude/mindset dimension reduced first, and caused a, “domino effect” on attributes within the training, competition, and post-competition dimensions. A lack of ‘new challenges’, injuries, other factors in life overtaking the importance of sport (e.g., relationships, family, financial, career), and nothing left to prove, were reported as reasons for a reduction in the subcomponent focus (attitude/mindset). This had a negative effect on belief (attitude/mindset) and the subcomponents within the training dimension, which in turn, negatively impacted on the competition and post-competition dimensions, respectively. Two performer’s sentiments depict the process of this reduction in mental toughness well:

I needed another goal… I had won the Olympics, the Europeans, Commonwealths I had the world record. So, I needed a focus and I couldn’t get up about winning the Olympics again… I had lost my complete focus and that hit my belief and this had a knock-on effect on my training and competition… I could (sport named) well but I
didn’t have that extra... that edge... that bit that allowed me to excel in training and competition.

We thought we could get away with doing less and still win... other things (jobs, relationships) distracted us from our goals. Our priorities changed and made me a more rounded individual but less mentally tough in (sport named), as the achievement was diminished as the focus on (sport named) was smaller. (sport named) was no longer at the expense of everything else. The focus was gone which meant that there was no motivation.

The performers who overcame these reductions in mental toughness levels stated that they found a way of setting new challenges that motivated them to focus on goal achievement, and provided a different perspective on their sport, for example: moving to a new location, recruiting a new coach, changing events that they competed in, and developing a more technical side to their sport. Once again, this followed the same dimensional path as the reduction in mental toughness levels. Namely, focus (attitude/mindset) increased and assisted the increase of belief (attitude/mindset), and the subcomponents within the training dimension, which had an overall impact on the competition dimension. One performer explained:

A new coach gave me a different perspective to my (sport named), a more technical side to it... I think it provided me with new challenges rather than the same old same old... and it motivated me to strive for it and focus more that the year before. I felt I had something to prove again.

Recommendations. The final part of the interview probed performers’ experiences for recommendations in assisting the development of mental toughness in future athletes. Four major suggestions were offered: (a) education regarding the definition and framework of mental toughness, and in particular, how to develop the subcomponents in each dimension.
Providing examples of how past performers have achieved this and why they are important for success was also highlighted as useful to future athletes; (b) providing young performers with the correct training regime (i.e., disciplined and structured) and expert coaching that can initiate the foundations for development within the attitude/mindset and training dimensions; (c) a wide ranging social support network that includes sporting (e.g., coaches, senior athletes, sport psychologists, team-mates) and non-sporting (e.g., friends, parents) individuals in order to achieve the correct balance between sporting and general life commitments; (d) instruction in sport psychology from an early age, rather than when ‘things go wrong’. In other words, how to use mental skills such as goal setting, imagery, focusing, restructuring, and reflective practice to help develop mental toughness, and education of what they should be feeling and thinking, and importantly, why. Finally, with regard to maintenance, participants recommended setting goals that the performer has not already achieved, something that the performer can focus on and really want to achieve, such as retaining an Olympic title rather than trying to win again. One performer suggested:

For maintaining you need to recreate the excitement and change the goals as winning a second gold may not be enough to motivate them. You need to focus on new challenges and discover aspects that you feel you have not achieved yet.

__Development and Maintenance: Coaches’/Sport Psychologists’ Perspectives__

The coaches’ and sport psychologists’ perceptions regarding the development and maintenance of mental toughness were based on Jones et al. (2007) framework of mental toughness. As none of the coaches or sport psychologists had worked with superelite performers during their first two career phases (i.e., initial involvement to intermediate level, and intermediate to elite level), no reference to specific career phase development is provided. Findings are presented in three sections: section one provides a description of how mental toughness would be or has been developed in performers, section two depicts the
methods and strategies proposed to maintain high levels of mental toughness, and in section three, recommendations to assist future athletes are offered. Finally, in order to enable a more comprehensive description, findings combine coaches’ and sport psychologists’ perceptions of mental toughness development and maintenance. Merging their perceptions incorporated the unique and distinctive insights that coaches and sport psychologists possess in relation to the performer’s life (sporting and non-sporting), and the mechanisms by which they develop and maintain mental toughness.

*Development.* Mental toughness was believed to develop over a number of years and to follow the dimensional order of attitude/mindset, followed by training, competition and finally, post-competition. Development involved the combination of many factors including: trial and error, successes and failures, expert instruction, and social support. Specifically, the performers were perceived to begin their sporting career with the talent and physical attributes necessary to excel in that particular activity, in addition to the possession of low levels of the attitude/mindset dimension. The coaches and sport psychologists reported that they would set about to enhance or build upon the subcomponents, belief and focus (attitude/mindset). They would create challenges in training and educate the performers regarding how focus (attitude/mindset) contributed to acquiring, “the right physical and mental shape to achieve the goal of winning the Olympics or World Championships”. Successes in training were attributed to focus and commitment, fostering belief and contributing to the overall development of the attitude/mindset dimension. One coach commented:

> They would ideally come to me with the talent and physical attributes and some sort of belief and focus. They would have to build this (belief and focus) in training... if you have a session to do then you have to finish the session. This makes them face challenges... we get the belief through the training sets, they complete the sessions,
and they can see things happening, and this builds the belief within them. They get to understand how important focus is to their training and development, staying committed to the training program and seeing the results means that they see what’s happening… This gives them a huge amount of self-belief in the program, me (the coach), and themselves. All this develops the mindset.

The three subcomponents within the training dimension were developed through good communication and effective goal setting. Involving the performer in the preparation and planning provided the commitment and motivation necessary to strive to achieve these aims in training, and was reported as developing the subcomponent, using long-term goals as the source of motivation (training) and, “giving them ownership of it in some form and this helps the performers feel in control, they take charge of their sport”. Specifically, education and explanation of how the achievement of specific short-term goals in training equated to the achievement of medium and long-term goals in training and competition. This knowledge provided the understanding of how long each training phases would take, and increased their motivation, focus, patience, and perception of control. A coach’s example typified this:

You need to help them realize what they can achieve with the training and the physique they have now… communication again… you need to sit down with them and set achievement goals… you can’t progress to the next step unless you reach the goals that are in front of you. I give them specific aims in each area and then we sit down to discuss how in training we can achieve these aims, we break it down further to allow the performer to realize how doing something in training relates to the achievement of the aim. When we reach that step then we discuss the next aim to achieve. They learn where ‘they are at’ in order to see where they have to go. I bombard them with reminders of why they are here and what they need to do in order to win… to motivate them especially when they are tired.
Developing a positive group atmosphere in training, partnering performers with older more elite performers, emphasizing the acceptance that training, “has to hurt”, and fostering pride in the achievement of difficult sets and routines, was reported to contribute to the enhancement of the subcomponents, controlling the environment, and pushing yourself to the limit. Other methods included: challenging the performers in every aspect of their training schedule, encouraging competitiveness in training through head-to-head races or challenges, and the use of positive imagery (e.g., out performing your opponents in every part of the training session). A coach explained this:

We try to develop pride in training hard... I put talented youngsters in with the older more elite and partner them together to develop this pride in training hard... they race head-to-head... push themselves harder as they are involved and committed to the team... it's a team bonding thing... this pride develops into a feeling of achievement every session which then develops into a love for the hard bits. They imagine beating the competitors in training sets... It gets them aware of the competition and what they need to do.

The next step in mental toughness development was to use the already acquired subcomponents within the attitude/mindset and training dimensions to assist in the acquisition of subcomponents within the competition dimension. Belief, focus, using long-term goals as a source of motivation, controlling the environment, and pushing yourself to the limit (attitude/mindset and training), were all perceived to transfer to corresponding subcomponents within the competition dimension. Achieving short-term goals in training and competition and small successes were reported to develop and enhance the competition subcomponents: belief, controlling the environment, regulating performance, and handling pressure. One of the sport psychologists commented:
We try to point out what makes the ideal performance and we break down what needs to be done, certain things must be practiced in competitions and this may mean sacrificing an outcome to achieve a specific aim or goal... it is like a jigsaw... every piece must be in place and sometimes you have to be able to see that sections must be practiced separately, and perfected separately, and then put together for the big one (Olympics).

Acquiring a sensible balance in life was also reported as an important factor in the development of the competition dimension. Balance was described as, “other interests and priorities in life, such as hobbies or education” and these allowed the performer to switch off from the pressure of their sport. Additional knowledge of how others have handled pressure situations and experiences, and simulation training to experience the high pressure conditions, resulted in developing the ‘on/off’ focus switch and the ability to enjoy and ultimately, love the pressure of competing. A typical example from a sport psychologist follows:

Switching off was a key skill here... it’s easy to switch on but switching off is more difficult. If everything is fitted around your sport in a way that you can not get away from it, it is almost that you are too desperate to succeed... there is too much reliance on having to be successful... there is a need for balance... to allow the athlete to step away from the sheer pressure of it all... This allows them to be able to switch off which gives them that out or break in order to recharge themselves. Once they can switch off then they can focus on or switch on at higher levels when it is required... they can concentrate their focus on the aspects that require the greatest amount of focus for the necessary time slots and then switch off and recuperate.

The experience of competing and engaging in post-race/game analysis instigated the acquisition of the two post-competition subcomponents. Handling success developed through
successes in competitions, which were formally analyzed, “to understand why they occurred” and imagery was then used as a means of mentally recreating the successes. Associating certain emotions to specific feelings and experiences was reported to assist in the creation of optimal pre-competition thoughts and feelings. Re-experiencing and replaying successes, via the use of imagery, enabled the retention of such, “feelings of success” over a longer time period, and this was perceived to increase belief (attitude/mindset and competition). The second subcomponent, handling failure, was developed by analyzing and rationalizing failures and mistakes that caused performance decrements, as a means of improving future training methods and competition performances. This resulted in increased focus (attitude/mindset and competition) and motivation in training, and greater awareness of pre-race/game thoughts and feelings, which ultimately led to the control of these pre-performance thoughts and feelings. Pre-race/game routine were also developed (e.g., coach and performer or sport psychologist and performer) to enhance belief, focus, and awareness in competitions, and encompassed what the performer “will do from when they wake up to when they line up”. Within routines, specific strategies were also developed to counteract any possible distractions, disruptions, or problems, and were perceived to enhance belief and greater control of pre-race/game thoughts and feelings. One coach commented:

Mistakes that caused problems or they reacted to badly... you video them if possible and calculate how much time they lost as a result of that mistake... I talk about what they are thinking and why they think that way... the first step is to introduce an awareness to them and then discuss what effect these thoughts and feelings have on their performance, how we can change these thoughts and feelings, and then we practice this in training and smaller competitions, develop routines... we sit down and work out scenarios that could happen and how we would cope with that scenario and what we would do to overcome it... We try to think of every thing that could happen
and plan for it. This way they are ready for anything and nothing will distract them. If they know that their routine works they are more relaxed... and being relaxed means enjoying the moment... loving the pressure.

Coaches and sport psychologists perceived mental toughness levels to be at their highest when performers were winning important competitions/races/games (e.g., Olympics, World Championships). While they did not profess to understand every circumstance that performers encounter, coaches and sport psychologists reported the notion of perceived critical incidents and their influence on mental toughness development. Specifically, they acknowledged the affect of negative incidents on mental toughness development but had no knowledge of how it influenced mental toughness, other than the possibility that, "they learned to how to cope and overcome such problems". With regard to positive critical incidents, coaches and sport psychologists reported being responsible for initiating many of these incidents, in order to enhance mental toughness. One coach provided an example of a positive critical incident:

Putting them (performers) in with other world class athletes in their event... their competitors... to train with these people and realize how much better they are that these competitors in training, coping with general life... their belief increases and this has a knock on effect on their motivation, commitment... focus. This makes them more mentally tough.

*Maintenance.* Coaches and sport psychologists reported that high levels of mental toughness needed to be maintained with effort or they would decrease. Methods to maintain mental toughness were perceived to follow the same dimensional order as development, namely: attitude/mindset, training, competition, and post-competition. In fact, preserving high levels of the attitude/mindset dimension was seen as the foundation for maintaining a performer's overall mental toughness. Additionally, reductions in mental toughness levels
were also believed to occur in the attitude/mindset dimension first, which then impacted negatively on the other three dimensions. Coaches and sport psychologists reported that mental toughness levels were maintained through the use of specific mental skills and strategies that encouraged the, “correct balance in life for the performer” and re-enforced belief and focus (attitude/mindset). One coach stated:

I try to make sure that they have something else in their life to focus on ... personal development or another recreational pastime or hobby that they do and has very little to do with their main sport/focus... you have to be able to switch off... to have balance.

Achieving this balance was perceived as essential to maintain high levels in the dimensions, training, competition, and post-competition, and involved extracting maximum value from successes and an understanding of why such successes occurred. Such an understanding, according to coaches and sport psychologists, enhanced awareness regarding the achievement of specific targets/goals and increased the performer’s belief that they could overcome any obstacles. Specific skills used involved, “visualizing potential obstacles and breaking them down into many smaller parts so that they could be tackled them one by one, instead of all together”, and simulation training to increase focus and belief. One of the sport psychologists suggested:

It’s about getting them to recognize at a conscious level, how they got to where they are now... to get to the core of their achievements... to re-enforce their belief.... we built up the awareness of what made them stand out as the better performers. The more we re-enforced and re-lived the occasions that they excelled under stress and pressure and overcame obstacles, the more belief they possessed to achieve under pressure and overcome any problems. Successes were what increased the durability of the belief or what made it unshakable.
Effective communication and education regarding the long-term goal (e.g., retaining their Olympic title) and how this could be achieved, was reported to assist in maintaining focus (attitude/mindset) and provide justification for continuing to compete in that sport and at that level. The development of a process and performance goal map that guided the performer to the long-term outcome goal, allowed the performer, “to understand and see the steps to achieving that goal”. This enhanced the training dimension and the performer’s internal motivation to, “stick with the hard training and the achievement of your goal as the number one priority in your life”, and increased focus and commitment, specifically, what they had to do day to day, and how it all linked together. Maintaining high levels of belief and focus (attitude/mindset) was perceived to contribute to the preservation of high levels of the training, competition, and post-competition dimensions. When strategies to maintain high levels of the dimension attitude/mindset were perceived to be effectively in place, then and only then, were separate strategies introduced to maintain high levels in the other three dimensions. These strategies included: encouraging competitiveness; instilling pride in the successful completion of difficult training sets; developing competition routines; reflective practice to recognize the key parts in the game or performance, and how to react to such key moments; and simulation training to incorporate all possible occurrences and potential problems in games/races (e.g., mistakes, opponent’s game plan). One sport psychologist commented:

In lesser competitions we use video analysis of such situations (mistakes, problems), we remember why we worked so hard to get here and stay committed to that. We try to talk these things through in smaller competitions so if they happen at big events we know how to react to them. Communication, trying to see the bigger picture, and using imagery and simulation training of the different responses to those situations
and what occurs as a result of these different responses... Practice gives the performer the knowledge to select the right options in pressure situations.

**Recommendations.** The final part of the coaches'/sport psychologists’ interview probed for recommendations to assist future athletes. It was suggested that mental toughness education programs for both coaches and performers would be invaluable and that the framework was believed to assist in the fine-grained understanding of mental toughness. Specifically, one sport psychologist stated:

The framework helps to explain the make-up of mental toughness... in particular, the subcomponents give specific direction on what to focus on to achieve mental toughness... it makes it easy for a performer to see what they have to do in training... in competition..., it provides a practical understanding and breakdown of mental toughness.

Other suggestions included: building belief in the performer through successes in training and competition, setting challenging but realistic goals, and finally, good communication and understanding between the athlete and coach. One coach commented:

Performers need to know that not only are the good enough to win but that their training program, coaches, lifestyle are right and facilitate the achievement of their goal. You build the belief in the system and they build the belief in themselves.

**Results – Part 2**

Having identified and analyzed the findings of study part 1, the views and beliefs of all performers and sport psychologists/coaches were incorporated into a proposed model of mental toughness development. This was then presented to participants and all 11 were re-interviewed to verify the authors’ interpretations. Findings are presented in two distinct sections: (a) the order and interaction of dimensions in the development and maintenance of
mental toughness and, (b) the developmental and maintenance of each framework subcomponent.

**Dimensional Order and Interaction**

All participants confirmed the developmental order of the four dimensions within the framework of mental toughness. Figures 1-3 present the order and interaction of framework dimensions that occurred over the three proposed developmental stages of mental toughness, and the subsequent maintenance of mental toughness.

*Stage 1.* The subcomponents within the dimension attitude/mindset were initially acquired to what was perceived as low levels in stage 1, and these triggered the development of subcomponents within the training dimension, depicted in Figure 1.

![Diagram](image)

**Figure 1:** Development Stage 1.

Stage 1 was reported to occur either naturally, or due to the performer engaging in sporting activities as a means of skill mastery, competing against peers, and socialization, and the
development of the three training subcomponents further enhanced levels of the subcomponents, belief and focus (attitude/mindset). Once the attitude/mindset and training dimensions were established, development of stage 2 began.

**Stage 2.** While still having a reciprocal and positive impact on increasing subcomponent levels within the attitude/mindset and training dimensions, stage 2, involved the initiation of development within the competition dimension (presented in Figure 2).

![Diagram of Development Stage 2](image)

Figure 2: Development Stage 2.
Attitude/mindset and training subcomponents, already acquired to what the participants described as medium levels, were perceived to directly transfer and assist in the acquisition of competition subcomponents. Specifically, belief and focus (attitude/mindset), and using long-term goals as the source of motivation, controlling the environment, and pushing yourself to the limit (training), in conjunction with skill mastery, competitiveness, and successes in training and competitions, impacted on development within stage 2. Attitude/mindset and training also increased as a result of subcomponent development in the competition dimension.

Stage 3. In addition to the continued impact of stage 1 and 2 upon subcomponents within the attitude/mindset, training, and competition dimensions, developmental stage 3 involved experiences of successes and failures in competitions that initiated the acquisition of the subcomponents, handling failure and handling successes (post-competition). The development of the post-competition dimension further enhanced three subcomponents within the competition dimension: belief, handling pressure, and awareness and control of thoughts and feelings. Once all four dimensions were acquired, they interacted to create a spiraling influence on the further enhancement of all attributes, presented in Figure 3. This interaction, in conjunction with the use of mental skills, resulted in an all time career high for mental toughness levels. Therefore, in addition to the factors that influenced development stage 1 (i.e., skill mastery, competing against peers, and socialization) and stage 2 (i.e., skill mastery, competitiveness, and successes in training and competitions), development in stage 3 was underpinned by: increased experience of competing at an international level; education and advice from peers, coaches, and sport psychologists; the development of pre-race/game routines; a wide ranging social support network; attaining the perceived correct balance in life; and finally, reflective practice.
Attitude / Mindset

Belief  Focus

Training

Using long-term goals as the source of Motivation
Controlling the Environment
Pushing Yourself to the Limit

Competition

Belief  Staying Focused  Regulating Performance  Handling Pressure  Awareness and Control of Thoughts and Feelings  Controlling the Environment

Post-Competition

Handling Failure  Handling Success

Figure 3: Development Stage 3.
Development stage 3 was also reported as the stage that most accurately described the maintenance of mental toughness, with all four dimensions interacting to maintain high levels of mental toughness.

Interestingly, participants stated that while all dimensions were necessary and essential for mental toughness development, the dimension, attitude/mindset, was seen as the foundation for the development and maintenance of mental toughness. In fact, the possession of high levels of belief and focus (attitude/mindset) were perceived necessary to achieve overall high levels of mental toughness. Additionally, the competition dimension was perceived as the most important dimension of mental toughness. The competition dimension was described as the ‘outcome dimension’, and that the other three dimensions were developed and enhanced in order to increase the subcomponent within the competition dimension.

Subcomponent Development and Maintenance

Performers, coaches, and sport psychologists confirmed the developmental processes involved over the three developmental stages, and the process of maintenance that occurred within development stage 3. A description of the specific processes involved in the development and maintenance of the 13 subcomponents is presented in Tables 2-5. Verified by all participants, it portrays the culmination of high mental toughness levels in all 13 subcomponents, and how these high levels were maintained.

Attitude/mindset. Table 2 presents the perceived processes involved in developing and maintaining the subcomponent, belief and focus (attitude/mindset), to what was perceived as their highest levels. Specifically, the subcomponent, belief, develops through an awareness of the performer’s capabilities in training and competition, and this enhances their self-belief in the pursuit of specific goals.
Table 2. Developmental Processes of Subcomponents within the Attitude/Mindset Dimension

<table>
<thead>
<tr>
<th>Belief</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unshakable belief that potential will be reached and goal will be achieved</td>
<td>Greater focus on goal achievement (i.e., No. 1 priority)</td>
</tr>
<tr>
<td>Successes and awareness of why successes occurred in training and competition</td>
<td>Switching off allows greater intensity of focus when switched on</td>
</tr>
<tr>
<td>Increased belief in self and achievement of goals</td>
<td>Allows regeneration and alleviates pressure of sporting life</td>
</tr>
<tr>
<td>Awareness of capabilities in training and competition</td>
<td>Increased confidence to switch focus off when not required</td>
</tr>
<tr>
<td></td>
<td>Increased confidence of being able to switch focus on when necessary</td>
</tr>
<tr>
<td></td>
<td>Learning how to trigger focus on</td>
</tr>
</tbody>
</table>

Successful achievement of these goals, in addition to an understanding of the underlying reasons for goal achievement produces an, “unshakable” belief in the attainment of the performer’s sporting potential and their ultimate goal (e.g., an Olympic gold medal).

Acquiring the capability to switch their sporting focus on was viewed as the first step or priority in the development of the subcomponent focus (attitude/mindset). Confident in the knowledge that they can switch their focus on, when required, was subsequently reported to assist in enabling the performer to learn how to switch their sporting focus off when it was not necessary. Being able to switch off then allowed recuperation and recovery to occur, thereby reducing any unnecessary pressures or stressors that the performer would experience.
Overall, being able to switch off and recuperate enabled the performer to sustain a more intense focus on goal achievement when it was necessary and required (e.g., in training and competition). Finally, all participants confirmed that the maintenance of the subcomponents, belief and focus, followed the same processes that were involved in their development. However, this occurred over a briefer time period, as performers possessed the required knowledge to enhance these subcomponents to high levels.

Training. Table 3 depicts the processes involved in developing and maintaining the three subcomponents within the training dimension: using long-term goals as a source of motivation, controlling the environment, and pushing yourself to the limit. The design of a goal setting map was seen as essential in assisting the performer to develop the subcomponent, using long-term goals as a source of motivation, and included the achievement of specific process and performance goals within realistic time scales, and one end-result outcome goal (i.e., winning the Olympics or World Championships). This created an overall increase with regard to discipline, patience, and motivation in the successful achievement of each training aim and goal. The subcomponent, controlling the environment, was achieved by accepting responsibility for both good and bad actions, and results in training, which then contributed to an increased perception of control over the planning and preparation. Possible disadvantages, such as poor facilities, weather conditions, were re-interpreted as assisting the performer in gaining an advantage or psychological edge over their opponents. This resulted in enhanced perceived control over the training environment. Finally, the subcomponent, pushing yourself to the limit, was developed through education and acknowledgement of the benefits of specific training sets that were originally perceived as difficult. The 'hard bits in training' were then perceived as important aspects and contributors to the achievement of goals, short-term and long-term, and the ultimate goal
(becoming Olympic/World Champion). Finally, imagery and competitive situations were used to motivate the performer to enjoy and eventually, love the ‘hard bits in training’.

Table 3. Developmental Processes of Subcomponents within the Training Dimension

<table>
<thead>
<tr>
<th>Training</th>
<th>Controlling the environment</th>
<th>Pushing yourself to the limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using long-term goals as the source of motivation</td>
<td>Total control of the self and environment in training</td>
<td>Love the hard bits and beating other in training</td>
</tr>
<tr>
<td>Increased motivation in training</td>
<td>Total control of the self and environment in training</td>
<td>Love the hard bits and beating other in training</td>
</tr>
<tr>
<td>Increased discipline and patience in the achievement of stage goals</td>
<td>Views poor facilities / weather conditions as a means of acquiring a psychological edge over opponents</td>
<td>Competitiveness and imagery in training motivates the achievement of the hard bits</td>
</tr>
<tr>
<td>Design a process and performance goal setting map with realistic stages and time limits</td>
<td>Greater perceived control of preparation and training environment</td>
<td>Hard bits viewed as the most important contribution to the achievement of goals</td>
</tr>
<tr>
<td></td>
<td>Taking responsibility for actions and results in training</td>
<td>Recognition of how they advance the achievement of goals (goal map)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Educated on the benefits of the ‘bits that hurt in training’</td>
</tr>
</tbody>
</table>

**Competition.** Table 4 highlights the processes involves in developing and maintaining the six competition subcomponents: belief, focus, regulating performance, handling pressure, awareness and control of thoughts and feelings, controlling the environment. Belief (competition) was developed from successes achieved in training and the subcomponent
belief (attitude/mindset) that was adapted and perceived to transfer to the competition environment. This enhanced the performer's commitment to the plan and goal. In addition, devising strategies to overcome potential setbacks contributed to a state of total belief. The subcomponent, staying focused, was developed by using this total belief, and high levels of focus (attitude/mindset) to ensure that all distractions were blocked out in the pursuit of the competition goal. The subcomponent, regulating performance, was acquired by educating the performer with regard to the specific aspects in a performance that makes the difference between winning and losing. Simulation training was then used to enhance the recognition of these differences, enhancing the performer's knowledge of when to increase their effort to take advantage of such situations. This ultimately led to the development of a killer instinct.

The fourth subcomponent, handling pressure, was developed and maintained from the acquired unshakable and total belief (attitude/mindset and competition). This, in conjunction with the development of pre-race or pre-game routines, facilitated the acceptance and eventual control of competition pressure and anxiety. This facilitated the channeling of pressure and anxiety to enhance performance; thereby, enabling the performer to love the pressure of competition. The fifth competition subcomponent, awareness and control of thoughts and feelings, began with an understanding and education of what specific thoughts and feelings were desirable and necessary for optimal performance. The probability of these desired thoughts and feelings occurring was then enhanced through the use of mental skills, until the performer perceived that they had total control over their pre-race/game thoughts and feelings. Finally, the subcomponent, controlling the environment, directly transferred from the training subcomponent, controlling the environment, to provide the perception of control over the competitive environment. Maintenance of all subcomponents was achieved through the same processes but in a shorter time period.
Table 4. Developmental Processes of Subcomponents within the Competition Dimension

<table>
<thead>
<tr>
<th>Competition</th>
<th>Belief</th>
<th>Staying Focused</th>
<th>Regulating Performance</th>
<th>Handling Pressure</th>
<th>Awareness and control of thoughts &amp; feelings</th>
<th>Controlling the environment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Developed strategies to overcome any problems/mistakes to ensure total belief</td>
<td>Increased focus on competition goal</td>
<td>Development of killer instinct</td>
<td>Love pressure</td>
<td>Total control over pre-race thoughts and feelings</td>
<td>Greater control over environmental conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Focus (attitude/mindset) and belief (competition) to ensure distractions are blocked out</td>
<td>Knowledge of when to increase effort to take advantage in performances</td>
<td>Increased control over pressure/anxiety allows channeling of anxiety/pressure to enhance performance</td>
<td></td>
<td>Perceived advantage over opponents</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Simulation training to enhance recognition of such parts</td>
<td>Development of pre-race or pre-game routine to increase control</td>
<td></td>
<td>Experience of training in less than optimal environments</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Awareness of parts in a performance that make a difference</td>
<td>Belief (attitude/mindset &amp; Competition) and acceptance of competition pressure/anxiety.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Developed strategies to overcome any problems/mistakes to ensure total belief</td>
<td>Increased focus on competition goal</td>
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<td>Focus (attitude/mindset) and belief (competition) to ensure distractions are blocked out</td>
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<td></td>
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<tr>
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<td></td>
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<td>Simulation training to enhance recognition of such parts</td>
<td>Development of pre-race or pre-game routine to increase control</td>
<td></td>
<td>Experience of training in less than optimal environments</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Awareness of parts in a performance that make a difference</td>
<td>Belief (attitude/mindset &amp; Competition) and acceptance of competition pressure/anxiety.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Post-competition. Table 5 displays the processes involved in developing and maintaining the post-competition subcomponents, handling failure and handling success. Both subcomponents began with post-competition analysis and reflective practice. Handling failures involved recognizing failures and mistakes as a means of improving future performances which enhanced focus on goals (attitude/mindset and competition) and motivation in training. Handling success encompassed the recognition of how success was achieved, in order to repeat such success, and this was perceived to enhanced belief and focus (attitude/mindset and competition) and overall motivation in training.

Table 5. Developmental Processes of Subcomponents within the Post-Competition Dimension

<table>
<thead>
<tr>
<th>Handling Failure</th>
<th>Handling Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased focus on goals and motivation in training.</td>
<td>Enhanced belief, focus, and motivation</td>
</tr>
<tr>
<td>Failures/mistakes viewed as increasing knowledge of how to improve future performances</td>
<td>Increased knowledge of how to repeat success, (e.g., how long it takes to prepare for next major competition)</td>
</tr>
<tr>
<td>Rational analysis and reflective practice of performances with coach/sport psychologist</td>
<td>Increased knowledge of how success was achieved</td>
</tr>
<tr>
<td></td>
<td>Rational analysis and reflective practice of performances with coach/sport psychologist</td>
</tr>
</tbody>
</table>
Discussion

The study reported in this paper contained two parts that addressed: (a) the perceived underlying mechanisms accountable for the development and maintenance of mental toughness from the perspective of superelite performers, and coaches and sport psychologists who have worked with such performers, and (b) verification of the interaction of the four dimensions with regard to the development and maintenance of mental toughness, and the processes involved in the development and maintenance of the 13 subcomponents contained within Jones et al.'s (2007) framework of mental toughness. Findings are presented in the following subsections: participants' experiences of mental toughness development and maintenance, dimensional interaction and subcomponent development and maintenance, and summary.

Participants' Experiences of Mental Toughness Development and Maintenance

Although the interview guide (for performers) was organized and adapted around Bloom's (1985) and Côté et al.'s (2003) three career phases of talent and expertise development, the performers' experiences of mental toughness development and maintenance included four distinct career phases: three developmental phases, initial involvement to intermediate level, intermediate to elite level, elite to Olympic/World Champion status; and one maintenance phase. Therefore, this investigation has clear comparisons with previous research on elite performer development (Bloom), talent development (Csikszentmihalyi et al., 1993), development and maintenance of expert performance (Côté et al., 2003; Durand-Bush & Salmela, 2002), psychological characteristics of Olympic Champions (Gould et al., 2002), and mental toughness in elite performers (Connaughton et al., 2008). However, the data provided by performers who have reached the pinnacle of their sporting careers (i.e., Olympic or World Champion), and coaches and sport psychologists who have intimate knowledge of working with such superelite athletes, afforded a unique and fine grained
insight into the development and maintenance of the 13 subcomponents and four dimensions of mental toughness. Findings also highlighted the time ordered sequence of subcomponent development and the precise career phase in which each subcomponent was developed. In addition, the act of winning an Olympic or World title was found to contribute greatly to the maintenance of high levels of mental toughness (i.e., up to two years).

During initial involvement to intermediate level, performers were competitive and engaged in various sports and activities for enjoyment, socialization, and skill mastery (Connaughton et al., 2008; Gould et al., 2002). Deriving a sense of achievement from learning skills more quickly and to a higher level, compared to their peers, increased focus in the participants and instilled a belief of sporting superiority. The intermediate to elite level phase was characterized by discipline and structure in training, observing elite performers in a training and competitive environment, and learning from expert coaches and older, elite performers, who were regarded as knowledgeable and role models (Durand-Bush & Salmela, 2002). Mental toughness development in this phase was focused on discipline, structure, and what was necessary in order to achieve success in training (e.g., technical mastery, technique, work ethic), and findings were consistent with studies that have attributed disciplined involvement to development of a talented individual (Bloom, 1985) and Olympic Champions (Gould et al.). During the elite to Olympic/World Champion status phase, development of mental toughness was influenced by experience of international competitions/games, an intense desire to win and upstage world class performers, a wide ranging social support network, and gaining knowledge from a variety of respected individuals (e.g., coaches, competitors, sport psychologists). Interestingly, acquiring knowledge from experienced individuals was found to be significant in the development of facilitative interpretations of competitive anxiety (Hanton & Jones, 1999), the psychological characteristics of Olympic Champions (Gould et al.), and mental toughness (Connaughton et al.). Additionally, Hanton
et al. (2007) suggested that increased competitive experience allowed performers to become more familiar with and cope more positively in future competitions. In contrast, Gould, Guinan, Greenleaf, Medbery, and Peterson (1999) observed that Olympic teams that did not meet or exceed expectations more often identified a lack of experience as a negative performance factor.

Specific to the findings of this study, the identified sources of mental toughness development provide a clear step-by-step procedure of how mental toughness training programs can be devised. These should initially concentrate on building a belief of superiority and focus on skill mastery (Feltz, Short, & Sullivan, 2008), enjoyment, and competitiveness within a training regime that is both disciplined and structured. Additionally, providing expert coaching and role models for inspiration can assist in motivating the performer to achieve success in training and competitions/games. Finally, experience of international competitions/games, and a social support network that includes sporting and non-sporting individuals, may afford performers with the means to extract knowledge needed to develop their mental toughness to their highest levels.

The experience of critical incidents were found to have a powerful influence on the development of mental toughness in this study. Specifically, perceived positive and negative critical incidents acted as catalysts in cultivating mental toughness throughout all three developmental phases (initial involvement to intermediate level, intermediate to elite level, elite to Olympic/World Champion status). Positive critical incidents included: recognition of talent/potential by respected individuals; being selected for national squads/teams; winning significant competitions/games, and beating respected opponents. These incidents enhanced levels of belief and motivation by providing the encouragement and inspiration that goals and sporting potential were achievable. Interestingly, self-confidence and motivation have been frequently attributed to development of expertise in sport (e.g., Gould et al., 2002).
Negative critical incidents such as: being bullied at school; parental divorce; being involved in a car accident; and serious illness/death of a family member or close friend, resulted in a reappraisal of focus and life priorities. There incidents influenced mental toughness in two ways: (a) sport was viewed as “an escape” from such negative experiences and resulted in an increased focus and prioritization of goals in training and competition, and (b) they were perceived to increase control and focus on achieving long-term goals by enabling the performer to develop the necessary perspective with regard to life and sport (Botterill, Patrick, & Sawatzky, 1996; Durand-Bush & Salmela, 2002; Orlick, 2000).

While it would be unethical to try to influence or control such negative life experiences, knowledge of how to handle these situations, and what strategies and environments are necessary to assist mental toughness development would be of great benefit to sport psychologists, coaches, and parents. Previous research has indicated the importance of exploring critical incidents or ‘periodic incidents’ in relation to the development of experience (Côté et al., 2003), experience and its relationship with competitive anxiety (Hanton et al., 2007), and the development of mental toughness (Connaughton et al., 2008). While perceived critical incidents were not directly investigated, Gould et al. found that both direct (teaching or emphasizing certain psychological lessons) and indirect (unknowingly creating certain psychological environments) affects were involved in the development of Olympic Champions. Perceived critical incidents may assist in creating such psychological environments that are necessary for mental toughness development, and this warrants future investigation.

Findings from this investigation supported the contention that, once acquired, mental toughness levels can fluctuate and must be maintained (cf. Connaughton et al., 2008). Reductions in mental toughness levels had a negative affect on belief and focus and were attributed to: a lack of new challenges; injuries; and prioritization of relationships, family,
and career over sport. Supporting the findings of Connaughton et al., the maintenance of mental toughness was achieved by maintaining the correct balance with regard to life and sport, and a strong support network inclusive of sporting (e.g., coaches, team mates, sport psychologists) and non-sporting (e.g., friends, parents) individuals. In addition, this study extends previous research by suggesting that, following the achievement of an Olympic or World Championship title, new and challenging goals need to be set in order to sustain the strong desire and motivation to succeed and the high levels of focus necessary to maintain mental toughness levels.

The interview guide for coaches and sport psychologists did not include career phases, as none of the coaches or sport psychologists had worked with superelite performers during the initial involvement to intermediate level, or the intermediate to elite level career phases. Therefore, future research should address the experiences of those coaches and sport psychologists who have worked with mentally tough performers throughout their entire careers. However, the coaches’ and sport psychologists’ explanations confirmed and, to some extent, triangulated the influences and progressions of the development and maintenance of mental toughness. Findings revealed that the development of mental toughness, to levels perceived high enough to achieve the status of Olympic/World Champion, took place over a long time period, was influenced by a variety of individuals (parents, coaches, family, friends) and factors (environment, critical incidents), and occurred in a specific dimensional order (cf. Whitehead, 1929). In addition to this, recent research has highlighted the influence of individuals and factors on mental toughness development. Specifically, Bull et al. (2005) suggested the interaction of a performer’s environment, character, attitudes, and thinking as a possible means of developing mental toughness, while Thelwell et al. (2005) indicated that performers may develop and enhance mental toughness from the experiences of the varying environments they are placed in throughout their early career stages. As a result, the
experiences and perceptions of performers, and coaches and sport psychologists in this study were combined, and all 11 participants were re-interviewed to confirm and verify the proposed findings. Specifically, the order and interaction of framework dimensions in the development and maintenance of mental toughness, and the processes by which the 13 subcomponents were developed and maintained.

*Dimensional Interaction and Subcomponent Development and Maintenance*

Participants confirmed that mental toughness was acquired to its highest level over three distinct developmental stages. Dimensions interacted to influence the development and enhancement of all 13 subcomponents, and were viewed to develop in the dimensional order of attitude/mindset, training, competition, and post-competition. Stage 1 involved the possession of low levels of the subcomponents, belief and focus (attitude/mindset), and these were used to develop the subcomponents within the training dimension. Attitude/mindset was seen as the foundation for mental toughness development, and acquiring the subcomponents within the training dimension, in conjunction with successes in training (e.g., completing new skills, achieving goals) further enhanced levels of belief and focus (attitude/mindset). Perceptions regarding the development and maintenance of the 13 subcomponents confirmed this. Effective communication and education, with regard to the correct technique and execution of skills, encouraging a positive group atmosphere, effective goal-setting, a good work ethic, and creating achievable challenges, enabled the development and enhancement of the three subcomponents within the training dimension: using long-term goals as the source of motivation, controlling the environment, and pushing yourself to the limit. Development and maintenance of focus and belief (attitude/mindset) was influenced by an ability to control focus, an awareness in training, and performance accomplishments (see Feltz et al., 2008). Therefore, young performers should be encouraged to engage in sporting activities as a means of skill accomplishment, socialization, enjoyment, and to develop a sense of discipline
and work ethic, while parents and coaches could assist in creating the correct motivational environment for these attributes to be acquired. Indeed, Csikszentmihalyi et al. (1993) highlighted intrinsic motivation and enjoyment of activities while working hard to achieve goals as an important factor in talent development, and that teenagers cannot develop talent unless it is valued by society, and recognized and nurtured by parents, teachers, and coaches. Additionally, Gould et al. (2002) found that coaches and parents were the primary influence on the psychological development of athletes, instilling hard work and discipline, having fun, proving encouragement and support, and directly teaching or fostering mental skills. Since parents and coaches play such a crucial role, more research should focus on uncovering exactly what it is they do to support, motivate, and guide athletes in their development.

Development stage two involved the acquisition of subcomponents within the competition dimension, as well as the continued enhancement of attitude/mindset and training dimensions. Using and adapting already acquired attitude/mindset and training subcomponents in competitive settings, assisted in the development of four competition subcomponents: belief, staying focus, regulating performance, and controlling the environment. The remaining two subcomponents, handling pressure, and awareness and control of thoughts and feelings, were developed as a result of competitive experience, and education. Overall, skill mastery, a desire to be the best, expert coaching, competitiveness, successes in training and competitions, and a disciplined and structured training environment, would appear to be critical in this developmental stage. Supporting this contention, Csikszentmihalyi et al. (1993) highlighted discipline as essential in the acquisition of skills necessary for superior performance, and the ability to focus attention, commitment to the pursuit of excellence, and the setting of practice goals have been highlighted as variables that successful athletes possess (Orlick & Partington, 1988). Coaches, sport psychologists, and older, more experienced performers were also believed to facilitate the development of the
competition subcomponents through advice and education regarding strategies: to recognize and exert control over inappropriate thoughts and feelings, how to handle pressure in competitions, and how to be successful. This highlights the importance of using basic and advanced psychological skills and strategies (e.g., goal setting, imagery, concentration and thought stopping, cognitive restructuring, and simulation training) to enhance the specific subcomponents in the overall development and maintenance of mental toughness (Connaughton et al., 2008).

The final stage, development stage 3, involved the acquisition of the post-competition subcomponents as well as further enhancement of the already established dimensions: attitude/mindset, training, and competition. Increased experience of competing at an international level, education and advice from peers, coaches, and sport psychologists, the use of mental skills, the development of pre-race routines, a good social support network, attaining the perceived correct balance in life, and reflective practice, underpinned this stage. This stage also best described the maintenance of mental toughness, which followed the same path as development stage 3. However, as all subcomponents were already developed, this process of interaction occurred in a much shorter time period. While previous research has highlighted these characteristics as essential in investigating peak performance (Williams & Krane, 2001), the development of Olympic Champions (Gould et al., 2002), facilitative interpretations of competitive anxiety (Hanton & Jones, 1999), and mental toughness (Connaughton et al., 2008), this study provided a clear understanding of how each specific characteristic influenced the development and maintenance of mental toughness.

Hanton et al. (2007) suggested that gaining experience through reflective practice enabled the familiarization of competition-specific symptoms which were then rationalized to cope more positively. Furthermore, Ghaye and Ghaye, (1998) suggested that being involved in a process of reflection can empower the individual to become self-aware and implement
change. As post-competition analysis and reflection appears to be vital in the achievement of peak levels of mental toughness, coaches and performers would be wise to formally include it in their training programs. Also notable in this study was the use of mental skills in the development and maintenance of mental toughness. Previous mental toughness literature and anecdotal accounts have linked mental toughness development with a constellation of mental skills (e.g., Bull, Albinson, & Shambrook, 1996; Goldberg, 1998; Loehr, 1986). The findings from this study confirm that the use of mental skills are necessary to enhance mental toughness levels, once all dimensions are acquired. Specifically, once all subcomponents were developed, mental skills enabled the performer to increase their mental toughness subcomponents to what was perceived as high levels, and were also essential in maintaining mental toughness levels. Future research should include assessing the role and contribution of education, and how key individuals within the performer’s socialization network (e.g., parents, coaches, sporting and non-sporting friends) foster the correct life/sport balance in developing and maintaining mental toughness.

Once high levels of mental toughness are attained, they must be actively maintained through regular deliberate practice or levels will diminish. Intriguingly, the maintenance of the 13 subcomponents was believed to follow the same process as development, although in a shorter time period. Furthermore, reductions in and maintenance of, mental toughness levels appear to occur in the same dimensional order as the development of mental toughness, namely, attitude/mindset, training, competition, post-competition (although, once again, in a shorter time period). This supports Krampe and Ericsson’s (1996) contention that the amount of deliberate practice required to maintain skills that have already been acquired is less than the amount required to initially acquire them. Additionally, it highlights the importance of the attitude/mindset dimension in the development and maintenance of mental toughness. Specifically, attitude/mindset was seen as the foundation for initial development and
subsequent maintenance of a performer’s mental toughness levels. Reductions were also believed to occur in this dimension first, which then impacted negatively upon the other three dimensions. Mental skills programs and strategies therefore, should be devised to create the high levels of focus and belief necessary to ensure the development and maintenance of attitude/mindset dimension. Goals setting, imagery, simulation training, a strong and wide ranging social support network, and reflective practice would appear to facilitate this. Recent research suggests that goal setting and the use of imagery can enhance levels of attentional focus, concentration self-confidence, and motivation (e.g., Gould, 2006; Short, Ross-Stewart, & Monsma, 2006; Wadey & Hanton, in press). However, future research should address the impact of specific mental skills and strategies on the development and maintenance of mental toughness.

While all four dimensions were essential to possess, two important distinctions were highlighted by all participants: (a) attitude/mindset was believed to be the foundation for and most important dimension in relation to development and maintenance of mental toughness; and (b) the competition dimension was seen as the end product or outcome, and the most important dimension to overall mental toughness. In other words, all the dimensions were developed and enhanced in order to increase the competition dimension to its highest level, supporting the outcome component of mental toughness (Jones et al., 2002, 2007; Thelwell et al., 2005).

Summary

This study provides a clear description of the processes and mechanisms involved in the development and maintenance of mental toughness. While previous research (i.e., Connaughton et al., 2008) investigated mental toughness development and maintenance based on Jones et al.’s (2002) definition and 12 attributes, this study was the first to investigate the development and maintenance of mental toughness based on Jones et al.’s
(2007) framework. This contributed to a more comprehensive understanding of the precise mechanisms involved in the development and maintenance of mental toughness. Additionally, the proposed stages of development/maintenance, and the processes and interaction of subcomponents and dimensions, provide many practical applications for performers, coaches, and sport psychologists trying to devise mental toughness training programs. However, the overriding area in need of development focuses around measurement. A valid and reliable measure of mental toughness is necessary for the identification of mental toughness levels in individuals. This would allow for interventions to be designed to address specific weaknesses, or subcomponent/dimensions that require developing or enhancing. It would also allow for the outcomes and efficacy of such interventions to be assessed and comparisons made between groups (e.g., skill level, gender). The richness of the data that has emerged from this study suggests a multitude of underlying mechanisms working collectively to influence the development and maintenance of mental toughness, and the questions that have emerged from the findings warrant attention.
References


CHAPTER 6

GENERAL DISCUSSION AND CONCLUSIONS
Introduction

The purpose of the final chapter is to draw together the findings and present the implications of this program of research. The chapter is organized into six sections that provide: (a) a summary of the aims and key findings of each study, (b) a discussion of the conceptual issues that emanated from each study and overall thesis, (c) the practical implications derived from this program of research, (d) the strengths and limitations, (e) future research directions; and finally, (f) a conclusion that draws together the central tenets of the thesis.

Summary

The central purpose of this thesis was to examine in detail the concept of mental toughness. At the point of embarking upon this research program, no accepted definition of mental toughness existed, and the literature base was dominated by anecdotal accounts. As a result, there was a general confusion and conceptual ambiguity with regard to mental toughness. Consequently, in order to understand mental toughness, it was necessary to develop a research program that facilitated an in-depth understanding of what mental toughness is, what it is made-up of, and how it is developed and maintained. To achieve this overall aim, the present program of research sought to define mental toughness and identify the essential characteristics of the ideal mentally tough performer (Study 1), develop a framework of mental toughness (Study 2), and finally, identify the mechanisms by which mental toughness is developed and maintained in sports performers (Study 3). The following sections provide a recap of the three studies that comprise this thesis.

Study 1: What is this thing called mental toughness? An investigation of elite sport performers. In order to address the limitations of the mental toughness literature, Study 1 sought to define mental toughness and establish the essential attributes which underpin the mentally tough performer. Participants were recruited via purposive sampling from a cohort
of 10 elite performers who had experience of competing at full international level. Semi-structured interviews were conducted using an interview guide designed for the purpose of the study. As a result of inductive analysis, a definition of mental toughness was derived that emphasized both general and specific dimensions, and 12 attributes that were considered crucial and fundamental to the make-up of mental toughness. The 12 attributes identified reflected: self-belief, desire and motivation, performance and lifestyle-related focus, dealing with external competition-related pressure, coping with internal pressure, and dealing with physical and emotional pain. Participants subsequently rated the definition and rank-ordered the attributes of mental toughness. A key feature of the definition and attributes was the continual reference to an outcome component, supporting the requirement to examine mental toughness in those performers who have achieved ultimate success in their respective disciplines (i.e., Olympic or World Champions). Findings also suggested that certain individuals, who have worked with performers of this quality, may contribute to a more lucid understanding of mental toughness (coaches and sport psychologists that had coached or consulted with such performers). This provided the rationale for Study 2.

**Study 2: A framework of mental toughness in the world’s best performers.** Based on the findings of Study 1 and the recommendations forwarded by Bull, Shambrook, James, and Brooks (2005) and Thelwell, Weston, and Greenlees (2005), the purpose of Study 2 was to address three fundamental issues: the definition of mental toughness, the identification of its essential attributes, and the development of a framework of mental toughness. Participants comprised eight Olympic or World Champions, and three coaches and four sport psychologists from a broad range of sports. Findings confirmed the definition of mental toughness but this time identified 30 distinct attributes that formed the basis for the construction of a framework that contained four dimensions and 13 subcomponents. The dimension, attitude/mindset, was general in nature, while the remaining three dimensions
(training, competition, and post-competition) related to characteristics of mental toughness at specific time phases. The dimension attitude/mindset contained two subcomponents (belief and focus); training contained three subcomponents (using long-term goals as a source of motivation, controlling the environment, and pushing yourself to the limit); competition, six subcomponents (handling pressure, belief, regulating performance, staying focused, awareness and control of thoughts and feelings, and controlling the environment); and the post-competition dimension, two subcomponents (handling failure and handling success). Participants rated the definition, and confirmed the structure of the framework. Each participant subsequently rank-ordered the attributes within each of the four dimensions. The definition and attributes supported the existence of an outcome component to mental toughness (i.e., success, winning), while the framework clearly denoted the make-up of mental toughness, and the precise settings where each attribute is applicable. Finally, the framework provided the basis for disseminating how this multifaceted construct is developed and maintained in superelite performers (i.e., Study 3).

Study 3: The development and maintenance of mental toughness in the world's best performers. This study was underpinned by the framework of mental toughness derived from Study 2 and previous research investigating the development and maintenance of specific psychological characteristics in high level performers. The purpose of the study was twofold: Part 1 investigated the development and maintenance of mental toughness from the separate perspectives of superelite performers, and coaches and sport psychologists who have worked with such high achieving individuals; and Part 2 clarified how the framework dimensions interacted in the development and maintenance of mental toughness, and the processes by which the 13 subcomponents are developed and maintained. Findings from Part 1 revealed four distinct career phases, three in which development occurred (initial involvement to intermediate level, intermediate to elite level, elite to Olympic/World Champion status), and
the fourth career phase which related to maintenance. The development of mental toughness took place over a long time period, was influenced by a variety of individuals and factors, and once acquired, needed to be maintained. The main influences during initial involvement to intermediate level were being competitive and engaging in activities for enjoyment, socialization, and skill mastery. The intermediate to elite level phase focused on observing and learning from role models, discipline, structure, and what was necessary in order to achieve success in training (e.g., technical mastery, technique, work ethic). During the elite to Olympic/World Champion status phase, development was affected by experience of international competitions, an intense desire to win and upstage world class performers, a wide-ranging social support network, and gaining knowledge from respected individuals. Perceived positive and negative critical incidents acted as catalysts in cultivating mental toughness throughout all three developmental phases. Maintenance was influenced by sustaining the correct balance with regard to sport and life, setting new and challenging goals, and a strong support network (sporting and non-sporting). Finally, the experiences of all participants (performers and coaches/sport psychologists) suggested the development and maintenance of mental toughness occurred in a specific dimensional order, which provided the rationale for Part 2 of this study.

The findings of Part 1 were used to devise a model of the order and interaction of framework dimensions, and the processes involved in the development and maintenance of the 13 subcomponents. Participants were then re-interviewed to confirm their accuracy. Findings corroborated the proposed order and interaction of dimensions in the development and maintenance of mental toughness. Specifically, development occurred over three distinct developmental stages, and in the dimensional order of: attitude/mindset, training, competition, and post-competition. Reductions in, and the maintenance of mental toughness, were believed to follow the same process as development, although in a shorter time period.
Finally, once developed, mental skills enabled the enhancement of subcomponents to their optimum levels, and were considered essential in maintaining mental toughness levels.

**Conceptual Issues**

This section provides an overview of the conceptual issues emanating from the thesis. Specifically, issues that related to the definition and attributes within Study 1, the verification of the definition and development of a framework in Study 2, and the underlying mechanisms and processes involved in the development and maintenance of mental toughness in Study 3.

The review of the mental toughness literature contained in Chapter 2, highlighted a number of important conceptual issues: (a) the majority of studies in the literature were based on anecdotal evidence rather than specific empirical investigations which aimed to define and understand mental toughness, (b) the resulting conceptual confusion led to positive psychological characteristics being incorrectly labeled as mental toughness with no precise or widely accepted definition of mental toughness; and finally, (c) empirical studies that investigated mental toughness via quantitative means used conceptually and psychometrically limited measures such as the Psychological Performance Inventory (PPI: Loehr, 1986) and MT48 (Clough, Earle, & Sewell, 2002). The lack of conceptually underpinned and psychometrically derived measures, along with the need to gain an in-depth understanding of mental toughness, resulted in the adoption of a qualitative approach to examine mental toughness in Study 1.

**Study 1.** Study 1 of this thesis was the first investigation to distinguish between what mental toughness is, and the attributes required to be mentally tough. The process of building upon, and developing the findings from each interview, led to an inductively derived definition of mental toughness and its component parts. Inherent within the definition was the notion that athletes can possess a ‘natural’ mental toughness that they bring with them to the sport environment, as well as the possibility that mental toughness can be developed over
time. The definition of mental toughness also made the distinction between general and specific dimensions, emphasizing both competition and other factors required to attain high levels of performance (e.g., training and general lifestyle). The 12 attributes related to self-belief, desire and motivation, performance focus and lifestyle-related factors, dealing with pressure, anxiety, and pain/hardship. The specific focus on competition and performing under pressure, suggests mentally tough athletes are consistently able to exhibit high levels of motivation and confidence, and control their focus and attention, in response to stressful situations. These findings relate to previous anecdotal accounts and explanations that emphasized the importance of possessing superior mental skills and the ability to cope with competition pressure (e.g., Bull, Albinson, & Shambrook, 1996; Goldberg, 1998; Loehr, 1986; Williams, 1988). While it is recognized that psychological skills are important in acquiring mental toughness, Study 1 was the first to specifically address, and rank-order, the attributes of mental toughness in a systematic, coherent, and detailed manner.

A further important feature of the definition is the reference to an outcome dimension to mental toughness. Specifically, 'psychological edge', 'cope better than your opponents', and 'be more consistent and better than your opponents...' all involve a comparison with competitors which, given the almost negligible physical and technical skill level differences in the most elite athletes, may contribute to consistently successful outcomes. The 12 attributes identified also made continual reference to an outcome dimension which suggested that mental toughness is about achieving or successfully completing an action rather than having the ability or potential to achieve or complete an action. This implies that the true test of mental toughness is achieving success (i.e., winning). While all of the attributes identified were considered essential to being mentally tough, the results of the ranking procedure suggested that some attributes were more important than others. Specifically, self-belief, and the perceived magnitude of it ('unshakable'), motivation in the form of desire and
determination, and factors associated with coping with the stress of competition emerged as being crucial to mental toughness. Finally, the findings that emerged from Study 1 represented a starting point for the empirical investigation of mental toughness. Indeed, two recent studies addressed some of its recommendations within the sports of soccer (Thelwell et al., 2005) and cricket (Bull et al., 2005).

Thelwell et al. (2005) examined mental toughness with soccer players and supported the definition proposed in Study 1, suggesting that, irrespective of sport, mental toughness can be defined in a similar manner. The attributes proposed also resembled many of those identified in Study 1, with Thelwell and colleagues suggesting that players who demonstrate high levels of self-belief, and an ability to cope with the internal and external pressure of elite level competition, tended to be perceived as mentally tough. Adopting similar procedures, Bull et al. (2005) investigated mental toughness in cricket and presented 20 global themes that were suggested to aid the development of mental toughness and highlighted the characteristics of a mentally tough cricketer. The global themes were organized under five general dimensions to help clarify their meaning: developmental factors, personal responsibility, dedication and commitment, belief, and coping with pressure. Although Bull et al. compared the global themes with the attributes identified in Study 1 (i.e., self-belief, desire/motivation, dealing with pressure and anxiety, focus, and pain/hardship), it was unclear which of the global themes related to development, and which related to the specific characteristics of mental toughness in cricket. Overall, both Thelwell et al. and Bull et al. confirmed the definition of mental toughness and proposed attributes that, although specific to the sports involved, were comparable to the findings of Study 1 of this thesis. This suggests that although mental toughness may have slight variants in specific sports, a general template or framework could be developed irrespective of sport.
Study 2. Study 1, as well as the recent studies by Bull et al. (2005) and Thelwell et al. (2005), were based on the assumption that the person being interviewed had an in-depth knowledge of mental toughness. However, the outcome dimension contained within the definition and attributes of Study 1, suggested that athletes who have achieved ultimate success in their respective sports (i.e., Olympic or World Champion) may have a more fine-grained insight in to the construct of mental toughness. Findings also indicated that those individuals who have worked closely alongside these athletes (i.e., coaches and sport psychologists), may contribute to a clearer insight into, and understanding of, mental toughness. Therefore, Study 2 sought to address these challenges in order to help create a more comprehensive understanding of mental toughness.

Findings from Study 2 confirmed the definition as an accurate description of mental toughness. The definition comprised two elements: a general element denoting that mentally tough performers were able to successfully cope and balance their social and personal life with the very specific and unique demands of a modern-day sporting career, and a specific element that described how these athletes produce consistently high-level of performance through the use of superior mental skills and psychological strategies. Once again, there were some parallels with other mental-toughness definitions (e.g., Bull et al., 1996; Goldberg, 1998; Gould, Hodge, Peterson, & Petlichkoff, 1987). However, Study 1’s definition uniquely highlighted the use of specific mental skills combined with a general attitude that assisted in demonstrating mental toughness. Furthermore, the definition purported the possession of a natural mental toughness that was then developed throughout the performer’s career. It was also suggested that mental toughness could fluctuate over time indicating the need to continually attend to mental toughness levels throughout an athlete’s sporting career.

The identification of the key underpinning attributes of mental toughness revealed some interesting differences between Studies 1 and 2. Both groups agreed on the definition of
mental toughness; however, there were considerable differences with respect to the level of
detail and understanding reported by the participants in Study 2. Specifically, the superelite
participants in Study 2 identified 30 attributes, compared to the 12 attributes in Study 1,
thereby displaying a greater insight into and understanding of the precise make-up of mental
toughness. The development of a framework of mental toughness, containing a general
dimension (attitude/mindset) and three time-specific dimensions (training, competition, post-
competition), supported the distinction of general and specific elements within the definition.
It also increased understanding of mental toughness by providing not only a clear description
of its make-up, but the precise settings in which each separate attribute is necessary. The
categorization of the 30 attributes into subcomponents highlighted specific aspects that must
be achieved in order to reach a state of mental toughness within each dimension. For
example: the attitude/mindset attributes described how the performer achieves and maintains
the belief and focus necessary to possess the correct mental-toughness attitude/mindset; while
the subcomponents in the three time-specific dimensions explained what mental skills and
strategies performers must master in order to achieve and maintain mental-toughness in
training, competition, and post-competition. Interestingly, the proposed attributes and
characteristics identified in Study 1 and by Thelwell et al. (2005) can be categorized into the
subcomponents of the framework of mental toughness (Study 2). Although tentative, this
suggests that the framework may be used as a general template for understanding mental
toughness, irrespective of sport and skill level. Finally, the development of the framework,
presented in Figure 1, could significantly contribute to the exploration of the mechanisms by
which mental toughness is developed and maintained, specifically in relation to the four
dimensions and 13 subcomponents.
MENTAL TOUGHNESS

## ATTITUDE / MINDSET

<table>
<thead>
<tr>
<th>Belief</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; Having an unshakable self-belief as a result of total awareness of how you got to where you are now.</td>
<td>&gt; Refusing to be swayed by short-term gains (financial, performance) that will jeopardize the achievement of long-term goals.</td>
</tr>
<tr>
<td>&gt; Having an inner arrogance which makes you believe that you can achieve anything you set your mind to.</td>
<td>&gt; Ensuring that achievement of your sport’s goal is the number one priority in your life.</td>
</tr>
<tr>
<td>&gt; Having the belief that you can punch through any obstacle people put in your way.</td>
<td>&gt; Recognizing the importance of knowing when to switch on &amp; off from your sport.</td>
</tr>
<tr>
<td>&gt; Believing that your desire or hunger will ultimately result in you fulfilling your potential.</td>
<td></td>
</tr>
</tbody>
</table>

## TRAINING

<table>
<thead>
<tr>
<th>Using long-term goals as the source of Motivation</th>
<th>Controlling the Environment</th>
<th>Pushing Yourself to the Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; When training gets tough (physically &amp; mentally) because things are not going your way, keeping yourself going by reminding yourself of your goals and aspirations and why you’re putting yourself through it.</td>
<td>&gt; Remaining in control and not controlled.</td>
<td>&gt; Loving the bits of training that hurt.</td>
</tr>
<tr>
<td>&gt; Having the patience, discipline &amp; self-control with the required training for each specific developmental stage to allow you to reach your full potential.</td>
<td>&gt; Using all aspects of a very difficult training environment to your advantage.</td>
<td>&gt; Thriving on opportunities to beat other people in training.</td>
</tr>
</tbody>
</table>

## COMPETITION

<table>
<thead>
<tr>
<th>Belief</th>
<th>Staying Focused</th>
<th>Regulating Performance</th>
<th>Handling Pressure</th>
<th>Awareness and Control of Thoughts &amp; Feelings</th>
<th>Controlling the Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; Total commitment to your performance goal until every possible opportunity of success has passed.</td>
<td>&gt; Totally focusing on the job in hand in the face of distraction.</td>
<td>&gt; Having a killer instinct to capitalize on the moment when you know you can win.</td>
<td>&gt; Loving the pressure of competition.</td>
<td>&gt; Being acutely aware of any inappropriate thoughts and feelings, and changing them to help perform optimally.</td>
<td>&gt; Using all aspects of a very difficult competition environment to your advantage.</td>
</tr>
<tr>
<td>&gt; Not being fazed by making mistakes and then coming back from them.</td>
<td>&gt; Remaining committed to a self-absorbed focus despite external distractions.</td>
<td>&gt; Raising your performance ‘up a gear’ when it matters most.</td>
<td>&gt; Adapting to and coping with any change / distraction / threat under pressure.</td>
<td></td>
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<tr>
<td>&gt; In certain performances, remaining focused on processes and not solely outcomes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>&gt; Making the correct decisions and choosing the right options that secure optimal performance under conditions of extreme pressure and ambiguity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; Coping with and channeling anxiety in pressure situations.</td>
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</table>

Figure 1: Mental Toughness Framework
Study 3. Study 3 investigated the development and maintenance of mental toughness based on the framework dimensions and subcomponents devised in Study 2, and previous research that investigated the development and maintenance of specific psychological characteristics in superior athletes (e.g., Durand-Bush & Salmela, 2002; Gould, Dieffenbach, & Moffett, 2002). A data-rich participant sample was recruited to address the recommendations from Studies 1 and 2 (i.e., superelite athletes, coaches, and sport psychologists).

Findings from Study 3 (Part 1) revealed the development of mental toughness took place over a long period of time, and was influenced by a variety of individuals (e.g., parents, coaches, family, close friends) and contextual factors (e.g., environment, critical incidents). Performers’ experiences of mental toughness development progressed through four distinct career phases: three developmental phases, initial involvement to intermediate level, intermediate to elite level, elite to Olympic/World Champion status; and one maintenance phase (cf. Bloom, 1985; Côté, Baker, & Abernethy, 2003; Csikszentmihalyi, Rathunde, Whalen, & Wong, 1993; Durand-Bush & Salmela, 2002; Gould et al., 2002). The initial involvement to intermediate level phase was affected by competitiveness, enjoyment, socialization, and skill mastery, with the intermediate to elite level phase characterized by technical mastery, technique, work ethic, discipline and structure in training, and observing and learning from role models (e.g., coaches and elite performers). The elite to Olympic/World Champion phase was influenced by experience of international competitions, an intense desire to win and beat world class performers, a wide-ranging social support network, and gaining knowledge from a variety of respected individuals (e.g., coaches, competitors, sport psychologists). Finally, maintenance of mental toughness was achieved by retaining the correct balance of life and sport, setting new and challenging goals in order to
maintain a strong desire and motivation to succeed, sustaining high levels of focus, and having access to a strong sporting and non-sporting support network.

Perceived critical incidents have been suggested to affect developmental characteristics in performers (e.g., Connaughton, Wadey, Hanton, & Jones, 2008; Côté et al., 2003), and were found to be an important influence on the development of mental toughness in Study 3. Both positive and negative perceived critical incidents were found to act as catalysts in cultivating mental toughness by: enhancing belief and motivation, increasing focus and prioritization of goals, and increasing control via the development of the necessary perspective with regard to life and sport. Findings also supported the contention that, once acquired, mental toughness levels can fluctuate and must be maintained. Specifically, reductions in mental toughness levels were attributed to injuries, a perception of a lack of new challenges, and prioritization of relationships, family, and career over commitment to sport. Overall, the findings of performers, coaches and sport psychologists resulted in a proposed model of mental toughness, and participants were re-interviewed to confirm the accuracy of: (a) the order and interaction of framework dimensions in the development and maintenance of mental toughness, and, (b) the processes of subcomponent development and maintenance.

In the second part of Study 3, participants confirmed that mental toughness was developed to its highest level over three distinct developmental stages, and in the dimensional order of, attitude/mindset, training, competition, and post-competition. Specifically, stage one involved using belief and focus to develop the attributes within the training dimension, which further impacted on the enhancement of attitude/mindset. Stage two initiated the development of attributes within the competition dimension, by adapting already acquired attitude/mindset and training attributes and subcomponents in competitive settings. The final stage (Stage 3) involved the acquisition of the post-competition dimension, as well as further enhancing the
attitude/mindset, training, and competition dimensions. Overall, the use of basic and advanced psychological skills and strategies, good communication and education, encouraging a positive group atmosphere, a wide-ranging social support network, a hard work ethic, and experience of competing at an international level, played crucial roles in the development and maintenance of mental toughness.

The intuitive appeal, and anecdotal accounts of the link between mental toughness development and a constellation of mental skills, appears to have been partially correct (e.g., Bull et al., 1996; Goldberg, 1998; Loehr, 1986). While, only one small part of the overall conceptualization, the findings from Study 3 do suggest that the use of mental skills were necessary in the development and maintenance of mental toughness, but only after all dimensions and subcomponents were acquired. The maintenance of mental toughness was also found to occur in the same dimensional order as development, but over a shorter time period and through regular deliberate practice (cf. Krampe & Ericsson, 1996). Interestingly, the attitude/mindset dimension was seen as the foundation for mental toughness development, with reductions in mental toughness occurring in the attitude/mindset dimension first. This decline then negatively impacted upon the other three dimensions. Additionally, the competition dimension was perceived as the most important dimension to overall mental toughness. It was described as the ‘observable end product’ of mental toughness, and all subcomponents and dimensions were developed and enhanced in order to optimize the competition subcomponents to their highest levels. This provides further support for the outcome dimension to mental toughness proposed in Studies 1 and 2, and Thelwell et al. (2005).

Summary of conceptual issues in thesis

This research program emanated from the need to gain a thorough understanding of mental toughness. The literature base was replete with anecdotal accounts and conceptual
misinterpretation that mistakenly associated the sole possession of psychological skills as evidence of mental toughness. The lack of understanding and confusion surrounding mental toughness was further impaired by researchers developing and then using inventories (i.e., the PPI and MT48) to measure mental toughness based on conceptually flawed research. For example, the PPI appeared to measure a collection of mental skills that were linked to a performer’s ideal performance state rather than mental toughness as well as lacking psychometric integrity. As a result there are issues surrounding its validity and reliability as measure of mental toughness. The MT48 was also found to be deficient with regard to its conceptualization and development. For instance, no rationale was provided for the conceptualization of hardiness and confidence into mental toughness. Accordingly, this thesis empirically investigated a precise definition of mental toughness and the identification of its component parts. Further, the findings led to the development of working framework of mental toughness and the explanation of the processes and mechanisms involved in the development and maintenance of mental toughness.

*Practical Implications*

A number of practical implications emerged from this program of research. They relate to the definition, the attributes and framework, and the development and maintenance of mental toughness. The implications of the research may be of particular use to athletes, coaches, and sport psychologists.

*Definition.* The definition contained the suggestion that athletes possess a ‘natural’ mental toughness that they bring to the sport environment. The identification of this ‘natural’ element in young talented performers may assist youth development and athlete talent identification programs. Research suggests that the possession of mental toughness leads to success and can be defined in a similar manner irrespective of sport (cf. Bull et al., 2005; Thelwell et al., 2005). This may help coaches identify mentally tough athletes from a variety
of sports. Additionally, the definition suggests that mental toughness can be developed, highlighting an important role for sport psychologists and their involvement with athletes and coaches at the different career stages. Specifically, teaching mental skills and strategies to enhance and optimize focus, confidence, and control in pressure situations is consistent with mentally tough behaviors and characteristics.

The distinction between general and specific dimensions of the definition emphasizes the need to deal with training and general lifestyle demands as well as aspects of competition. Therefore, viewing the athlete in a more holistic manner, and not just dealing with the specific sport issues may be of greater benefit to athletes at all levels. This would include balancing the demands of training and competition with every aspect of the performer’s social and personal life. Although speculative, mental toughness development may assist with this balance by enabling the performer to acknowledge and focus attention on the correct priorities for any given situation. According to the definition, mentally tough individuals produce more consistent high level performances via the use of superior mental skills and psychological strategies. For example, simulation training, via mental imagery or in actual simulated conditions, could be used to mimic the circumstances where performers can practice harnessing specific mental toughness characteristics, and encourage consistent and successful responses in competitions (e.g., the experience of performing under pressure). Although the lack of a measure of mental toughness prevents the development of precise interventions, mental skills training programs most likely to benefit performers developing mental toughness should include enhancing control of motivation, focus, confidence, and handling stress. Finally, the outcome dimension of the definition and attributes implies that mental toughness may be determined on the successful completion of an action rather than having the ability or potential to do so. Although anecdotal, performance successes (and
failures) that result from mental toughness training programs may assist coaches trying to determine the efficacy of the programs that they have implemented.

**Attributes and framework.** The development of the framework of mental toughness in Study 2 has the potential to facilitate sport psychologists, coaches, and performers in understanding the precise mechanisms required to achieve a level of mental toughness within each dimension and subcomponent. This knowledge, in conjunction with the process of performance profiling (cf. Butler & Hardy, 1992; Kelly, 1955), may assist in the identification of strengths and weaknesses that performers possess in relation to mental toughness (e.g., how mentally tough performers achieve their goals, and how they handle the pressures, successes, and failures associated with competing). Although tentative, this could assist in providing direction, for career planning, and mental skills training programs to counteract any identified weaknesses to further enhance any strengths within the appropriate dimensions and subcomponents.

The results of the ranking procedure in each dimension suggests, with caution, that some attributes might be more important than others, and this may be particularly relevant to differing variables, such as gender and sport type. In fact, minor variation was found with the definition and attributes of mental toughness in Study 2 when compared to the single sport studies conducted by Bull et al. (2005) and Thelwell et al. (2005).

**Development and maintenance.** Given that mental toughness was perceived to develop over a performer’s career, it would be advisable for performers to receive support and mental toughness training programs from an early age rather than just in the later stages of their sporting careers (cf. Connaughton et al., 2008). Additionally, coaches and sport psychologists should be aware of the factors that influence development within each specific career stage (e.g., initial involvement to intermediate level, intermediate to elite level, elite to Olympic/World Champion). In the early phase, young performers should be encouraged to
engage in sporting activities as a means of skill accomplishment, socialization, enjoyment, and to develop a sense of discipline and work ethic, while parents and coaches could assist in creating the correct motivational environment for these attributes to be acquired (cf. Connaughton et al., 2008; Durand-Bush & Salmela, 2002; Gould et al., 2002). In the intermediate to elite level phase, performers may benefit most from observing and learning from knowledgeable role models (e.g., expert coaches and older, elite performers), and a disciplined and structured training regime that focuses on what is necessary in order to achieve success in training (e.g., technical mastery, hard work ethic). Indeed, gaining knowledge from more experienced individuals has been documented in the development of a number of positive psychological qualities (Bloom, 1985; Connaughton et al., 2008; Durand-Bush & Salmela, 2002; Hanton & Jones, 1999; Gould et al., 2002). In the final developmental phase (i.e., elite to Olympic/World Champion status), sources such as, experience of international competitions, the use of psychological skills and strategies, and a wide-ranging social support network, are alleged to assist in the development and enhancement of mental toughness to its highest perceived levels. Overall, attitude/mindset was seen as the foundation for the development and maintenance of mental toughness, suggesting mental skills programs and strategies should incorporate the acquisition of high levels of focus and belief. Additionally, educating and providing exposure to a variety of situations and environments, would assist performers to acquire the experience necessary to develop mental toughness (Connaughton et al., 2008). Finally, Ghaye and Ghaye (1998) suggested that post-competition analysis and reflection empowers the individual to become self-aware and implement change. Therefore, formally including reflective practice in training programs would appear to be vital for the development of optimal levels of mental toughness.

With regard to the maintenance of mental toughness, the findings of Study 3 suggest that performers should: (a) develop strategies to achieve the correct balance with regard to
life and sport, (b) set new and challenging goals in order to sustain high levels of focus and the desire and motivation to succeed, and (c) develop a strong support network inclusive of sporting (e.g., coaches, team mates, sport psychologists) and non-sporting (e.g., friends, parents) individuals. Finally, the experience of critical incidents appears to help cultivate mental toughness throughout all developmental stages. While these incidents may be outside the control of the coach and sport psychologist, being able to recognize how and when these experiences occur would be of great use to coaches and sport psychologists trying to facilitate the enhancement of mental toughness.

Strengths and Limitations

A number of strengths and limitations exist in the present research project. The prolonged engagement with participants and the methods used (i.e., multiple interviews) allowed the author to develop a strong rapport with the performers, and enhanced the trustworthiness of the data. Although this contributed significantly to the time spent completing the research program, it provided the opportunity to clarify, revise, and discuss information proposed by all interviewees. It also ensured that all topics were covered comprehensively, including personal and sensitive issues. A combination of focus groups and individual interviews was deemed most suitable to stimulate an understanding and development of mental toughness, an approach that has been successfully employed in previous sport psychology research (e.g., Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999). The focus group allowed the individuals’ insights to be revealed and discussed, so that new perspectives and understanding of mental toughness emerged (cf. Rubin & Rubin, 1995). The information-rich knowledge that participants brought to the specific topic of mental toughness in this thesis was also viewed as strength. This particularly related to the inclusion of Olympic and World Champions, coaches, and sport psychologists in Studies 2 and 3. These participants provided unique perspectives about the factors that contributed to
becoming an Olympic/World Champion so achieving the broadest and most comprehensive view of mental toughness and its development.

While participants possessed exceptional sporting profiles, generalizing the findings would be inappropriate given the sample characteristics in each study. However, they are in line with several published sport psychology research papers (e.g., Durand-Bush & Salmela, 2002; Gould et al., 2002), and the research conducted by Bull et al. (2005) and Thelwell et al. (2005) supported the underlying tenets of the definition and attributes proposed in Study 1. In addition, while retrospective evaluation is a legitimate vehicle for obtaining information, attribution effects and memory bias must be considered when interpreting the results. Another limitation included the omission of coaches and sport psychologists from the focus group in Study 2. To address this, all participants, performers, coaches, and sport psychologists were given the opportunity to comment, in full, on the findings from the focus group. Finally, it is acknowledged that participants were not specifically selected for being mentally tough, because there is currently no valid measure of mental toughness to use for participant selection; however, all questions were asked in relation to participants’ experiences and perceptions of mental toughness, and its development and maintenance rather than solely performance achievement in competitive sport.

**Future Research Directions**

As a result of this research project, a number of recommendations are considered salient for future research. The first avenue for future research is the development of a measure of mental toughness. Over ten year’s ago, Shutz (1994) argued that a test should not be developed unless a clear need can be demonstrated, and researchers use a rigorous set of criteria in its development. The need for a sound measure of mental toughness has been documented within this thesis and elsewhere (e.g., Golby, Sheard, & Lavallee, 2003; Middleton et al., 2004). Indeed, the framework of mental toughness depicted in Study 2
provided detailed information on the qualities or characteristics of the mentally tough performer and could, therefore, underpin the development of a psychometrically derived measure of mental toughness. The attributes could be used to generate a pool of items under the four framework dimensions and 13 subcomponents. Following data collection from a sample of in excess of 500 performers, confirmatory factor analysis should then be conducted to examine the goodness of fit of the items under the deductive framework of mental toughness; that is, to confirm that the proposed items represented their respective subscales (e.g., see Jones, Lane, Bray, Uphill, & Catlin, 2005). Assuming acceptable factorial validity and internal consistency the new measure would then be tested for concurrent and construct validity. Specifically, this procedure would involve examining the relationship with other measures designed to measure one or more related subcomponents of mental toughness (e.g., the Dispositional Resilience Scale: Bartone, Ursano, Wright, & Ingraham, 1989; the modified Competitive State Anxiety Inventory-2: Jones & Swain, 1992; Martens, Burton, Vealey, Bump & Smith, 1990). Assuming the new inventory correlates with related components in other valid measures then examining the discriminative validity, for example between elite and nonelite performers, would be a logical step before embarking on subsequent research programs with the new inventory.

Once developed, a measure would facilitate cross-sectional comparisons of groups, as well as the predictive validity of the scale and athletes' performances. Talented but mentally weak performers could be identified to see what subcomponents or attributes require attention, and interventions could then be designed and implemented to facilitate the development of enhanced levels of mental toughness. The findings of Study 3 suggest that mental toughness interventions may function at two specific levels: (a) to facilitate the development of specific attributes and subcomponents and exposure to critical incidents throughout the identified career phases, and (b) to encourage the implementation of mental
toughness training programs which serve to enhance and maintain attributes once they have been acquired. Additionally, the importance of exploring critical incidents in the development of mental toughness was identified in Study 3, posing several questions in relation to: what constitutes a critical incident; the different types of critical incidents (positive and negative), their influence within career phases; and how critical incidents assist in creating the psychological environments that are necessary for mental toughness development. The result of the ranking procedure in Studies 1 and 2 tentatively suggests that some attributes might be more important to mental toughness than others, or that the importance of attributes in the framework might fluctuate with regard to variables such as gender or sport type; indeed, as alluded to minor variation was found with the definition and attributes of mental toughness in Study 1 compared with specific team-sports investigations (i.e., Bull et al., 2005; Thelwell et al., 2005). Also, there is a need to investigate possible differences between individual and team mental toughness, which has been found to be evident in research examining individual and collective efficacy (Bandura, 1997). All these areas require attention in future research.

Conclusion

The purpose of this thesis was to conduct an in-depth investigation of mental toughness. The program of research has resulted in a conceptually grounded definition of mental toughness that was verified by elite and superelite performers, and coaches and sport psychologists who have dedicated their lives to assisting performers achieve Olympic and World Champion status. The component make-up of mental toughness was also established, resulting in a working framework of mental toughness attributes. The framework allowed for a detailed examination of the processes and mechanisms involved in the development and maintenance of mental toughness. Finally, the author believes that this thesis has contributed to the empirical investigation of mental toughness, and provided conceptual and practical
implications for performers, coaches, and sport psychologists in the understanding and development/maintenance of mental toughness.


APPENDICES
APPENDIX 1

RESEARCH ETHICS APPLICATION
Applicants must answer all questions.

Type of work: Postgraduate Research Dissertation

1. Project title: An Examination of Mental Toughness in Competitive Sport
2. Principal Researcher: Declan Connaughton
3. Telephone No. 029-20416795
4. E-mail: DConnaughton@uwic.ac.uk
5. Degree Pathway (if applicable): Doctor of Philosophy (PhD)
6. Date project activity is to begin: February, 1999
7. Is this project supported by external funds? No

Tick appropriate boxes below:

1. Does your research involve any vulnerable populations? ☐ ☒
2. Does your research involve biomedical or clinical intervention? ☐ ☒
3. Does your research involve participant-deception? ☐ ☒
4. Does your research protect participant anonymity? ☒ ☐
5. Does your research investigate sensitive aspects of participant behaviour? ☐ ☒

Protocol Information
1. What you are going to ask your participants to do?
   Express their views and opinions on mental toughness and its development
2. What risks, if any, are entailed for participants?
   None
3. What benefits, if any, participants can expect?
   Feedback on the findings of this thesis
4. How will the identity of participants will be protected?
   All names and places, clubs, etc are omitted from the transcripts and quotations
5. Will a consent form be signed by participants, explaining
   1, 2, 3, 4 (above), and stating the right to withdraw at any time?
   Yes

I agree to conduct the research involving human subjects as presented in the Protocol or modifications to it and as approved by the supervisor or Research Ethics Subcommittee; to obtain and document informed consent and provide a copy of the Consent Form to each subject unless this is waived by the Subcommittee; to present any proposed modifications in the protocol to my supervisor for approval; to retain records for the mandated lengths of time; and to report to the Subcommittee any problems or injuries to subjects.

Signature of Principal Researcher: Declan Connaughton
Date: March, 1999
ACTION ON RESEARCH ETHICS APPLICATION

To: Declan Connaughton

Project title: An Examination of Mental Toughness in Competitive Sport

Period: from February, 1999 to February, 2008

ACTION:

√ Approved

O Cannot be approved as currently submitted (see comments overleaf)

O Sent to Sub-Committee for evaluation

UWIC Research Ethics Authorisation: - Dave Cobner

Date: March, 1999
APPENDIX 2

INTERVIEW GUIDE FOR STUDY 1
Interview Guide for Study 1

WHAT ARE THE QUALITIES OF THE “IDEAL MENTALLY TOUGH PERFORMER”.

Name: 
Participant #: 
Age: 
Sport: 
Best Achievement: 
Contact Address or Phone Number: 

Interview Date: 
Start Time: Finish Time: 

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SECTION 1:

INTRODUCTION (Not Recorded)

Hello, I'm Declan Connaughton from the School of Sport, Physical Education and Recreation, University of Wales Institute, Cardiff, UK. Thank you for agreeing to participate in this interview study. In this project I am talking to the elite performers about what characteristics or qualities the “Ideal Mentally Tough Performer” possesses.

The term ‘Mental Toughness’ is frequently used to describe individuals who excel in certain activities (e.g., sport). However, little is known about the actual make-up of ‘Mental Toughness’. Therefore, the purpose of this study is to try to identify the characteristics or qualities of the “Ideal Mentally Tough Performer” which may help explain what ‘Mental Toughness’ is.

CONFIDENTIALITY:

I would like to emphasise that all information regarding this interview will remain completely confidential. I may want to use your description of particular characteristics or qualities in order to illustrate important ideas, but these will remain strictly anonymous, and I will ensure that your identity is protected at all times. I am using audio recording equipment to make the profiling process more efficient and to get complete and accurate information. Recording this also allows for a typed transcript, which will be used for later scrutiny and reference.

The data collected in this study will be used in two ways: First, the information will be used for my Ph.D. research thesis. Second, the results will be published in scientific journals so that other sport scientists, coaches, and performers can benefit from the findings.
PARTICIPANTS RIGHTS

As a participant in this study you have several very definite rights. First, your participation in this interview is entirely voluntary, and you are free to decline to answer any questions or to stop the procedure at any point. There are no right or wrong answers to the questions that I will be asking. I want to learn and benefit from your experience and expertise so that I can better understand what the characteristics or qualities of the “Ideal Mentally Tough Performer” are. I hope, therefore, that you will answer the questions in a candid and straightforward way. If there are any questions you are not comfortable answering then feel free to decline, by simply stating “no comment”, and no further questions related to that topic will be asked. If you have any questions as we go along please ask (e.g., as in the case for clarification, if at any time you do not understand what I am asking).

ORIENTING INSTRUCTIONS:

I will be asking you about your personal views on what you think the characteristics or qualities of the “Ideal Mentally Tough Performer” are. The characteristics or qualities of this profile can be based on yourself, any individual you believe to be mentally tough, or even a combination of several individuals whom you feel have certain aspects (but possibly not all) of being mentally tough. Therefore, please feel free to draw on many varied experiences for your answers.

If you have problems finding the right words to describe certain qualities or characteristics, then please give examples and describe the whole situation or process to portray what you mean. Pauses are fine, however, please do not guess or tell me what you think I or others want to hear. At the end of the interview there will be an opportunity for you to add anything that you felt was important but not covered in the interview.
SECTION 2
In this section I am going to talk to you about what you think the characteristics or qualities of the “Ideal Mentally Tough Performer” are. This can be based on yourself, any individual, or certain aspects from different individuals. The result will be a comprehensive profile of what you believe to be the qualities or characteristics of the “Ideal Mentally Tough Performer”

• What is mental toughness?

• Can you define Mental Toughness?
  Probe: How would describe ‘Mental Toughness’?

  Need to reach a certain degree of consensus here

• In your own words can you list all of the qualities or characteristics of the “Ideal Mentally Tough Performer”?
  Probe: What qualities would the “Ideal Mentally Tough Performer” possess?

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SECTION 3

Each quality or characteristic that you proposed will now be discussed individually. Please feel free to describe what you mean by using examples and/or describing the situation.

- Tell me what you mean by that (i.e., Quality)?

  Probe: Can you give any examples?

SECTION 4

- Re-visit definition:

SECTION 5

Conclusion:

That just about raps up the interview /profile. However, before we finish, let me ask you some final questions.

1. How did you think the procedure went?
2. Did you feel that you could tell your story fully and in your own words?
3. Did we lead you or influence your response in any way?
4. Do you think we failed to discuss any important factors?
5. Do you think that there are any other qualities or characteristics of the “Ideal Mentally Tough Performer” that you could not describe?
6. Have you any comments or suggestions about the session today?

Once again thank you for helping out with this interview.
APPENDIX 3

COPY OF EXEMPLAR TRANSCRIPT STUDY 1

FOCUS GROUP INTERVIEW
Study 1 Focus Group Interview

Explanation of the interview procedure.

**Procedure for Interview:**

Focus group using 3 performers, taped using audio equipment probing the qualities of the “Ideal Mentally Tough Performer”.

1. Ask them to:
   - Define Mental Toughness.
   - Reach a certain degree of consensus.

2. Very formal profile – In their own words to come up with an exhaustive list of the characteristics or qualities the “Ideal Mentally Tough Performer” possesses.
   - Constructs written on a flip chart.
   - It must be in their own words (Personal Construct Theory).

3. Go through each construct that they proposed one by one and ask the following questions.
   - Tell me what you mean by that (term)? Get examples.
   - Were you born with it or has it been developed?

4. General question at end of interview:
   - Does mental toughness result in elite status or does reaching elite status result in mental toughness (Are they elite performers because they are mentally tough or vice versa?).

5. Interview taped and transcribed and this produces a list of constructs.

6. Dynamic building process – Repeat exact interview profile to other athletes and build on the list of constructs.

**Beginning of Focus group**

- Read purpose of study, confidentially, participant’s rights, orienting instructions, etc.

- Allow participants to familiarise themselves with their sporting past by talking about what it meant to them and how it effected their lifestyle and them as a person (not recorded).

- Interviewer: In this section I am going to talk to you about what you think the characteristics or qualities of the “Ideal Mentally Tough Performer” are. This can be based on yourself, any individual, or certain aspects from different individuals. The result will be a comprehensive profile of what you believe to be the qualities or characteristics of the “Ideal Mentally Tough Performer”. What is mental toughness?, we know but we are not really able to articulate it.

- Interviewer: I would like you to talk about mental toughness and try to narrow it down. Talk about mental toughness. You had already mentioned elements of it, now you need to consider, what is it like when you perform; lifestyles; preparation; what happens after performance, the in-between bit. You have provided the parameters as such… its not just about performing, not just about preparation, its about what you do in your life in general.

Participants talk to each other about mental toughness for a few minutes.
Interviewer interrupts group to narrow down conversation. Uses analogy of car to assist participants:

“If we were talking about a car, you have talked about what makes up a car..., there is an engine, it has four doors, some seats, a steering wheel, some wheels etc., so the confidence, focus etc., is what MT comprises. What is a car? A car is a vehicle which transports you from A to B. So I have just defined a car.
I want you to think about “Mental Toughness is .......................”, without giving me the bits, i.e., car doors, wheels etc., it’s the bit about what does a car do, it transports you. I want you to think at that level and come up with consensus amongst yourselves about what mental toughness is. We won’t worry too much about the exact words, I don’t want something that goes over to the next page either (talking about flip chart), it has to be reasonably concise. We are after consensus not total agreement.

Participants are given about 10 minutes to come up with a written definition.

Mental Toughness is:...... “A quality (either natural or developed) that is required to facilitate successful performance despite internal and external influences”

Interviewer: That’s interesting that you use “despite”. Where did that come from?

Participant 1: Because there are factors that you fight within yourself about. Because there are other pressures like educational; so there are other barriers that one has to overcome to keep you focused, to reach that successful performance. In the external environment you have got peer groups, social life, that are always battering on at you. People are saying “Why are you doing that again, why don’t you come out with us and have fun”.

Participant 2: But then I guess that you are going to have internal and external influences that are going to facilitate or help you achieve it as well. But that’s covered in the first half.

Interviewer: Just talk us through for a second the ‘natural or developed’ bit. You talked about something that you retain suggesting that if you are born with it, you retain it or develop it, and then you retain it.

Participant 2 & 3 have a difference of opinion here:

Participant 2: I think it is a nature nurture thing, you are probably born with it to a certain extent, something that develops or some people are naturally...

Participant 3: Do you believe that you were born with it?

Participant 2: I think in a lot of ways I’m particularly mentally tough anyway, but some of it is just natural and the rest I have developed, so it is a bit both you can not pin it down to either. That’s how I feel about it anyway.

Participant 3: From my own personal experience, I think I wasn’t born with it at all. I think essentially I was a very lazy individual who was influenced by whatever was going on around me and then I think that when I found gymnastics and
Participant 2: Do you not think that you needed mental toughness to even start gymnastics?

Participant 3: No, I think that was bloody-mindedness. I wasn’t allowed to do gymnastics at first, I was just defying my parents.

Participant 2: Is that not mental toughness in itself?

Participant 3: No, I don’t think so.

Interviewer interrupts to get back to focus of interview: So what I’m reading here is that it is a quality, it is something that people have. They have got it in different ways maybe, learned or it’s just innate in some way. You require it to help performance, to perform successfully in the face of things out there which are trying to impede performance.

• Agreed by participants.

Interviewer: Working with that definition, this bit is going to be really hard. Lots of people use the term mental toughness however, they have never actually defined it, as it is very difficult. So, that is a good start, now we are down to the engine bit and four doors etc (car analogy again), what are the components of it? We are down to the profile construction now, we are going to think about the ideal mentally tough performer and what he or she would have as attributes that makes him or her mentally tough.

Now I play golf, I’m not very good at it but I play quite a lot. If I wanted to construct a profile of the ideal golfer. The ideal golfer won’t exist. As much as Tiger Woods is the ideal golfer, well he is not. There are some things that he won’t have at the 100% mark, so he is not ideal, he is not the perfect golfer. But if I was thinking about the ideal golfer, I would probably think about Tiger Woods quite a lot, I’d say yea, I’ll have some of his power, his physical prowess, and those sorts of things. Then I might think about Nick Faldo, in his prime I would want his tenacity, his stickability, always sticking at it, his performance under pressure, especially at putting. I might think about somebody like Greg Norman, who was a charismatic character, made more money out of his marketing activities than he did out of golf because there was something about him, an aura about him. So I would probably pick out bits from different golfers and put them all in one person. If I was to think about the ideal mentally tough golfer then it would be different, now that is what we are going to talk about.

Now I just want you to think for a moment about your own sport, and think about yourself and whether you were mentally tough, but also think about other people in your sports, maybe the best in the world in your sports at the time and maybe now. Think about what made them or makes them the best in the world, if you pick a few in your sport and put one person together out of the various ingredients. If you could just pick the best out of them and put them in there, what would it be?”

Think to yourself for a minute or two, who would I choose and what was it about them and mental toughness. It might be things that you can see in people, things they say, anything. Things you have heard. Because in a moment, you will work together and come up with a list of those things
Paper is given for participants to write things down.

Interviewer: You might also want to think about who was the best in the world and who was the number two in the world and what was the difference psychologically between the two of them. Often there is no physical difference or skill between them but it is something up here (points to head) which is the difference between gold and silver. And anything goes here, don’t be afraid to mention anything you think is relevant”.

Interviewer: What I want you to do is to come up with a list, again it is based on consensus. A list that you are all happy with and go along with, and when you are finished you can write them up on the flip chart. We are after conciseness here so no long sentences, we are after the words that most accurately reflect what you mean. You may not get the words that exactly mean what you are trying to say (people can’t often verbalise components). If we can get some words down some phrases, don’t worry too much about the syntax etc., we will come back to that later on.

Participants given approx. 15 minutes to get on with it.

- Participants talk amongst themselves about focus, determination, control, etc.

Interviewer: These (i.e., focus, determination, control, etc.) are the foundations that the average person knows about. Now I want you to go beyond that, I want you to think about the parameters that you set for yourself earlier on, its about performance, preparation, after performance, you need to talk about life, lifestyle and that sort of thing. So all those things that you mentioned are important but they need some context. Self-belief in what, about what, when, whatever, without adding loads of stuff around them. You are working on one level now move up to the next level.

Keep in mind that you are not looking for the good gymnast going into the gym, you are looking for the qualities of the ideal mentally tough performer, you need to keep that in mind. What GJ said initially about the bits that make up this perfect golfer is in terms of how mentally tough they are, not if I want to be an elite gymnast, so move away from that a little and more into the psychology side of it. This ideal performer would be the best in the world by a long way, it is what makes them number one and they have got these things beyond what number two in the world has, its what makes the difference.

Participant 2: Tyson when he first started fighting, boxing was his life, his focus was absolutely ridiculous, every thing around him was geared to boxing, his single-mindedness. He just believed that he was better than everyone else by a long way. He would just get in to a ring and people would just fall apart. Then all the lifestyle stuff came in and took him away from that, took away a lot of those qualities, and then he was just as vulnerable as everyone else after word. The extent to which he was single-minded was so important to his boxing. That underlined everything else. He knew he was the best in the world, his desire was absolutely insatiable and that made him a long stretch better than the rest. He had an insatiable desire to succeed.

Interviewer: They’re the sorts of things “insatiable desire” You are moving to the next level now.

Participants talk about examples in sport: Linford Christie rose through the ranks but then seemed to jump to a different level, he had an aura about him; Tanya Harding what was
underlying the negative action she took to try to win gold. What are the things that underpin these sorts of actions.

Higher Level Qualities or characteristics of Mental Toughness: (written on Flip-Chart)

- Ability
- Goal achievement
- Coping
- Unique
- Technique

Insatiable desire to succeed

Totally internalised motives
“voluntary isolation”

Ultra-resilient to adversity due to:
- Bad Press
- Injury
- Performance set-backs
- Competition Pressure
- Competition anxiety
- Others’ Performance
- Personal (external) circumstances

Supremely Disciplined
- Not tempted by external “attractions”
- Decisions always goal-directed

Interviewer: All of these words that we have here, don’t have any leeway in them, do they?

Participants: No

Interviewer: They are very high in intensity.

- Other important factors mentioned by Participants:
  Participants 1: Unshakable self-belief - One thing that I have found is that they (i.e., The mentally tough athletes) think that they are different as well. When they train they train differently. I was in Japan with Neil Thomas who was a world medallist and he trained differently to everyone else, he had his own personal way of doing things... He had such self-belief in his own ability to know that ‘this is definitely the way’, I guess it gets down to making the right decisions. He made the right decisions about how he was going to train, but he had the self-belief that he was making those right decisions.
Participants 2: Daley Thompson trained three times on x-mas day because Jourgen Heinken trained twice on x-mas day. Daley Thompson always wanted to do more, to be more unique.

Participants 1 & 3: Ability to make right decision at the right time.

Participants 3: Do we need to go anywhere with the total self-centredness, the being different to everyone else. We know that there is something that makes them different but .... do these guys know that they are that different and is that what sets them apart, and do they have something psychologically that ....... Don't know where I am going with that.

Interviewer: These questions are probably why we are doing this (research). Because we think that the thing that separates them (i.e., Olympic goals medallists with Silver & Bronze). Because it is not just coping with pressure, handling anxiety, coping with pressure, confidence, superior mental skills. We have know that for the last twenty years, we think that there is this other thing that we are calling mental toughness but we might not soon. It is something different that we are getting around here (i.e., discussing here).

- Interviewer stops discussion here and makes comments about how difficult the interview has been but that it has been incredibly useful.

Participants 3: I found the analogies very helpful in moving the discussion to the required level.

Interviewer: Do you think these characteristics can be developed or are natural?

Participants 1: I think they can be developed but I think that you have an innate level. Everybody has a level of mental toughness but sport brings it out

Participants 2: Everyone has to have some to start off with, to get to elite level you need to be mentally tough but then some people find that extra something that makes them stand out from the competition. Linford Christie was at that level, but then suddenly something happened to him, where he then moved up a step.

Interviewer: It is a very difficult question.

Participants agree that it can be developed but that people are born with different levels of it.

Interviewer: Having now gone through the process of the interview, would you now alter your definition of Mental Toughness. You have come up with something that you knew little about, you started at the basic level of all the qualities, we then moved the discussion more towards these higher level qualities, and now we have come up with things that other people probably wouldn’t have come up with. Does your definition now still hold or would you alter it?

Participants 3: It should be several qualities, I think it is more than one quality

Participants 1: I think that they interact, they don’t act in isolation. There is a crossover; e.g., having self-belief helps you with being disciplined and resilience and your insatiable desire to succeed. Perhaps that is the key as well maybe they need to interact in a certain way in order for you to become this mentally ideal performer. How do they interact with each other.
Conclusion

- How did you think the procedure went?

Participants: Yea, good

- Did you feel that you could tell your story fully and in your own words?

Participant 1: I felt that you (Interviewer) helped move the discussion up a level or two and to focus on the subject... that was beneficial.

Participant 2: It was a difficult subject to talk about

Interviewer: Are you happy that what is on here (i.e., flip-chart)?

All participants agreed that the characteristics on the flip-chart were genuinely their own thoughts and feelings on this topic.

- Did we lead you or influence your response in any way?

Participants: No

- Do you think that we failed to discuss any important factors?
- Do you think that there are any other qualities or characteristics of the “Ideal Mentally Tough Performer” that you could not describe?

Participant 2: I felt that there is possibly more but I couldn’t have given any more information as it was so difficult to articulate (Participants 1 & 3 agree).

- Have you any comments or suggestions about the session today?

Interviewer: The idea of getting you talking in the first section ..........talking about yourself, competition, there is an idea behind that. Do you think that went on long enough? We gave you about fifteen minutes to do that, to get you talking about sport and performance, training, competition, and on-seasons and off-seasons, and thoughts and feelings. It seemed like a long time to me when I was sat here, but then the flow of the conversation got more detailed as we went through, so maybe the leading does need to be a little bit more.

Participant 2: Yes, I thought you moved us on a bit quickly. We went from there (i.e., talking about sport and performance, training, competition, and on-seasons and off-seasons, and thoughts and feelings) to MT. I though that the change-over was too severe.

Participant 3: Talking amongst ourselves was very useful... to sound ideas off each other and develop points or topics further.

Once again thank you for helping out with this interview.

End of Interview
APPENDIX 4

COPY OF EXEMPLAR TRANSCRIPT STUDY 1

INDIVIDUAL INTERVIEW: PARTICIPANT 4
Explanations of the interview procedure.

**Procedure for Interview:**

Focus group using 3 performers, taped using audio equipment probing the qualities of the "Ideal Mentally Tough Performer".

7. Ask him to:
   - Define Mental Toughness.

8. Show them previous definitions and get comments/feedback on them.

9. Show them previous attributes and get comments/feedback on them.
   - Go through each attribute one by one and ask the following questions.
   - Tell me what you mean by that (term)? Get examples.

10. Are there any attributes you feel are part of mental toughness but not on this list

11. Dynamic building process – Repeat exact interview profile to other athletes and build on the list of constructs.

**Mental Toughness is:**

Participant 4 Definition “The ability to maintain total focus in total adversity”.

“A quality (either natural or developed) that is required to facilitate successful performance despite internal and external influences”

I like this definition... I agree with the ‘natural or developed’ aspect of mental toughness... the ability to cope psychologically with the many demands that sport places upon an individual (e.g. training, competition, lifestyle)... A mentally tough performer remains calm, collected, determined, focused and rational under pressure. Mental Toughness is about knowing that you are the best and using that as a crutch to achieve your goals

Interviewer: Okay, now lets have a look at the attributes that the focus group came up with.
### Mental Toughness Attributes

<table>
<thead>
<tr>
<th>Mental Toughness Attributes</th>
<th>Comments or Modifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1) Unshakable self-belief</strong></td>
<td>Would link ability &amp; Goal achievement together... but it must be realistic belief in your ability... coping- important but not vital... unique and technique - not really a key component... but overall unshakable belief, a key component... You have to believe in your ability, but it does get dented, and you have to re-build it sometimes. MT people are good at re-building their belief in themselves.</td>
</tr>
<tr>
<td>• Ability</td>
<td></td>
</tr>
<tr>
<td>• Goal achievement</td>
<td></td>
</tr>
<tr>
<td>• Coping</td>
<td></td>
</tr>
<tr>
<td>• Unique</td>
<td></td>
</tr>
<tr>
<td>• Technique</td>
<td></td>
</tr>
<tr>
<td><strong>2) Insatiable desire to succeed</strong></td>
<td>100%; key component(within the rules)... Yes, you’ve really got to want it, but you’ve also got to want to do it for yourself. Once you start doing it for any one else or to make yourself famous, or whatever, you’re in trouble. You’ve also got to really understand why you’re in it, because when the pressure’s on you forget and wonder why the hell you’re doing this to yourself. Yes, knowing why you’re doing it and reminding yourself is vital.</td>
</tr>
<tr>
<td><strong>3) Totally internalised motives</strong></td>
<td>The only expectations that put pressure on me are my own. Sure, I want to do well for other people, but I’m not thinking about it when I’m playing ... it should be internal... if it is not then you can not last the distance...so, it is a component</td>
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<tr>
<td>“voluntary isolation”</td>
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</tr>
</tbody>
</table>
4) Ultra-resilient to adversity due to:

- Bad Press
- Injury
- Performance set-backs
- Competition pressure
- Competition anxiety
- Others’ Performance
- Personal (external) circumstances

Overall agree, important component...Bad Press- not important...injury...key priority...dealing with injury...performance set-backs...yes important...it’s about not letting the thought of having a niggling injury get in the way of your performance... being able to remain positive is important so that it doesn’t affect you for longer than it should....competition pressure...the pressure is enormous in (sport named)...so much time to think about it as well. You have to be resilient to it, and accept it’s part of the game, or it would just drive you crazy ... if you are going to achieve anything worthwhile then there is bound to be pressure. Able to use the pressure of competition to get the best out of yourself... competition anxiety...yes important... I accept that I’m going to get anxious and worry about things, particularly when the pressure’s on, but keeping the lid on it and being in control of it is crucial... others’ performance... A massive factor in (Sport named) because you have to respond to what your opponents are doing. But in the end you have to focus on what you’re doing and not worry about them – you can’t influence others, only yourself... but the same is true for opponents’ poor performances in rain, wind etc – you can’t let that provide you with the excuse for playing badly ...personal (external)...yes, important...circumstances...

5) Supremely Disciplined:

- Not tempted by external “attractions”
- Decisions always goal-directed

For the required period of time- vital component
Re-visit definition: Interviewer: Are you happy with your definition or would you change it in light of the attributes?

The ability (either natural or developed) to facilitate successful performance and maintain total focus in total adversity".

<table>
<thead>
<tr>
<th>Additions</th>
<th>Comments/ Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>6) Ability to avoid distractions, being single-minded and giving full, intense attention to the task at hand for its whole duration</td>
<td>Yes, you can’t take any outside worries and issues with you. You have to pay the mortgage but if you’re thinking that each game/performance is vital because of it, you’ve got problems. Only one thing matters out there, the (Sport named).... But the other side of it that you have to be able to forget about (Sport named).... give your mind a break so that you can re-charge. I have problems doing it but I know it’s so important. Everybody can switch on, switching off after game or between games is the difficult one</td>
</tr>
<tr>
<td>7) Ability to withstand and push back the boundaries of physical pain, while maintaining technique and effort under distress</td>
<td>Absolutely vital component...emotional pain, definitely yes, physical pain...I can really relate to that...maintaining technique is vital and there are bits of my performance which don’t like the psychological pressure. But it’s about not getting put off by the pressure, not thinking about it, not letting it distract you.</td>
</tr>
</tbody>
</table>
SECTION 5

Conclusion:

That just about raps up the interview /profile. However, before we finish, let me ask you some final questions.

- How did you think the procedure went?
  - well
- Did you feel that you could tell your story fully and in your own words?
  - Yes, I think so, but it is a difficult subject to articulate
- Did we lead you or influence your response in any way?
  - No
- Do you think we failed to discuss any important factors?
  - Not fully sure, difficult to say...I think I gave you as much as I know
- Do you think that there are any other qualities or characteristics of the “Ideal Mentally Tough Performer” that you could not describe?
  - Possibly
- Have you any comments or suggestions about the session today?
  - No

Once again thank you for helping out with this interview.
APPENDIX 5

MENTAL TOUGHNESS DEFINITION RATING AND ATTRIBUTE RANKING EXAMPLE STUDY 1
Study 1 mental toughness definition rating and attribute ranking example

**Mental Toughness is:**

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 upon you

- Specifically be more consistent and better than your opponents in remaining determined, focused, confident and in control under pressure

Please rate to what extent you would agree with this definition of Mental Toughness on a scale of 1 to 10 (1 being totally disagree & 10 being totally agree):

(1 2 3 4 5 6 7 8 9 10)

Totally Disagree

Your rating: 9

Totally Agree

Comments:

It covers all of the areas that I deemed important during the focus group, neatly and succinctly relaying the most important aspects of mental toughness. My one observation is directed at the last part of the statement about the specific components of mental toughness, and would be to question whether the truly mentally tough performer would even experience pressure in the same way as other performers.
This is the final list of proposed mental toughness attributes. Can you please rank them in order of importance from 1-12 (1 being the most important attribute and 12 being the least important attribute) for:

There is also a column for any comments or modifications you may have.

<table>
<thead>
<tr>
<th>Mental Toughness Attributes</th>
<th>Order of Importance</th>
<th>Comments or Modifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Having an unshakable self belief in your ability to achieve your competition goals</td>
<td>2</td>
<td>Obviously this is vitally important, but you don’t always need to achieve your goals to win. This is why I have placed attribute 2 as the most important. If you know you are better than another performer I believe that this gives you a more powerful psychological edge than believing you can achieve your goals. After all it is possible to achieve your goals and still lose if the other performer is better.</td>
</tr>
<tr>
<td>2) Having an unshakable self belief that you possess unique qualities and abilities that make you better than your opponents</td>
<td>1</td>
<td>Yes, this is essential</td>
</tr>
<tr>
<td>3) Having an insatiable desire and internalized motives to succeed</td>
<td>3</td>
<td>Is it just internalized motives? Is there not also a place for certain types of external motivation? e.g. Eastern block athlete’s performing to keep a decent standard of living for their families.</td>
</tr>
<tr>
<td>4) Bouncing back from performance set-backs with an increased determination to succeed</td>
<td>4</td>
<td>Yes, everybody fails at some point, but the truly mentally tough are able to use this positively.</td>
</tr>
<tr>
<td>5) Thriving on the pressure of competition</td>
<td>5</td>
<td>Yes, they must love it... competition is their raison d'être.</td>
</tr>
<tr>
<td>6) Accepting that competition anxiety is inevitable and knowing that you can cope with it</td>
<td>7</td>
<td>Would a truly mentally tough performer experience competitive anxiety in the same way as other athlete’s?</td>
</tr>
<tr>
<td>Mental Toughness Attributes</td>
<td>Order of Importance</td>
<td>Comments or Modifications</td>
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<tr>
<td>-----------------------------</td>
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<tr>
<td>7) Not being adversely affected by opponents' good and bad performances</td>
<td>6</td>
<td>I feel this is important and links to attribute #2; the objective ultimately is to WIN, but you first have to get the most out of yourself</td>
</tr>
<tr>
<td>8) Remaining fully-focused on the task at hand in the face of personal life distractions</td>
<td>10</td>
<td>I feel that personal life distractions are a low priority to top level performance; many are irrelevant</td>
</tr>
<tr>
<td>9) Switching a sport focus on &amp; off as required</td>
<td>12</td>
<td>This may be important, but don’t think it is the most important factor of mental toughness</td>
</tr>
<tr>
<td>10) Remaining fully focused on the task at hand in the face of competition-specific distractions</td>
<td>8</td>
<td>This is also important, but I would almost take it for granted; more relevant than attribute #8</td>
</tr>
<tr>
<td>11) Pushing back the boundaries of physical and emotional pain while still maintaining technique and effort under distress (training and competition)</td>
<td>11</td>
<td>I’m not sure I would take such a negative view of pain. I usually thrived on it, and even looked forward to it with relish. Pain = challenge</td>
</tr>
<tr>
<td>12) Re-gaining psychological control following unexpected, uncontrollable events</td>
<td>9</td>
<td>Yes, but would they lose control in the first place?</td>
</tr>
</tbody>
</table>
APPENDIX 6

TOTAL MENTAL TOUGHNESS DEFINITION RATINGS AND ATTRIBUTE RANKINGS EXAMPLE STUDY 1
Appendix 4 – Study 1 total mental toughness definition ratings and attribute rankings

<table>
<thead>
<tr>
<th>Mental Toughness Definition Rating (out of 10)</th>
<th>Participant 1</th>
<th>Participant 2</th>
<th>Participant 3</th>
<th>Participant 4</th>
<th>Participant 5</th>
<th>Participant 6</th>
<th>Participant 7</th>
<th>Participant 8</th>
<th>Participant 9</th>
<th>Participant 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Having an unshakable self belief in your ability to achieve your competition goals</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>1</td>
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<td>1</td>
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<tr>
<td>2) Having an unshakable self belief that you possess unique qualities and abilities that make you better than your opponents</td>
<td>8</td>
<td>2</td>
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<td>2</td>
<td>2</td>
<td>6</td>
<td>10</td>
<td>2</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>3) Having an insatiable desire and internalized motives to succeed</td>
<td>1</td>
<td>9</td>
<td>3</td>
<td>6</td>
<td>5</td>
<td>10</td>
<td>2</td>
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<td>7</td>
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<tr>
<td>4) Bouncing back from performance set-backs with an increased determination to succeed</td>
<td>4</td>
<td>11</td>
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<td>5</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>5</td>
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<tr>
<td>5) Thriving on the pressure of competition</td>
<td>9</td>
<td>10</td>
<td>5</td>
<td>10</td>
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<td>12</td>
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<td>6) Accepting that competition anxiety is inevitable and knowing that you can cope with it</td>
<td>11</td>
<td>3</td>
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<td>7) Not being adversely affected by opponents’ good and bad performances</td>
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APPENDIX 7

INTERVIEW GUIDE FOR STUDY 2
Interview Guide for Study 2

WHAT IS MENTAL TOUGHNESS AND
WHAT ARE THE QUALITIES OF THE
"IDEAL MENTALLY TOUGH PERFORMER".

Name: _______________________________________________________

Participant #: __________________________________________________

Age: __________________________________________________________

Sport: __________________________________________________________

Best Achievement: ______________________________________________

Contact Address or Phone Number: __________________________________

_________________________________________________________________

_________________________________________________________________

Interview Date: __________________________________________________

Start Time: _____________ Finish Time: ________________
SECTION 1:

INTRODUCTION (Not Recorded)

Hello, I’m Declan Connaughton from the School of Sport, Physical Education and Recreation, University of Wales Institute, Cardiff, UK. Thank you for agreeing to participate in this interview study. In this project I am talking to the elite performers about what characteristics or qualities the "Ideal Mentally Tough Performer" possesses.

The term ‘Mental Toughness’ is frequently used to describe individuals who excel in certain activities (e.g., sport). However, little is known about the actual make-up of ‘Mental Toughness’. Therefore, the purpose of this study is to try to identify the characteristics or qualities of the “Ideal Mentally Tough Performer” which may help explain what ‘Mental Toughness’ is.

CONFIDENTIALITY:

I would like to emphasise that all information regarding this interview will remain completely confidential. I may want to use your description of particular characteristics or qualities in order to illustrate important ideas, but these will remain strictly anonymous, and I will ensure that your identity is protected at all times. I am using audio recording equipment to make the profiling process more efficient and to get complete and accurate information. Recording this also allows for a typed transcript, which will be used for later scrutiny and reference.

The data collected in this study will be used in two ways: First, the information will be used for my Ph.D. research thesis. Second, the results will be published in scientific journals so that other sport scientists, coaches, and performers can benefit from the findings.
PARTICIPANTS RIGHTS

As a participant in this study you have several very definite rights. First, your participation in this interview is entirely voluntary, and you are free to decline to answer any questions or to stop the procedure at any point. **There are no right or wrong answers to the questions that I will be asking.** I want to learn and benefit from your experience and expertise so that I can better understand what the characteristics or qualities of the “Ideal Mentally Tough Performer” are. I hope, therefore, that you will answer the questions in a candid and straightforward way. If there are any questions you are not comfortable answering then feel free to decline, by simply stating “no comment”, and no further questions related to that topic will be asked. If you have any questions as we go along please ask (e.g., as in the case for clarification, if at any time you do not understand what I am asking).

ORIENTING INSTRUCTIONS:

I will be asking you about your personal views on what you think the characteristics or qualities of the “Ideal Mentally Tough Performer” are. **The characteristics or qualities of this profile can be based on yourself, any individual you believe to be mentally tough, or even a combination of several individuals whom you feel have certain aspects (but possibly not all) of being mentally tough.** Therefore, please feel free to draw on many varied experiences for your answers.

If you have problems finding the right words to describe certain qualities or characteristics, then please give examples and describe the whole situation or process to portray what you mean. Pauses are fine, however, please do not guess or tell me what you think I or others want to hear. At the end of the interview there will be an opportunity for you to add anything that you felt was important but not covered in the interview.
SECTION 2:  
Get participant to talk about their experiences as an elite performer or working with an elite performer in the performance arena.

- I want you to think about and talk about your experiences as an elite athlete / elite coach of elite performers / psychologist to elite performers.
- One time or another on paper you were or are the best in the world.
- Forget about mental toughness for the moment and just try to remember what it is or was like to be the best in the world or work with the best in the world.
- Anything and everything around being an elite athlete or working with elite athletes.

Get participant to talk about their lifestyle and experiences as an elite performer outside of the performance arena.

- This whole bit here is remind yourself of what it was or is like. You may find yourself experiencing the emotions as well.
- Can we now take you to outside the performance arena and focus on you as a person trying to lead a normal lifestyle but as an elite athlete.
- Can we now take you to outside the performance arena and ask to focus on the elite athlete trying to lead his/her normal lifestyle as an elite athlete.
- This can include ‘In-season’, ‘Off-season’, anything to do with lifestyle.

Get participant to talk about mental Toughness (general, initial thoughts).

- Okay, that was great, now I would you to narrow it down a bit. So far you have talked about (1): your/their experiences of performing at an elite level; (2): the things which go with it in terms of your/their lifestyle.
- Now I want you to think about all of it. Everything, not just about performing, it is everything… your lifestyle and so on… and just talk about mental toughness…. Your experience… yourself, other people, whatever… just for five minutes or so.
- In your/their life outside sport, did mental toughness figure there at all? Or was it all about performance?
- There may be things you/they did in certain situations and the way that you/they were or are, that made you/them different as a person/people to those who weren’t the best in the world or didn’t achieve the gold medal/s.

Ask participant to define Mental Toughness.

- Okay we will now get to the structured bit…It should be fairly obvious what we have been doing… it has been an orientation session, reminding yourself of what it was like and now we are down to mental toughness.
- For the next fifteen minutes or so… I want you to actually complete the definition.
- What is it (Mental Toughness)? And I want you to think about the performance arena that you first went to and then think about outside the performance arena … about lifestyle and life experiences, etc…. and I want you to come up with a definition. A sentence if possible… if you want to use bullet points that’s fine…
We will revisit this definition later.
- Car analogy: ...if I say “what is a car?” what people generally say here is that basically a car has 4 wheels, engine, doors, etc.... that’s not what we want at this point... we will come to that later... we actually want you to tell us that a car is something that transports you from A to B. ....
- In this study... we have to be very careful here as it is a scientific study... I don’t want to lead you in any way... but at the end of this we want to know what you think made you different to the person or people who finished second... so why is the best in the world the best in the world and not number 2
- There may be something.... Just something... I just want you to think at that level. We are talking about the best in the world, not people who are just good at what they do.
- And I want to think beyond yourself as well.

Ask participant to identify the attributes of Mental Toughness.

For subsequent interviews

Show all Mental Toughness definitions to participant and ask for comments.

- if I was constructing my profile of the ideal golfer. I would probably think quite a lot about Tiger Woods, I’d think what is it about Tiger Woods that is important in terms of his power, his mental make-up.... I’d probably think about Faldo, performing under pressure, I’d think about Participant 1 Norman, in terms of his charisma and things like that, because he makes a lot of money... off the golf course, he probably makes more money off the golf course than on it. So I would pop all these things together in this one golfer and it would be the perfect golfer, the ideal golfer. So now I want you to think about the ideal mentally tough performer based on this definition (The definition that they just came up with)... and what this performer would have... so it’s the bits of the car....and you have already talked about some things... I mean Participant 3 noted something about ‘having confidence in your ability and being confident about that confidence’... Participant 1, you talked about preoccupation.... So we now get into the detail of it

Show list of previous attributes to participant and ask for comments.

- What does it (attribute) mean to you?
- Do you want to modify it?
- Sporting examples?

- You probably want to spend a couple of minutes working quietly or whatever you want, just jotting down comments about these attributes of Mental Toughness.
- What we would like you to do is, to think about a person, a person that actually won’t exist, because we are talking about an ideal mentally tough performer....
- Golf Example: If I was constructing a profile of the ideal golfer. I would probably think quite a lot about Tiger Woods, I’d think what is it about Tiger Woods that is important in terms of his power, his mental make-up.... I’d probably think about
Faldo, performing under pressure, Greg Norman, in terms of his charisma and things like that, because he makes a lot of money... off the golf course, he probably makes more money off the golf course than on it. So I would pop all these things together in this one golfer and it would be the perfect golfer, the ideal golfer. So now I want you to think about the ideal mentally tough performer based on this definition (i.e., The definition that they just came up with)... and what this performer would have... so it's the bits of the car we are looking for.....

- But remember it is about the very best in the world and them being the best in the world.... And what's going to make the difference... its more than being confident, focused, etc.... we know all that....It is something else
- Can I also remind you about the earlier conversion where you came outside the performance arena and talked about thinks that you/they did or didn't do, because you/they were elite athletes.
- Get participant to spend some time writing and thinking about the proposed attributes.
- The focus of this is: Are you talking about what you did to make yourself mentally tough or are you talking about something which was mental toughness?... because that is a important distinction... it is the second one we are after...what was the output? Its why you do it, we are more interested in.
- Taking it up a level: A lot of people can do that, who are club performers or whatever... you were able to do it but in a different way... so you probably need something to take that attribute up a level... “the best in the world”

Additional Attributes:
- Are there any attributes you would add?
- Get examples/experiences.
- Get short explanation of any new attributes.

Revisit definition.
- Do you want to change the mental toughness definition as a result of going into depth regarding mental toughness.

Conclusion:
That just about raps up the interview /profile. However, before we finish, let me ask you some final questions.

1 How did you think the procedure went?
2 Did you feel that you could tell your story fully and in your own words?
3 Did we lead you or influence your response in any way?
4 Do you think we failed to discuss any important factors?
5 Do you think that there are any other qualities or characteristics of the “Ideal Mentally Tough Performer” that you could not describe?
6 Have you any comments or suggestions about the session today?

Once again thank you for helping out with this interview
APPENDIX 8

COPY OF EXEMPLAR TRANSCRIPT STUDY 2

FOCUS GROUP INTERVIEW
Study 2 Focus Group Interview

Instructions given by interviewer that the process will entail participants talking to each other quite a lot during the interview, and on occasions the interviewer may jump in and ask the participants to explain a bit more about certain comments.

Interviewer: It starts off with a general discussion, then you will be asked to define, amongst yourselves, Mental Toughness. Then we will work out what the attributes of mental toughness are and then explore to look at exactly you mean by that.

Interviewer: I want you to think about and talk about your experiences as elite athletes. One time or another on paper you were the best in the world. Forget about mental toughness for the moment and just remember what it is or was like to be the best in the world. What was it like?

Participant 1: You want us to think about our gold medal race, what the day was like and what the actual race was like.

Participant 2: What do you mean what was it like, sort of walking around feeling good about yourself.

Interviewer: All of that, anything and everything around being an elite athlete.

Participant 3: I will tell what I remember now, sitting here now and thinking back. I can remember the day, and the medal and the whole....the great stuff about that. And I have to think even further to remember all the horrible stuff that went on to get there. That’s what, I often remember the good stuff first, and whenever I have been tempted to want to get back in the team again properly, I cast myself back to February and January and remember all the hard stuff that went on to actually get to that amazing day, all the... that’s what I remember. The big picture sort of thing.

Participant 1: I find it difficult to remember what it was really like and take that and separate that from what I have just always said it was like.

Participant 2: Yea, good point

Participant 1: because you talk about it so much, you pick out the bits that you think people want to hear, all the bits that you think “ah this will be useful for work; this will be interesting to a journalist” so you tell them that bit, so it is quite a challenge to really think what it is actually like.

Participant 3: I think there are very few words, I have always found it describe, I have just found that there weren’t always the right words to describe... to do justice to the whole....

Participant 1: Who cried?
Participant 2: Afterwards or before?
Participant 1: I cried a lot before
Participant 2: Cried in training or cried .......? I cried a lot in training.
Participant 3: Yea, I cried a lot in training.
Participant 1: Yea, I cried a little in training, when (Name) upset me.
Participant 2: I cried with pain..., a lot
Participant 1: Did you... no I didn’t cry with pain. Not properly cry, it hurt and I shouted a lot, but I didn’t cry properly.
Participant 3: I cried a lot after a really bad day and I would go home thinking “why am I doing this”. I would drive home in the car.. in my Volkswagen van with tears running down my face, thinking “I’m rubbish, I’m crap, what am I doing this for..., how am I going to turn this around”... but knowing that in two hours that I have got to be back in the water with the same person and I have two choices... to either let it drag me down, which occasionally it did, or turn it around and try and make it better.
Participant 2: Was an issue with that person that you had or was it the fact that you....
Participant 3: It just didn’t click, we were rotating combinations of people all the time and it is inevitable that out of the twenty women there is going to be or ten sorry there is going to be two or three that you just didn’t go well with. And when it came your turn to row with that person you usually dreaded it, which probably wasn’t the best way to prepare anyway and so if I had a particularly bad day....m....

Participant 2: That’s quite interesting that you split them into two different bits, there is the bit about....because I had emotional upset with coaches, I don’t know, I was a bit younger maybe.. when I was 12-13 I had a coach that would upset me so much that I used to cry during sessions...I was so pissed off with him. But then there was the other crying bit which is about as emotional.. but is about the pain bit.. just being in pain

Participant 1: I had the other bit, having issues with the other person, which is about training and just thinking “I don’t want to do this, I am really upset...this is upsetting me.. what is the point”
Participant 2: It is upsetting me at the time, mine wasn’t after, mine was at the time
Participant 3: Mine was more after when I was on my own, privately, after training.
Participant 2: when you are (Sport) you are on your own anyway, you got your head down, you are thinking through this stuff with no one with you I guess.
Participant 3: I would never show anything to anyone in that respect (Participant 2 agrees). I would be in the car and nobody needs to know, and nobody did know ... until now...... The only other time I cried was on the podium, I didn’t think I would.
Participant 2: I didn’t think I would.
Participant 3: I would always look at Americans and say “I’d never be like an American and cry on the podium” and suddenly I can remember hearing the outcome and the flag going up and I could just see my parents in the stand and that was it, I just... I wasn’t like sobbing crying, it was just .. I can see it on the video, I take this great big deep breath and I can feel it all welling out in my eyes and stuff.
Participant 2: How did you, I just thinking about... leading up to the race... how did you deal with the emotion of wanting to win the race and be the best...... that half a day before the race
Participant 1: For us it was probably 24 hours before, we had a meeting with .............and we had a really good discussion and he told us a few things which were really.. a few stories like leaving your hand under the flame longer than the people you are racing against.. you know, are you prepared to do that. I think he reminded us of the ‘if not now, when, if not you, who’ sort of quote which I had heard before.

Participant 2: Was the inspiring, was that inspirational stuff

Participant 1: I would say that was inspirational, in getting us to dig into our reserves a bit and remember what we had done in the past and think that we could be good enough to win this race.

Participant 2: I am trying to think was it the same for me, I was thinking about that bit you said “putting, leaving your hand in the flame longer” because that struck a cord with me a bit... because you must.. was he trying to tap into your mind, letting you know that what you are going to do is going to hurt you a lot, and that you had to accept it.

Participant 1: I guess so, yea and we had to accept it and get on with it... and than I remember he was talking to us and he was probably talking more than we were talking and I was thinking “this is probably a speech he has given to some of the other teams but”... ........... was really blubbing and I was really shaking and about to lose it and I think he realized that he almost over timed us a bit, he might have thought that and sort of backed off a bit...... but we were too far gone by then... we were really egged up and into it.

Participant 2: What did you feel like then, going from that moment you spoke to him to the race... Did it overwhelm you?... because if was a moment of overwhelmness, how did you then get from that point to be composed before you got in (i.e., the race).

Participant 1: I think I was really, really scared for the whole of the next 24 hours and I think my brother particularly was... I think I was fairly scared for the next 24 hours.. scared of the fact that it was going to hurt... and scared of the fact that we might not win... and scared of the fact that I might let him down really... that I would let ............ down

Participant 2: My scare or thing was about not doing what I knew I should do or be capable of doing... I have done things before and it was like I know I can do it and should do it... I tackled early in my career the “hand in the flame thing” because I remembered sports psych talking about “when the pain comes what do you do, what do you do when it gets painful at the end of the race.. I guess it is the same for you guys in (Sport), you got your.. I don’t know your 4, 5 mins..... for me the last 20m hurt like hell, and it was like what are you going to do, and what do you say in your head when it gets to hurt... and in (year) when I was 18, I had a bit of a revelation in that I tried to.. I spent a lot of time the day before the race thinking about when this feeling.. trying to imagine the feeling and turning it to one of joy almost.... like when it started to be painful I used it almost as a narcotic.. I felt I was using it as a narcotic.. so it was like... when this pain hits me it will give me a boost to be stronger and better... and that’s what happened to me in the last 20m of that race and I
was... the last 20m of my race was my territory, I felt from that moment on (i.e., year). So I built on that so that I wasn’t scared of pain because I knew it was a friend... if you like... it’s a bit weird... I’m not saying I understood that what happened from my pain story.

Participant 3: I had a little bit of scared-ness about not achieving what we were capable of because we had the substitution on the team, if we hadn’t had the substitution of Monday of day 1 racing. I don’t think... I just felt so good leading up to those games and felt that no one was going to win except us... because part of that was built of the fact the we were winning by open water.

Participant 1 to Participant 3): As a spectator you were the big, big favorites, weren’t you?
Participant 3: Yea, I have never felt so much confidence and belief and excitement about wanting to race and all the pain stuff, I just didn’t even think about... it wasn’t easy but it was all in place and everything was just... it really was... that Olympic medal was about stepping into a regatta... everything was ready to go there was absolutely no question mark... and I knew with 300m to go... I called 3 tens and I go “Go after each ten and you just pull on it as hard as... a little bit harder each time” and we had done it so many times that I just.. I knew that I could finish the race doing those thirty strokes in excruciating pain. I knew that exactly was going to happen, I knew when it was going to happen, I knew how I was going to feel and I had done it before and I knew I wasn’t going to blow up... I was going to cross that finish line having given the best last 30 strokes of my life.

Participant 2 to Participant 1: What did you think in your last 30 strokes then?

Participant 1: It is very difficult to remember, I mean... I think... I just... I think I was really focused on what I was doing... I don’t think I had time to look at what was happening when I was doing it... it was just... I was very process driven... just doing my bit as well as I could and I’m sure it hurt like hell but I can’t really remember what it was like.

Participant 3 to Participant 1: But your race was almost like an unknown race... we were stepping into a very known situation.
Participant 1: You sort of had to win
Participant 3: Yea, we better win, you guys were slightly... well the under-dogs and you went through the best in the world who had been reigning for the last ten years in the last 500m
Participant 1: Well the last 250m really
Participant 3: That’s just a different race
Participant 2: To me that toughness in the end of races is just... quite... interesting to me.

Interviewer interrupts to re-direct discussion slightly

Interviewer: Okay you mention toughness, we are going to come on to that in a moment (no its not that toughness from Participant 2). No not right now, this whole bit here is remind yourself of what it was like and looking at you we can see that you are experiencing the emotions as well. Can I now take you to outside the performance arena... and you as people trying to lead a normal life but as an
elite athlete. Just talk about that a little bit. Inseason-offseason, anything to do with lifestyle etc.

Participant 3: I loved it, I was going to university and (sport) for the best university in the country, it was all linked to the national training program, for me the structure of my day-to-day existence was more or less laid out, I would go to row in the morning, go to classes, row in the afternoon or weights. I had everybody that was important to me in the (Sport) community around me, I had friends from school who sitting at the same university who I lived with and I just loved the lifestyle of being an elite athlete, there was nothing I would change about the way I existed in that world because I .... The university setup was where the national team setup, so I had all the athlete bits looked after... the physiology all housed under one roof. I didn’t have to go anywhere except university of (Name) but we were in a city where we had ... like we had a good night life, really good places, restaurants and places to hang out, and I had all these friends you know half a dozen or so friends from who I grew up with, you know, amongst all this, and quite enjoyed the (Sport) crowd as well so that going to (Sport) parties and stuff.... They wanted to come along so for me it was just absolutely ideal set up ... I wouldn’t have changed it at all and for those reasons really, really enjoyed it. It certainly got the most out of me on a day-to-day basis, probably looking back.

Participant 2: I was a bit different I guess. I remember my place in (Name), I remember being completely in control. I wanted to be in complete control of everything I did, and almost try... not to live a monastic life.. but ... I don’t know if it relates to what you have just said then (talking to Participant 3) but you organized around you exactly what you needed and wanted around you.

Participant 3: It was very self focused I have to admit but in ...

Participant 2: You went to a party if you wanted a party and you did this if you wanted to do this

Participant 3: yea, if I had to go training I wouldn’t stay at home and hang around in the house with my mates even if they wanted me to, I would say “sorry, I have got to go training”

Participant 2: I took some sort of masochistic pleasure out of denying stuff and I felt like I was on some mission thing.. so I didn’t do this , do that but I was comfortable not doing it.... I felt like I was chiseling something and sharpening something and I didn’t let other people get in the way. So I felt I was completely self-centered... I felt like a bit of a user actually but I didn’t actually care at all... if I wanted something from that person I would be with that person far a bit....but I know now from my life now that I am not a nasty person, so I wasn’t nasty with any of it, it was all in a decent way, I was a decent person with it but I knew that if I had attractions (i.e., need something off someone) for a specific reason, I kinda engineered it I think. I didn’t have many friends around ... I had some friends around because there was a (Sport) friend who became a very good friend actually....so I did have a release but I knew exactly what.. I tried to organize it so that everything had a reason.. that would go down to social and everything.
Participant 1: I am somewhere weirdly in between the two of you I think... probably.. in that I was at university.. but no one at my university knew that I was anything to do with (Sport)... because it was (Name) and none of them knew what I was doing.... So it was quite a good opportunity for showing off in shorts... but no one really knew what I was doing which was kinda quite nice and I didn’t really hang out with them... yea I didn’t hang out with the big boys at college at all... you know the sort of stuff you were saying “taking a masochistic pleasure” or whatever... in not joining in with things, I really quite liked and I was living in the Olympic year itself (Year) and the year before the Olympic year... I was living in one house in the halls of residence where I had nothing to do with anyone else there really, and the following year I was in a flat with some people who weren’t at my college... and then I was living with another rower and a few girls... and I used to not believe that he was staying up late and smoking dope or staying up all night and doing what students did and I was just... would go to bed at a sensible time and get a whole of sleep and thought that was really clever and couldn’t believe what he was doing... and that made me feel really good.

Participant 2: Yea, me too, I had that feeling.. it is almost a sanctimonious thing ... its like going out to a pub and ordering an orange juice and everyone with a beer saying “no you should drink beer” “why don’t you drink beer” “no I want an orange juice” and being quite stubborn and snotty about it.

Participant 1: yea, yea, absolutely. I really made a point of doing it and something that is a ridiculous sort of thing is that..... I used to travel to school on the train and every body would be smoking on the train and I made a real point of not doing it... even when I was eleven, twelve... and I wasn’t even (Sport) by then so no point in not smoking. .. and didn’t smoke at all, never smoked at college or anything like that.... I actually smoked a cigarette at the post medal party in (Year) Olympics... that was a really good example of that kind of thing ... and once the mission was complete... then alright ‘lets find out’ ...but I was on that mission that whole time really.

Participant 2: I had a wind down thing... period during the year though ...I did... I sort of boxed it ... because I did all this masochistic thing and then I... amazing to thing about now... but I used to go pretty much ... about a week... I remember being completely pissed for about a week after winning a competition... this was before the Olympics... its like I feel so much strain holding this thing... not so much strain but there...and I would just let it go...

Participant 1: Would you?
Participant 2: I would let it go for about a week...and for a week I would be ... whatever...
Participant 1: what, before the competition?
Participant 2: No for a week after the competition, any major ones... like in (year) ... in (Year) we had the world championships in (Name)... and for a week after (Name), I was off my trolley
Participant 1: yea, I was exactly the same
Participant 2: and the I would go. “Okay, now... I’m back on it now” and I would completely shut all that down (i.e., drinking, partying etc.) and do that other thing (i.e., training regime, etc.).

Participant 1: I was exactly like that.
Participant 2: But I felt I needed to do that.
Participant 1: I went really over the top when I was going out getting drunk and stuff.

Interviewer interrupts at this point to narrow down the conversion

Interviewer: Okay, it is nice to have a conversion for a few seconds and then let you carry on... but to narrow it down it a bit.... Because what we are talking about is fantastic... you talked about your experiences of performing... at that level... then you talked about the thing which go with it... in terms of your lifestyle....and we want you to think about all of it... yea not just about performing, it is everything... your lifestyle and so on... and the abstaince, etc.... now just for five minutes just before we get into something which is quite structured... I just now want you to use the word mental toughness and just talk about mental toughness.... And your experience... yourself, other people, whatever... just for five minutes or so.... And carrying on the conversation you have been having because you haven’t been talking about it really.... Just drawing out some key things.

Participant 1: I thought I had mental toughness because I wasn’t quite in the situation that you were (to Participant 2 & Participant 3) where someone else was making me do the training... or where there was a real routine to go and do the training... but that I used to have a couple of hours break between lectures and so I would cycle off to the gym and I would ... half hour on the (Machine), hard effort... I was getting better scores then than I do now... than I did six months ago before the last Olympics... and I would jump on my bike and cycle back again... and I thought I was been really tough on myself... I think I was pretty aware I was been tough on myself...and I was really keen on doing that and this fits in with the whole of the rest of the lifestyle... where once I had completed the race and once I had won I didn’t do that the same way... I didn’t do that the same way last year... if I compare (Year) to (Year) I didn’t do that in the same way

Participant 2: So you are saying that in terms of getting yourself to ... you (Participant 3) had a routine... I had a routine maybe... you (Participant 1) didn’t have as much routine... because I’m not so sure if I could have done it without a routine.

Participant 1: I didn’t have a coach telling me what to do... I used to go and do... I used to do particularly machines but also weights... I used to do considerably harder than anyone else ever did... considerably harder than any other physiologist or coaches would tell me to...because I wanted to... because I sort of thought that that was really important... and it is a classic sort of mental toughness situation that (Name) and I used to go and put two (Machine)s next to each another and do 20K once a week which is 70 minutes...and I used to pull 1:45s or (Name) would pull 1:45s and I would bring mine down... you would have to be outside and then you would have to bring it down to get just inside 70 minutes which would be 1:45s and I used to really step it on with 10 minutes to go and leave myself absolutely flogged at the end of a 70 minute session... and we would be able to see each others score every single stroke which is a sort of classic... mental battle and physical battle... and I have not done that since... and I used to get off and thing “right no one in the world has
done... can do that... no one... they might be able to do it, but no one does” and I used to make myself do that.

Participant 2: Do you know that no one could do that or did you just feel...

Participant 1: I’m pretty sure that not many other people could do it... and I was absolutely positive that no one else in (Country) was doing it... I felt that a few of them could... but (Name) and (Name) wouldn’t dream of doing it... They would be far too sort of physiologically structured and sensible... but I really wanted to do that... because I was doing so many things for myself that I was controlling... doing so many different things... actually to what they were doing because they were the big... we had to be beaten... and we did lots of things different to them and that felt really good.

Participant 3: I think I was really lucky when I started (Sport) when I was about 13, 14... basically being surrounded by Olympians because where we rowed in my school, it was a place called (Name) which is where the men at the time trained and this would have been (year) and the (Country) men had just won a gold medal in the (Year) Olympics and they were all at this center... so we spent a serious amount of time with them and you would just watch... so you would see these guys do a piece and collapse at the end... so you think “Wow that’s how they do it, I’ll do the same” so I’ll make sure I’ll try as hard as they do, I’ll try until I collapse. So my whole kinda perspective on how to be tough in (sport) I think was gradually built up by being exposed to these fantastic people. Then I go to the university of (Name) and I have gone from being big fish in little pond at high school to little fish big pond with again not necessarily all national team people, although there were a considerable number at (Name), but just top university (Sport) so I was constantly... I remember in my first year, I sat down with (Name) and said... this was in the first term... I said “I’m determined to get in the varsity eight in the second term”, because nobody else has done that... nobody else, no first year university student ever made the varsity eight, which is the top university team, in their first year, it usually came in their second year, and I did, I did the first term in the junior varsity and I made the varsity team in January, and I’m sure it was just been exposed to people and actually saying it to somebody... and again it was the whole picture the whole system, and you know we had the (Country) mens’ and womens’ team, we had all distance runners, we had a lot of (Sport) based in (Name). You were just surrounded by almost greatness all the time and just constantly.

Participant 2: Did you see examples of mental toughness?

Participant 3: No, but I tried to do then myself, so again on the machine, you would see two people... I remember to this day seeing two people, two varsity women in the first term sitting side by side on the machine doing a piece together, well I did it... I would find somebody who I thought was comparable with and I would say lets do a session together... and gradually it just kinda built up and I mean exactly that what you described with (Name), I did that all the time.

Participant 2: Do you think that.... Is it a pain thing then? So.. I’m just trying to draw up to my thoughts what you both just said... because it’s about...

Participant 3: it is challenging pain I suppose but for me it was building this confidence... it was like... I really felt deep inside of me that I could do this. I spent ten years figure skating and got nowhere and suddenly I found this sport that picked up
pretty quickly, got loads of positive feedback about ... you know “you’re quite good at this... you should keep going... you should go to this university... you should speak to this coach...” and I was... I don’t know I just felt so determined to want to do something with this that I was open to everything and anything and gradually all the openings got fine tuned as people... the right people, the right coaches... started tailoring things that were in the right direction. So it was a bit of a... later the pain thing came through training because I had to sort of keep challenging myself physiologically... but I think initially it was just “gosh I am quite good at this... I really want to ...how can I just be better and better... and I am going to look at every single good person and see what they do and I’m just going to replicate it and...”

Participant 2: If you see somebody like...doing something now like until they fall off something... it is probably hard to think of (Sport) because you have done it... but I look at (Performers) when they fall off (Machine)s and think I could do that ... not the speed but I could do til I fell off

Participant 1: Yea, yea
Participant 2: the only thing that stops me is if I am in a gym somewhere but it is almost like... if I saw someone in the running the marathon and they collapsed at the end... I think “yea, I could do that... I could give it all until I collapsed”... does that make sense?

Participant 1 in agreement throughout Participant 2’s comments.

Participant 2: I’m just trying to go with your role model thing i.e., seeing people do that thinking “yea I could do that”.

Participant 1: Yea
Participant 3: But I think other people don’t, people like... there is something unique in us so that we do that. Why do I do that and the two friends I (Sport_ with in school ... we all went to university together, all three of us ... we were going to (sport) at ‘(Name), I was the only that went on ...

Participant 2: I was thinking about this replicating, because I remember doing a triathlon when I was about 22 it was in the off-season ... with my brother, he was quite good at (Sport) and I took it steady.. it was a 400m (Sport) or something ... but then we got on the running bit and I overtook him ... it was a lap thing...and I remember saying “come-on, lets keep going” because I knew I was on a pain... something going on in my head .. and he says “ah I can’t do it... I can’t be bothered doing it” and I was just determined to live on the edge of ... like dropping over... if you see what I mean.

Participant 3: I did the same thing with the triathlon... it was like ... going to do this Olympic distance 3 hours

Participant 2: Were you going for this or ...was it target driven, were you going for the 3 hours, because I didn’t know even the qualifying time.

Participant 3: well it was going to so up because I had never done it before so it was a bit of a random... I just thought I could do...

Participant 2: what made you tough... what made you mentally tough in the triathlon?
Participant 3: The world champion was in the race... (Name) and I had known her from before... and I just remember seeing her and thinking she is going to beat...
she was miles ahead of me but ...I just wanted to be like her... I just wanted to push myself as hard as I could.

Participant 2: Did you beat her or did you think you could?

Participant 3: No I knew I couldn’t beat her but I wanted to sort of feel like her... I wanted to almost look like her... you know what I mean...look strong and no be...I did want to be kinda earthly...I just wanted to be like Joanne Riche... now she was coming in on her last 2K as I was starting my first 2K...so she was miles ahead but I remember seeing her and saying... right, and just wanting to push through.

Participant 1: Something you said there “you wanted to look like her” looking strong, I would say when I was at school growing up, I wanted to look like people looking really shagged... like you said (Participant 3) falling off the... like you saw the guys falling over their oars and stuff... and you talk about people falling their (Machine)s and stuff... that is what I wanted to look like and what I wanted to ... demonstrate that I had done to myself... and we used to do sessions when I was at school which were ... like we used to do a run and we would go in reverse speed order from the previous week and everyone would finish that run trying to catch up the guy in front and keep ahead of the guy behind you. And I would always finish that run... and every else would finish that run as I perceived it with their lungs hanging out, on their hands and knees lying on the tar-mac outside the school when they got back. And when we did our (Machine) tests you would...if you didn’t fall off the machine there was something... you know you were soft...

Participant 3: But they did all look like that did they?

Participant 1: No, I think in my school they did...in my school first eight they all did

Participant 2: Oh so you not talking about your class...

Participant 1: No this was (sport)... this was running with the (sport) at school

Interviewer interrupts to take participants outside the performance context

Interviewer: In your lives outside sport, did mental toughness figure there at all? Or was it all about performance? Anything at all outside the performance environment... where mental toughness was important

Participant 2: yea, well maybe, the first example that comes into my head was playing cards, I think now I am not like this... in fact I know I’m not like this... I don’t give a toss whether I win or lose anything... but people say that I probably do... I have a trace of it... but when I was in...playing games outside sport, I was pretty competitive. I have made a real effort now not to be competitive because I know it is not a nice thing to be...but it was with (sport)... ... I remember some young kid being there and ... he was losing money or something ... it was his first trip...he had no money and he was losing all his money...and somebody said to me ... because I was about to win the next pot or whatever... somebody told me to take it easy on him...so I said “fuck it...that’s his problem... if he is prepared to play the game I’m prepared to
take away all his money... I don’t care how much he needed it... is that being an arsehole or mental toughness ... maybe that’s not the pain mental toughness but it’s like life’s hard ... you ... get used to it ... I remember (Sport)... racing a kid about 3 months ago... a relay where you get 4 people to do a length each against me... a kid started threatening me... well not threatening me... he says... he’s 10 he says “I’m going to have you... I’m going to have you” I thought “No you’re fucking not” in the race if he came next to me I would have kicked his ass.

Interviewer: We will have to edit all the swear words out but eh...okay we will go on this a little bit further and then we will get to the structured bit... because you are almost able to distinguish between things you did in certain situations and the way that you were or are... and you may be different as people to didn’t achieve your medals.

Participant 3: I know what I am... I am very ego oriented ... if you look at goal orientation theory... cos... I avoid tasks that I think I might fail at... this is big picture... just generally... if someone says “Participant 3, lets have a game of pool” I know that I am crap at pool and I will make any excuse to not do it... not any excuse but I will really... because what I find and when I have been thrown into a lot of situations that happen just a few weeks ago with the rugby on the ropes course... I am about to do something and one of the girls says “oh Participant 3 you can do this you are a double Olympic gold medallist”... yea I’m like “with an oar... give me an oar” but I am walking across a piece of wire... so people make this automatic assumption that because you have been good at something that you are good at everything... and because I know that I have a unusual amount of ego orientation... or like to be better than other people basically... or like to be competitive... that when I am put in what I see as a threatening situation... because I have never done it before... it is slightly new... I know that I am not very good at it... I don’t want to do it because I think people are looking at me thinking “Oh she will be able to do... she should be able to do it”... my reaction... my response is to back off... so I think that I carry that around with me... I think I use it more in activities that in lifestyle... sporty activities more than anything else in my life... but that’s because sport is so dear to me... so you know... does that make sense?

Participant 2: I’m not like that... I don’t think that way... I’m just wondering if I have changed a lot since then... I am trying to reflect back if I was like that... because now I’m not... now I don’t care... if I am crap at everything... as long as I am good at something... I want to be good at one thing... and if I’m... I don’t know....I can’t remember back then if I wouldn’t do stuff.... I might have been like that

Participant 3: Mine has toned down... I recognize it because of my Ph.D.... all the Ph.D. stuff I did....that kinda brought it to light... I think it has toned down a little bit.

Participant 2: I can’t remember
Participant 1: I’m not sure if I am like that or not.
Participant 3: Like when you went skiing and you had no problems about going down a black diamond or mogul run... I didn’t do it, did I. We went down flat black but...

Participant 1: Yea you came on all those but... on the stuff that you were good at you were really good at ... Oh right... you weren’t interested in the other stuff.

Participant 2: I expect people to be... when I take people skiing... because we go on a skiing thing ... I even took Liz and she had only been skiing twice... and she said “don’t take me down any hard ones” so I took her down the black diamond one.. that shouldn’t be a problem...you know it doesn’t make any sense.

Participant 3: I like challenges like that... that I basically know I can do... no I will go down a green mogul... I will have a go... but there is no way I would go... under the chairlift ... no way... okay that’s just a lack of confidence or something in me... but it is also me wanting to feel like I could do it.

Participant 1: You see I might mend a lot of things but I will happily go the sort of ...under promise... “I’m no good at this” and try really hard.

Participant 2: Yea, me too.

Participant 1: And even practice in secret... but I will... I don’t need to be the best. I’ll happily play rugby...

Participant 2: But... under promise of being no good... you let people you not necessary.. and then all of a sudden you come out and be... that happened to me at Austin’s stag weekend... because I ... since I stopped (Sport) my story was all about me being crap as a kid at stuff... I’m crap at this... I’m crap at cricket.... And we played cricket at Austin’s stag weekend... and Austin thought I was shit and didn’t want me on his team... and I thought “go on the other team” and I mean I think that had to do with a lot of it...I ended up hitting 6s and 4s everywhere... and I was actually quite good at cricket but I had forgotten... because I had told so many stories that I wasn’t very good at it... but I actually was.

Participant 1: If it was physical I have always been able to do it... in the same kind of way... if it was academic then I’d know I might not be able to do it... so I backed away from it.

Interviewer interrupts to move to the structured section of the interview.

Interviewer: It should be fairly obvious what we have been doing... it has been an orientation session, reminding yourself of stuff and now you are down to mental toughness. Now I am going to hand over to you (Participant 1, Participant 2, Participant 3) again but I want you to do something structured now... for the next fifteen minutes... I want you to actually complete this.
Points to Definition: Mental toughness is:


Interviewer: What is it, Mental toughness? And I want you to think about the performance arena that you first went to and then think about outside the performance arena which I prompted you to think about... about your life style and life experiences, etc.... and I want you to come up with a definition.

Participant 2: Like a sentence, not bullet points?

Interviewer: A sentence if possible... if you want to use bullet points that's fine... we will revisit the definition later but I think if you use bullet points you will end up... I use this analogy with a car...if I say “a car is.........” what people generally say here is that basically a car has 4 wheels, engine, doors, etc.... that's not what we want at this point... that's what we want later...we actually want you to tell us that a car is something that transports you from A to B. .... In this study... we have to be very careful here as it is a scientific study... I don't want to lead you in any way... but at the end of this we want to know what you think made you different to the person or people who finished second...so why is the best in the world the best I the world and not number 2

Participant 2: can I just ask a little question? Because I think that the person who came second in my race had it Mental toughness as well. It is almost like a respect for them.

Interviewer: There may be something.... Just something... I just want you to think at that level. We are talking about the best in the world, not people who are just good at what they do.

Participant 1: The guys who we beat were the best in the world twice and we were the best in the world once, so they must have had it Mental toughness... but they didn’t have it on that day or they didn’t have it in as big bits as we did have it.

Interviewer: And I want to think beyond yourselves as well

Participant 2: You can take an example of that, because I’m just thinking that there are people that I beat that had won an Olympic gold before... so he was mentally tough but I think on that day... I don’t think that he was as mentally tough... his mental toughness was down a bit actually.

Interviewer: Don’t forget that you are talking about a particular set of circumstances... in a specific situation... it is the sustainability of things that we are interested in, that people can repeat over and over again, etc.... that is why I am trying to suggest that it goes beyond just the performance arena... there is something outside that... so I have given you a pen... I would like you to come up with a definition and write it down..... we will revisit it later.

Participant 3: Do you want to know what my definition is... this is what I say to the athletes that I work with.... Well not a definition.....
"I say that mental toughness being confident in your ability and then believing in that confidence"

That’s my little slogan to the athletes that I work with... because my perspective on it or the... Understanding is we were all really good at (Sport), you were very good at (Sport) the confidence... your confidence in your ability... you could do this thing... you could push yourself through water... pull yourself through water... but when the pressure came did you actually believe in that confidence... does that make sense... so you spend years training... I can do that, I can row, I can go fast, I know exactly what I can do... but mental toughness to me is when the pressure comes, that can be pressure in training, it could be pressure in competition... do you actually believe... did I deep down in my gut believe that I could do this...

Participant 2: Did you do or that you were better than everybody else...
Participant 3: Well... just... not quite there that deep... but in myself... I actually believed in that confidence to be able to row well and I believed in me and I believed in our team... I honest hand on heart believed... you could put any pressure on me and I could still perform... so I believed in my confidence

Participant 2: All the time?
Participant 3: All the time... well by (Year) over the years I built my confidence in my ability and my belief in that confidence.

Participant 2: Did you retire after you had won?
Participant 3: Yes, I trained for a year but I didn’t race again properly.
Participant 2: Because I did what you (Participant 1) did in a way... because I did another 4 years and lost it, I came 8th in (Year) and I think... the period I won things I believed I was the best... I believed it and if I am honesty by (Year) I kinda didn’t necessarily think it deep down...I didn’t if I am honest.... Not really think it but I thought I mightn’t be because I had been beaten a couple of times... it is almost like I got something...I’m sure it is not a coincidence that every race that I had won, I walked into thinking “I’m better than everybody here” I really believed it and then in the last year I didn’t believe it.

Participant 1: yea, I would have concurred with that if we had won in (Place)... because in (Place) I was trying to revisit how I felt in (Place)...and I would say that belief was really, really important...and I actually believed we was going to win...and there was that interview with (Name) after the race... the guy said “when did you know when you were going to win?” and he said “Oh after the first straight or after 100m or something I knew we were going to win” and if you had interviewed me I would have said exactly the same thing... and about half way I was absolutely sure that... it was a stone banker that we were going to win...it was only when we got to the end that I realized that we hadn’t won or with 250m to go I realized that “I don’t think we’re not going to win this”... and I think I believed in myself just as much... as I did in (Year)... and the difficult bit is that I can’t tell, whether I believed in myself or not... or I just think I did... and I think I did in (Year) as well... I think I sat on the start line thinking... just as much that I am good enough to win this race... no that I am going to win this race, not that I am good enough... its... there is no question
about it... no shadow about it, I will win this race... I am sure I was thinking that just the same in (Year) as I was in (Year).

Participant 3: Cos I think, and I don’t know how you prepared... like the difference between (Year) and (Year) ... you see I would question that... that whole belief got you to where it got you and some of the issues that came up..... without that belief you may never have made the final.

Participant 1: Yea if I compare (Year) to (Year) again in terms of belief, in (Year) I massively believed in (Name), the team that we were in, and the coach who was coaching us and the program that we had done. In (Year) I pretty much believed in (Name), I would say close to as much...possibly as much as I believed in (Name).... But in didn’t believe the equipment we were sitting in was the best equipment for us... it was a bit of hardware and I didn’t believe the coach was as good as (Name)... and I didn’t believe the training was as good what we had done... now you say that. So there is a belief issue.

Participant 3: To me that’s the difference in those two.

Participant 1: Because (Name) obviously believed in it, because they won... he had the same equipment, the same coach, and the same program as me... but him and (Name) and (Name) and (Name) thought that was really good.... While I spent the whole year thinking it was really crap.... And why wasn’t anyone listening to me... how could we possibly compete when everyone knows (Name) are better. And (Name) won’t even let me buy one with my own cheque book...so I hated him for that.

Participant 3: And that’s why I think belief is so important... not just the belief in yourself but your belief in the system. That’s why when I go back to saying ‘everything I was surrounded by’ ...it was the whole support network that existed that made me believe even more in me but also made me believe in each person who sat in front of me... because we all believed that... in each other... plus we believed in the coach... plus we believed we had done all the right things...

Participant 2: I believed in the system I had constructed... I didn’t want to believe in other people, so I didn’t... I didn’t want them to effect what I did...I am just trying to think..... It might be a difference in sport which you needed to believe in, I guess... but I am just thinking back to ... not my Olympics... and there were 3 or 4 people... there were 3 people in the race that had the world record... I remember leading up to that race thinking “I am going to get this world record... I am going to do it first” and there were 2 or 3 races before hand and I just didn’t want anyone else to have a race before... to get there before me... do you know what I mean... because I knew I would do it when it got to that race. And I did do it and they didn’t do it. So the belief in you doing it ....I remember thinking “shit, I hope no one races before hand and just pips underneath” because even if I get in this same race with all these four people... which I knew all four were going to be at this race... but the German was going to race in Germany the week before, the Canadian was racing in Canada a week before... and I was holding it for that race... so I believed I was going to do it and I believed in the construct around it....I pissed a load of
people off though because I pulled out of the relay team... this is how not a team player I was... the relay team was a day before and we had a chance of winning a medal and I pulled out ... and the head coach gave me so much shit...

Participant 1: You see I think that was totally normal... I wouldn’t dream that you should get into shit...

Participant 2: the rest of the team did.. and the rest of the coaches did... gave me shit and my coach shit... he should be in the relay... well he is saving himself to go under 1 minute... well he should be in the relay team, he is (Sport) for his country... No he is not, he is (Sport) for himself.

Participant 1: I think that is an important thing... I very much raced for myself and for the people around me.

Participant 3 (agreeing): I think I trained for myself, particularly... the teams formed I created in myself and with each other a greater sort of sense of success and an achievement of wanting to win and to beat other countries... I was no longer trying to beat people who I was now (sport) with... whereas during our training season... you are.

Participant 2: Its absolute belief, isn’t it.
Participant 3: I mean self-focused-ness comes in it there
Participant 2: Focused yea big part
Participant 3: which is a nice way of saying selfish, I think.

Participant 2: My mum always used to call me selfish... she used to say “you’re the most selfish person I have met” ... it was like “yea mum, whatever... so what I am going to win the Olympics”.

Participant 1: what, you were saying that as a kid?
Participant 2: Yea, when she used to get upset with me, when I would do something, it was selfish.

Participant 3: And it is about absolute belief when the.... Pressure comes on... I have just seen it across different groups of people now, having stepped away from sport... where I have seen people really confident and able, then when the pressure hits just crumble... when there is no pressure and it is still competitive ... they actually do really well but it is when the really serious... like take rugby for example when England play Scotland it is one thing, when they play the Kiwis it is like “still rugby” you are still playing the same game... they absolutely fold... and it is the belief inside.

Participant 2: I think it is something to do with the pressure, how you deal with the pressure is quite important...because I didn’t deal with it in (Year) and did deal with it in (Year)...

Participant 3: I think we dealt with it really well... given our circumstances with losing one of our stroke person...

Participant 2: Yea, but how did you deal with the pressure... that’s why I was interested in earlier (talking to Participant 1) ... in how you dealt with the pressure... and how you dealt with that day before you went in... it is how you .... It is to do with belief, absolute belief... so is it, you are always going to be tough...because you believed you were going to win it... or believed you could win it... sorry what was it?

Participant 1: I think I didn’t hide from the fact that I was quite scared and I was quite happy to walk around and carry that big quite scary with me... whereas in my later career.. I thought right... I switched on the ‘off’ switch... the on/off switch we
Participant 1: By the latter end of my career, I was like “I can handle this... I will deal with it later, and now I will talk to (Name) about how he is getting on... whether he is having a nice time.

Participant 2: I couldn't have let any of that stuff come in... I remember my parents... somebody said “hey your parents...” this was the day before the Olympic final “hey your parents are here, they have been watching... they are outside of the Venue” and I said “I’ll see them after my race” I didn’t let any of that stuff in... because I knew that might make me crack a bit ...

Participant 1: Yea, in (Year) I wouldn’t have, in (Year) I would have.

Participant 3: That’s the one thing that I would have been fascinated to have kept going and done what I have done, but stuck at the (Sport) to see how I would have changed... given what I know now and how I have changed...

Participant 2: I don’t think I am tough enough to do it now... if we are talking about mental toughness... I don’t think I am tough enough to do it now because I want to live my a life different way because it was right then... but I think life is too short to be the person I was then, I think... and it worked then... it had to be so intense, so ‘don’t want to see my parents’ but I would like to be you (Participant 1) in (Year) ... you know I always wanted to be that person, but I couldn’t do because I thought if I did that it would knock... this construct wouldn't survive, almost.

Participant 1: And I tried it and worked out it didn’t work... sadly

Participant 2: do you reflect on that and think it didn’t?

Participant 1: yea, I think I was too laid back, and I'd think what could happen now, where could I go now, right now this is what has been in my mind... about taking up the sailing thing... and if I am... this is a quote by Carl Lewis ‘if I am prepared to pay the price’ and I’m thinking I’m not actually prepared to pay the price again, I paid in (Year) ... at this moment in time... possibly I might be in 18 months time but right now I’m not going to do it for another 4 years like I did it in (Year), because what I did in (Year) wasn’t what I did in (Year) ... it was being ‘good bloke’ in the team...

Participant 2: But not being so focused, so in to the whole thing.
Participant 1: yea, and it was really enjoying being an athlete... and it was (Sport) with a bloke who I was sort of able to control the agenda with a bit and do my own program and try and control things I wanted... and when I didn’t get things I wanted, like the equipment then I would really throw my toys around... whereas with (Name) I wasn’t allowed throw my toys around.

Participant 2: I got to that stage before the Olympic in (Year), and I realized it. I realized that I have become somebody... I didn’t want to do it anymore, I did want to... everything you said then (Participant 1)... is where I was in (Year) and that’s why I knew I had to retire... I was not prepared to balance it anymore

Participant 3: that’s why I stopped in (Year)

Interviewer interrupts to bring back participants to objective (MENTAL TOUGHNESS definition)

Participant 1: Well we have got something about absolute belief, haven’t we
Participant 2: we got absolute belief
Participant 3: I think there is self-focused-ness.

Interviewer: Are there bits of the car though, the engine and the wheel?

All Agree that they are

Interviewer: Because we will spend a lot of time on that, it is the over riding thing here ‘a car gets me from A to B’.

Participant 1: I was going to say that the difference between me in (Year) and the (Performers) who were second was a sort of desire, wanting it sort of thing... and me in (Year) was that in (Year) I really, really wanted it.. that sounds so trite but I haven’t got a better way of describing it... they probably did in (Year) and probably did in (Year), but didn’t want it quite enough in (Year)

Participant 2: My (Year) I wanted it and (Year) I thought “well I not really... I want it but...”

Participant 1: Yea, it’s not the really, really
Participant 2: It’s not real hunger and desire.

All: Mental toughness is a hunger and desire....is wanting it more that somebody else...

Participant 2: How do you know you want it more than someone else... I agree with you.. it is a statement I have often used and I remember often saying it in my (Sport) career... “I want it more that anyone else” ... But was that me really wanting it, was it me and how do you know... how do you know that you want it as much as...

Participant 1: Because it is only .................... it is a very straight forward thing..., and they must not have wanted to do it as much as I did... Those blokes who beat us.. those frenchies must have wanted it more than me and ed did.

Interviewer: Sorry can I also remind you about the earlier conversion where you came outside the performance arena and talked about things that you did or didn’t do, because you were an elite athlete, etc. So you might just want to think about that as well
Participant 2: It’s an all encompassing life focus that takes you to a particular point... it is something like that... you give everything up... you don’t give everything up... you make this thing the focus of your life.

Participant 3: It’s a priority for your whole existence.

Participant 2: It’s a way of life isn’t it really, because you tough everything... you make everything gear up to it.

Participant 1: Yea, yea.

Participant 3: Yea, it’s a focus for it... it’s quite a strong focus

Participant 2: That’s not mental toughness though...

Participant 1: Is it a sort of pre-occupying sort of thing

Participant 2: Yea, it probably comes first in your mind... it’s a filter isn’t it.. you filter through everything else...

Participant 1: And perhaps in later times it was ... it might have been pro-occupying it was in my mind that I was an Olympic (Sport) the whole time last year but I was less... it was less important, perhaps... being a good bloke was sort of as important or whatever...

Participant 2: So is it a filter for your life... mental toughness... you do it all, everything with mental toughness... I’m not sure if we are just talking around it.

Participant 1: Is mental toughness the thing that makes the difference or were we just lucky?

Participant 2: I’m convinced it made the difference... because through the early eighties and through my career, the guy that came third, the Russian guy... who should have came second...in my (Year) race... every year... three years before and two years afterwards I beat him every time by that much (making a hand gesture to show small amounts). I always beat him and he was always second... I felt sorry for him in the end... I know that he didn’t stop believing that he could beat me... I sure that he didn’t in the beginning... and I know that he gave up... because there was one specific moment in (Year) ... I won the gold medal in (Year) ... and I broke my wrist and I didn’t compete for a long time... I think he thought I quit... and he didn’t expect me to turn up... I didn’t race him the whole year... I turned without a world ranking or anything because I hadn’t raced anywhere... in (Year) the Europeans and I remember seeing him sort of being more confident than he looked before and then in the heat I broke the world record and he collapsed... and I saw him collapse and I think it was a collapse of his mental toughness.

Participant 1: Is mental toughness a sort of all round organization of your life, because I can think of some blokes who are pretty hard.... Who race pretty hard and look like they have a lot of pain but they don’t win anything...

Participant 2: Yea, I like all that... ‘all round organization of your life’

Participant 3: So how does that somehow... takes it further to separate those who win and those who...

Participant 2: You organize your life through mental toughness filter... is that what you are saying... I’m lost now...

Participant 1: Its more an overall organization its an overall pre-occupation in your life.

Participant 2: Is it the great place to be mentally tough though.... Or a great place to win the Olympics and be the best in the world... than anybody else ever... that’s the
aspiration... mental toughness is the way to do it because you measure life in a
tough way... you know what it means to be the best ever, don’t you
(Participant 1 in agreement throughout).

Participant 1: Isn’t pain things what you are so you can be the best in the world?
Participant 2: Mental toughness is the defining factor, cos we believe that don’t we?
Participant 1: Yes
Participant 2: Do we?
Participant 1: Is it the defining factor or a defining factor?.... because I know some big
softies who won....

Participant 3: When everything is right.... Physiologically and everything it can be the
defining factor

Interviewer: Perhaps the problem is that we are trying to make this into a sentence

Participant 3: I keep coming back to the parts of the car...
Interviewer: Bullet points are okay as long as there aren’t a long list of them... for me it
has got to be one or two or threes absolute key things. If you find it easier to do that then
that’s fine.

Participant 3: Well I think it is an absolute belief

Participant 2: It’s an absolute belief in your right or destiny... do you not think?
Participant 1: Yes... and can cope better than everybody else
Participant 2: It’s an absolute belief in your right to have this or your destiny to have this...
Participant 1: Or is it just an absolute desire, belief that it is your right....(Participant 2
agrees) To be in all our cases the Olympic champion

Participant 2: It’s an absolute belief that it is your right to be the best at cards, the best at
shopping...

Participant 3: I like... I think the big defining thing between people who do and don’t is this
... wanting to be better than other people...

Participant 2: Yea,...I struggled when I ... broke the world record... it almost got boring...
not boring but it was like just beating my own time... I’d much rather have
somebody else’s world record to beat, when it was my own world record, well
its like...

Participant 1: Were you winning by quite a lot at that time? There was no one close to you.
Participant 2: No, there were people .2, .3 out, behind... but I just knew that they weren’t
going to get me... until one of them did and I just thought “well I’m going to
quit now” because he was 17 and I was 27.

Participant 2 and Participant 1 ask Participant 3 what she has got (i.e., definition)

Participant 3: Absolute belief to be the best and do everything possible to achieve your
destiny.

Participant 2: But your destiny might be to lose (Participant 1 agrees).... I think it is a right...
it is my right to (Participant 1 agrees with the word ‘right’).... have this...
it’s yours, nobody else’s.

Participant 3: Absolutely
Participant 1: That you have the right.... to beat every one else, to be the best in the world
Participant 2: Absolute belief that you have the right..... to beat every one else, to be the best in the world..... Once you lock on to the fact that you could be the best in the world... it is kinda a bit of an exciting time.
Participant 3: I was kinda like thinking in terms of self-focused-ness... you know you do put yourself first and you do absolutely everything possible to put yourself in the best possible position every single time...in some way (Participant 2 agrees).
Participant 2: And that's why.... The whole nutritional thing... water will help give you that edge... if you drink water it will .... It is doing whatever it takes, isn't it...I have to admit, mental toughness is doing whatever it takes (Participant 3 agrees).

Group discuss the word 'destiny' and agree on not liking it. Interviewer comments that the group are quite close.

Participant 3: Well we have the absolute belief that you have the right to be the best and do absolutely everything (Participant 2: whatever it takes)

Participant 1: Something better than to be the best, to me that is not enough

Participant 2: I was thinking to be the best I could be...
Participant 1: to beat other people...............absolute that you have the right and will... and you will be better than anybody else ever... better than anyone has been before... you are prepared to conceive that someone will be better in the future at some stage (group in agreement)

Participant 2: And I will do whatever it takes to get there... in the bounds of the rules... when you can’t do it within the rules then that means you are weak.

Participant 1: And you are prepared to pay the price to get there.

Group agrees and writes up their definition of Mental Toughness on the flip-chart:

Mental Toughness is:... Absolute belief that you have the right and that you will be better and can cope better than everybody else has been before, and will do whatever it takes to get there.

Break for Lunch
• Interviewer instructs participants to spend some time jotting down qualities or constructs of the ‘Ideal Mentally Performer’.

• Interviewer: you probably want to spend a couple of minutes working quietly or whatever you want, just jotting down now … what are the attributes of Mental Toughness. I am going to ask you to think about a person, a person that actually won’t exist, because we are talking about an ideal mentally performer….so if I was constructing my profile of the ideal golfer. I would probably think quite a lot about Tiger Woods, I’d think what is it about Tiger Woods that is important in terms of his power, his mental make-up…. I’d probably think about Faldo, performing under pressure, I’d think about Participant 1 Norman, in terms of his charisma and things like that, because he makes a lot of money… off the golf course, he probably makes more money off the golf course than on it. So I would pop all these things together in this one golfer and it would be the perfect golfer, the ideal golfer. So now I want you to think about the ideal mentally tough performer based on this definition (The definition that they just came up with)… and what this performer would have… so it’s the bits of the car….and you have already talked about some things… I mean Participant 3 noted something about ‘having confidence in your ability and being confident about that confidence’… Participant 1, you talked about preoccupation…. So we now get into the detail of it…yea…. self-focus, etc., you mentioned all those things…. But remember it is about the very best in the world and them being the best in the world…. And what’s going to make the difference… its more than being confident, focused, etc…. we know all that…I will let you manage it….but again I would someone to write underneath here (i.e., Flip chart)….. the key attributes……good, any Questions.

Participants spend some time writing and thinking about possible qualities

Participant 3: There may be certain aspects of mental toughness that exist to the training athlete and certain aspects of mental toughness that exist to the…in competition… and there are subtle… lots are going to be the same… but are there subtle differences that might exist…in the definition of mental toughness.

Participant 2: But when you combine them you say the best person would have them

Participant 3: Yea, I was saying as just perhaps another way of looking at it… because I think about the training days, it goes back to the environment and that self-focused-ness and putting yourself first and managing …. What Participant 1 said organisation… managing the day-to-day, making sure that you get your three sessions in...

Participant 2: Putting yourself first....

Participants go silent to think of qualities and write ideas down on paper.

Participant 1 to Interviewer: I don’t know if I am coming up with new stuff, like you are saying stuff that goes beyond the old stuff but I think I got to through coming up with the old stuff. Because I may think “well that’s pretty obvious”, and it may not be obvious...
Interviewer: Yea, that’s fine…. Try not to lose what you talked earlier… when I said the
bits of the car, there was some really important stuff in there.

Participant 1 to Participant 2 & Participant 3: I am sort of picking up on what you said about
training and competition….I sort of think that when I was being really
successful was when I was relating training to competition all the time… so I
found competitive opportunities within training… I went looking for them…
so that you said (Participant 3) You would find someone to sit next to on a
(Machine)... I would try to do my power-cleans quicker than someone else
would do their power-cleans or heavier or I would make up rule of it and other
people wouldn’t know they were in the same competition as me….

Participant 3: I was always trying to catch someone infronf of me, if someone started a
length ahead of me I would try and catch them up and overtake them...

Participant 2: I pretended in training even doing a freestyle set, that I was beating somebody
important to me like victor…but it wasn’t victor beside me, it was somebody
from Leeds…or I would be doing breaststroke and a girl would be doing fly
and I would be racing her because I was imaging being in the race against a
breaststroker… the girl became somebody...

Participant 1: I didn’t often have imaginary friends I was racing against, I occasionally did
but not usually, but I had imaginary situations and genuine people

Interviewer interrupts to ask a question: There is a subtle distinction...are you talking about
what you did to make yourself mentally tough or are you talking about something which was
mental toughness?... because that is a important distinction...because it is the second one we
are after...what was the output... so if you did that Participant 1, I want to know.. why did
you do that...what was the output...how did it help you etc.

Participant 1: So I guess what we all have done is put ourselves in these competitive
situations...but we have made up competition where competition wasn’t
necessarily there... so that when it came to the race I had somehow been there
before and like Participant 3’s last 30 strokes and your last 20m and my 3rd
500m, 3rd quarter I knew it was going to be tougher than anyone else’s 3rd
quarter...

Participant 3: It’s like you are mentally and physically constantly trying to reproduce
competition... certain opportunities when they present themselves you would
never back down... sitting on the (Machine) and falling back down on
somebody...every time an opportunity presents themselves... so if you are out
cycling

Participant 2: Mental toughness is seizing every competitive opportunity

Participant 1: Yea, nice

Participant 3: That we think is competitive… that would push us a little bit further
Participant 3: Turning training into competition, so to speak.

Participant 1: Is that an attribute?
Interviewer: To me it is more of a think that you do or did rather than an attribute, its why you do it, we are more interested in.

Participant 2: You step up when a competition comes...

Participant 3: it is the difference between that and people who are good trainers and people who are good competitors.... Because good trainers aren’t always good competitors...

Participant 1: I think when you say loving competition then it has got to be loving the bit of competition which hurts...the bit in the winning zone...

Participant 2: Loving the bit of competition that hurts is it because...even in training that was the bit I liked the best because when I got out I thought...

Participant 1: Yea, that’s true as well for me
Participant 2: I came away thinking “that was a good session because I did well when it hurt...

Participant 3: What about sports like golf though...those sports don’t have the same kinds of physical demands... so its still loving competition but there is something different about their...

Participant 2: Its having a chance to rise to the opportunity, isn’t it

Participant 3: Seizing every opportunity...

Participant 2: I think we got to get focused in there... the ability to home down on what you are doing right now.... I read that about Tiger Woods....

Interviewer: For me when you are looking at the difference between the best in the world and number 2 or whatever ...I know there is so little to choose between them but that word competition is important... for me the difference is the loving bit...loving competition and there the things we are after..

Participant 1: Yea, when we went to altitude this year, it was horrible we went to Sierra Nevada and just trained there, we didn’t do any else.

Participant 2: You say it was horrible but you loved it.

Participant 1: Yea, machines lined up and you just sit there and say “right today we are doing 20K, followed by 16k followed by waves” and I would sit there and I would see (Name) score and I would see (Name) score and I would want to beat them all the time...and the blokes in the eight couldn’t be bothered...(Name) would compete occasionally and I’ll beat him all the rest of the time, and (Name) would compete all the time and make himself ill... and I would take every opportunity and I would like the fact that I could beat them, and I would like the fact that it would hurt and I wouldn’t want to dream of stopping to sort of stretch my back or something like that... whereas other people who weren’t so good would stop and stretch their back or make an excuse so that they didn’t have to do the painful bit...and for me there is something in that... that it hurts...that that was a really good example of it... because me and (Name) and (Name) I would say were better than all the rest of them... on strokes side.
Participant 3: Something that came out of my Ph.D. was ego orientation, is that worth throwing in... they were ego... the stuff that athletes... the difference between university (Sport) and the international (Sport) .... Remember you (Participant 1) helped with my study was... there was a significant difference between in ego orientation between those sort of college attainment and the elite group which meant the elite group basically thrived in a positive way on the opportunities to beat other people....success to them was defined by beating other people... task orientation was success being defined as self improvement...making gains against the clock and technical gains. And all scores were high but the ego was significantly higher than the paired group which was the same sport but a different level... and all my qualitative stuff supported that... so when we are talking about level of competition... its like the racing bit perhaps as well as like the training wanting to be better and beat other people and essentially... success being better than other people and not just being better than yourself....

Participant 1: I think we are really close there, I think we need to make that into an attribute and move on. I think ego orientation sounds like a good word for summarising loving when it hurts.

Participant 2: That’s different I think, because what you said about the golfing thing... because loving it when it hurts is different to loving it when you beat other people... I was disappointed after the Olympics because I knew I didn’t compete as well as I could have done...

Participant 1: Were you really, No I couldn’t give a shit if I performer well or not... if everyone else fell in and I didn’t fall in quite as late then I would be happy... no that’s not right... that’s a bit extreme...

Participant 2: You wouldn’t be happy if you went to the Olympics and only one team had entered and you got the gold medal because of that...

Participant 1: we had an interesting situation when one guy in the Australian team was injured this year and I couldn’t help been happy... even though he was quite a nice bloke whom I quite liked... I thought “that’s good that’s one less team we have to beat... as it was they still beat us, cos they came second... but we should have beaten them.

Participant 2: Focus.....I think that... I read it in a number of things... I have read it quite a lot over the last 10 years or whatever.. is that it is the ability to forget what is going on around you and focus on that (i.e., what you are doing) and the think about reading about Tiger Woods that reminded me of when I swam was that he is in the open or whatever but... he absorbs all that and he absorbs all that’s going on and it really makes him rise to the occasion, “hey shit I’m in the open”, brilliant, brillant, brillant like I’m in the Olympics really want to be here its great, now quietness while I do this shot... its like to forget all that stuff but are boosted by it but right now I am about to hit a golf shot I can do... I have done a million times and I am just going to relax and hit it....

Participant 1: Did you do that?
Participant 2: Yes, it all happens and I soak it up all these things the Olympics, Europeans, Worlds, whatever I’m in a situation to break the world record and I’m going to
do all that, but right now I'm here... and that's all I am trying to say... about this ability to focus

Participant 3: I put performance focus for exactly that... they way you just described it, that's what I meant about this whole focus... that one single performance and not about doing well.

Participant 1: It's making your bit of it the centre of your world, as if it is the centre of the world, and for me I was quite happy that we raced in (Year) so we were out of (Place) out of the main village... because it made it easier and I went to the opening ceremony, (Name) didn't go because he... partly because he didn't want to go, tired and standing on his feet but also because... we were the centre of it all and it was our regatta, it was in our little place, it wasn't the actually this whole bigger picture with the rest of the Olympics... so for me it was quite nice to go to this thing, see this as nice and then separate that to say right its all about me racing against these blokes...

Interviewer interrupts to check on what the participants have so far. Participants discuss word formation and disagree on certain terms. The ask Participant 2 to relate his experience again.

Participant 2: You are in the Olympics, you walk down the centre after you got out of the village, you do this and its great, I'm walking into my Olympic final where I think I should get it out and win it, I'm about to walk to the centre and get in there and do it, now... but I get in to the ready room before hand for the half an hour and I close down all Olympic stuff and I'm here and I go "Right, I'm now about to (Sport), and I'm now here and I'm about to just go and walk out" and I'm just going to hit this golf shot and I'm just going to do something that is very simple... so I took the whole of like the big stuff and then make it very simple

Participant 1: So it is an ability to .... I'm just thinking of (Place) where you go up to the start and there is loads of people everywhere all shouting stuff and you don't hear any of it and you don't know anyone....it doesn't just get in at all...and you are so focused on yourself...

Participant 2: It doesn't get in that's what it is, its pulling the shutters down.... Mental toughness is about shutting out all the noise... having the ability to control shutting the shutters... because you let it in when you want it in (Participant 1 agreeing throughout)

Participant 1: Well its almost like you couldn't control it.... It just happened... its not something you consciously did...

Participant 2: No, I don't think I consciously did it

Participant 1: I didn't like it, I didn't like that time... I was shit scared during that time (Participant 2 agrees)...

Participant 2: so its just an ability... you just have it... innate...you can't say ....I suppose you close out distractions when you need to...
Interviewer interrupts to try to move participants up a level

Interviewer: A lot of people can do that, who are club performers or whatever... you did... were able to do it but in a different way... so in the same way you're saying thriving and loving...they are the important words in there... you probably need something to take that attribute up a level... so yea hang on best in the world....

Participant 1: I think we automatically do it (i.e., pulling the shutters down)... I think other people might deliberately say it

Participant 3: But they have to be told to do it...
Participant 1: And he (Participant 2) said the word innate... we naturally shut out distractions...
Participant 1: Interviewer is right... when I think blokes at school they did all those things as well...
Participant 2: Maybe it's not important... that attribute..... just that I can do it at the Olympics... which is actually coping with pressure... so what you have got is... you have command of your faculties even at the highest pressure.... It means that whatever the pressure size is... you do the same sort of thing...so I would exactly the same thing at counties as I would at the Olympics... it just happens the same way...(Participant 1 agreeing throughout)...so it's the ability to do it in the big one..
Participant 3: its also like when you talk about having preparation routines and things... anybody can have a preparation routine but do you actually do it when you are supposed to do it.. when it matters most... when the pressure really comes I wonder if the not so...
Participant 2: I didn’t have a preparation routine... I did different things... I just went with the flow....because I had one before (Year) and it screwed me up...that’s one of my points I think it is the ability not to be thrown by any sort of small glitch... if you can’t put your trunks on right leg first...
Participant 3: Because I said that you had to respond effectively to change... that one thing we had to do and the reason it allowed us to do that is because we had a framework...
Participant 1: Do we want to nail that last one off about focus... so we will come back to it
Participants agree

Participant 2: (talking about respond to change) my example was Commonwealth games... this is the idea of routine.. preparation... Commonwealth games, I like to go to the centre to warm-up and have a good warm-up a bit before and there was a bus taking us from the village to the centre ... and it was late... and it didn’t arrive... and I saw the blokes I was racing against... this was before the final... racing against... pacing up and down... talking to people and looking really serious and the team managers looking stressed... and “where is this bus that is supposed to be taking us to the centre”.... And I just stood there thinking “well, when I get to the centre I’ll just get 10 mins warm-up or I’ll just stretch in the shower or something” and at the end of the day it doesn’t matter as I am still going to kick their asses... they were getting scared because the bus isn’t here... so even though I wanted to be at the centre I
Participant 3: And for me having a routine meant that I would do some stretching waiting for the bus.

Participant 2: What would you do if you couldn’t stretch before the Olympics?

Participant 3: I would just get on with it
Participant 2: Exactly. So you had a routine but it did matter if you couldn’t do it.
Participant 3: When I say routine its always flexible.. its just like a framework and I think when you’re in a team … when you are trying to coordinate 4 to 9 people…that’s when it can be useful…

Participant 2: Is it something you have learned since or did you honestly have a routine?

Participant 3: Oh yea I definitely had a routine
Participant 1: I think we are quite big on our routines because when you have 9 people to organise you have to know that you have a talk at 35 mins before the race, etc. otherwise you just lets talk about the race now

Participant 2: So if you are a single performer then you don’t have to do that.

Participant 3: But also I knew that if it was not a very nice facility and it was raining, I would just stretch at the hotel before I left and that would kinda response to the moment… and it wouldn’t throw me because I always knew especially when we got in the water… that I had more or less the same routine… you have a frame work that you are trying to work within to try and get ready to race… and that...

Participant 2: These are not different are they?
Participant 1: Some people are really organised and some people wear matching kit…and I always thought they were tossers…and we would always wear scruffy looking kit… because we were hard.

Participant 3: I’m still not convinced that the not so top people… that they get thrown easily… I think they do get thrown (Participant 2 agrees)... but what is it that keeps the best people together
Participant 2: I don’t think it is routine

Interviewer: You two are saying effectively the same thing…you are saying (Participant 3) responding effectively to change to… you are saying (Participant 2) dealing with glitches, unexpected things, okay it has happened… now can we capture that.

Participant 1: So do we want to put up ‘Flexibility to deal with changes’ then…… What about enough inner-confidence then because I think it is the effect that you have inner confidence that you know that you are going to win… as you said (Participant 3) you were going to beat the Americans whatever happened… and I will always beat certain people whatever the hell happened…that meant that whatever the hell happened I would still beat them…
Participant 3: yea, it was a massive inner ability when we lost our stroke person to put someone else in and still think that we were going to win... huge inner-belief... and then allow that to happen.... Are the other bits that I was getting in to...which is the routines and all that.... That’s what would allow that to happen but the actual. .....core of it was pretty powerful inner belief....in adverse situations kind of thing... so when a change does come it’s no...

Participant 1: So should we put up inner belief?

Participant 2: That’s a different one, isn’t it or is that a distillation of the fact that you can cope with change.... Because I’ve got confidence and arrogance

Participant 1: Should we put it up on the board.......ability to cope with change because of inner belief

All agree

Participant 2: Confidence and arrogance, is that part of that...

Interviewer reminds that participants mustn’t go away from the definition either

Participant 3: Could arrogance come into this self-focused-ness again....

Participant 1: I think that there is certainly something that made us write that statement up there (i.e., definition) because I think we all had it... was this sort of arrogance... to think that we could be better than anyone had been before....

Participant 3: And also not let ourselves get distracted from other things in life that might pull us away from this major thing that we are torn to do...

Participant 1: but the thing that made us do that was ... I still sit here now and think I am better than my results probably suggested I actually am and that everyone else would think I am... I actually think that I was... you know that (Name) was lucky and that I was better....

Participant 2: You are right... it is not easy to talk about, is it... because you are perceived as arrogant, and if you are a kind of well brought person, you kinda don’t want to say it...

Participant 1: But its something based around that and I think we probably have... where I look at other people and think that they are... not like that.... they sort of say that they were lucky to have won...I don’t know maybe they do think it.... I think they won because they were lucky, I won because I deserved to...and that is what I believe... and maybe they believe that as well, the blokes who came second didn’t believe that...I think that is quite a key attribute whatever it is... I don’t know how you sum it up in words.

Participant 2: It is positive arrogance ... it’s an inner, it’s a massive confidence isn’t it... inside... I mean for me....arrogance is an outside massive confidence... it’s a huge confidence in you own ability that spills out or you keep it in... if you are arrogant you spill it out, if not you keep it in... it’s the ultimate... you think you are the best thing since sliced bread...Did you ever think you would get in the SAS?...

Participant 1: I’m sure I could have if I wanted to...

Participant 2: Yea, me too that’s what I’m thinking... that’s what I think about a lot of things... if I hadn’t been doing that, I could have done that.... That’s why I asked you because it just entered my mind... its an arrogance... that’s the
Participant 1: I think that’s quite important...

Participant 3: I like ‘Inner arrogance’

Participant 1: Inner arrogance yea, It’s that inner arrogance, that bit of an attitude towards things that I set my mind to. It is never ever giving up and knowing that if I just persevere I know that I am going to be able to do it... I believe I will be able to do it... it makes you believe that you could achieve anything that you put your mind to... now that is within certain boundaries... that I could not... I know that I couldn’t achieve certain artistic or certain academics sorts of thinks... I know that I couldn’t do that... but there is a certain little sphere of things that I think “yea I can do that” and they are all vaguely linked... and I always think that maybe I should have hurried up and given up... so I could have gone on and played rugby... and that has been a shame... because now I am too old to do, I can’t do that anymore...

Interviewer interrupts to get final version of this attribute

Participant 1: I was going to say that within a certain sphere, I can achieve anything... I can achieve success...

Participant 2: Certain sphere... we have to define that....

Participant 1: Makes me believe that I could be the best in the world or... not necessarily the best in the world... maybe that’s a bit unrealistic but that I could have been great at something else.... I could have been a world.. top class performer at something else that I put my mind to... I could have reached the top of another career... that I put my mind to...

Participant 2: I think it has to do mental toughness though... toward the artist.. its not about being an artist that you saying we couldn’t do, because we haven’t got the talent for it but like climbing Everest or going up with the pain on Hereford Moor or whatever... is all about the ability your huge ability... that you are tough enough to do that (Participant 1 agrees)... and the rest are not about toughness... I couldn’t be an artist... there is probably some mental toughness involved but I actually don’t have the skill to paint... so I think I’m tough enough to go to Everest... and I think that is the key difference between someone climbing Everest and somebody stopping at the bottom (Participant 1 agrees throughout)...does that make sense?

Both Participant 3 and Participant 1 say yes and agree with Participant 2
Participant 2: Mental toughness is actually you believe you have got it...you believe you are tough enough... you are tougher than most people... you believe that you are tougher than most people, mentally

Participant 1: Or makes me believe I’m tough enough to complete a or any physical hardship... any challenge related to physical...

Participant 2: Take talent out of it.....

Participant 3: Mmm I think I could achieve anything that I put my mind to because even if I didn’t have the skill to be an artist... I could still be mentally tough to take lessons and learn and practice... like the diligent, the diligence to practice every day... to paint better and better each day.. so it is literally, I believe ... you ask me to do anything and I will be able to do it

Interviewer: Makes me believe I can do anything that I set my mind to... these are your words (all agree with this)

Participant 1: Yea that’s right because you do think that you can achieve them.

Participant 3: What about words like perseverance... like when I think about......

Interviewer interrupts to state that with each attribute proposed, we would like an intensity to it....an adjective... I don’t know...

Participant 1: To me I don’t like the third one, I think we lashed it up because we wanted to move on (all decide to come back to it later)...

Interviewer: You were talking about massive... something massive earlier.

Participant 2: Oh massive confidence, internal confidence it was to do with arrogance... yea but arrogance is massive self-belief....

Interviewer: What about the inner belief?? (i.e., Able to cope with change because of inner belief)...

Participant 1: I fundamentally don’t believe that it is something that is required... to be a top performer, I don’t think..... that coping with a bit of bad weather is something that makes you better than everyone else....

Participant 1 and Participant 2 opt to cross it out and not to talk about it anymore (Participant 3 agrees)

Participant 3 still feels that it is important; she talks about the substitution of one of her team members just days before the Olympic final.

Participant 3: It was a massive inner self-belief and a massive inner team belief that we can keep going regardless of change.....

Participants move on

Participant 1: Up until (Year) I could say I never took a backward step... my career always got better and better, and I never had any knocks... and I probably did have some knocks and I probably did lose a few things... but they never really
affected me... I would say every year id better and better all the way up to (Year) ... then once (Year) came along I actually lost a race that I wanted to win... that I thought mattered and from then on, I have never been as good again... which possibly some mental weakness... I don’t know ... in my ability to bounce back... and to go for a win.

Participant 2: yea, surviving a disaster... a mental disaster... I think is quite important...because you wear down another piece of body armour after you have done that...

Participant 3: survive is quite good, I like that word cos that....me driving home in tears after a bad day, it is about surviving...if you don’t and I think I saw people in our group who didn’t survive some bad performances and never made it to the Olympics... but they were pretty good athletes ...but they didn’t, maybe that’s the ability to cope with change... maybe it is surviving....

Participant 2: You find someway of surviving disaster.... I will give you a good... take my (Year) thing further in that I lost in (Year) and it was a disaster and I felt like dying and all sorts of stuff... and then in (Year), so I came 4th in (Year) so I didn’t even win the race, so it is easy to rationalise that if you...you shouldn’t feel shit because you came fourth...in (Year) I won the world Championships and got disqualified... yet I feel I had mental body armour on to protect me in (Year) that came from (Year) ... (Year) should have been more traumatic... you win the World Championships and get disqualified, well its like .... It was a lot easier to cope with in (Year) than in (Year) ... (Year) protected me for the rest of my career, actually... because I survived a disaster and it was almost like well... “so you disqualified me in (Year), so what” I just got over it

Participant 1: Yea I can see that... I would have thought that coming 4th was harder to cope with than winning and being disqualified. But having said that I see the body armour thing because I would say in (Year) I had body armour as a result of (Year)...when I came 3rd in (Year) and I felt really disappointed, and I couldn’t talk in my interview after the race and that kind of thing... and then when (Year) came along I had that sort of body armour that I could cope with it and rationalise it straight away, which (Name) didn’t have cos he hadn’t been through an experience like that...but I don’t think that’s relevant now... it might be...People are going to win Olympics with backward steps and people are going to win them without them... because I hadn’t... and (Name) probably had some quite major backward steps and came on and won 4 more Olympic Gold medals as an example.... So I don’t know, I just thought it because I knew we were quite different on that.

Interviewer: Do you mind doing something with ‘surviving disasters’

Participant 3: Yea, well I didn’t have any major disasters in terms of World level, but I did during training.

Participant 2: Lets not make it ‘disaster’ then, I’m talking about... what you do when you lose, not a disaster but what happens when you lose... it is almost like... not a set back, I’ll win next time...
Participant 1: Yea, it is something about that

Participant 3: Yea, but at this level it carries so much more intensity... to not do well at one day at training at home could put some of us in tears, it is like “why on earth” you could come back the next day and do it, but it was so important and the intensity that existed within that environment was so powerful that it did that to me... and it did that to a lot of us... and it is like... operating in that kind of environment ..... and maybe what you take out of that produces this body armour and maybe that is what you take into racing... so when pressure starts to come on .. you start to “well I’ve been here”... It is like a survival...

Participant 1: Yea, its something about using failures and using disappointments as a springboard (Participant 2 agrees)...

Participant 2: You use it to turn it around...although it can take a long time to turn it around in sport...

Participant 1: When you think back on your career, what sort of things do you think about first?

Participant 2: I think of a period when I was successful... I think of the time when I was the best in the world, really... I don’t think of the end...

Participant 3: winning my first race... well first major race....high school championships...

Participant 2 to Participant 1: You are not quite finished are you?

Participant 1: I’m not necessarily finished but I am sort of finished

Participant 1 and Participant 2 discuss that after finishing your career, it takes a while to be able to reflect on you whole career and not the final failure...

Participant 1: My sort of thinking is that I don’t really think about any of the failures I’ve had really... (All agree)

Participant 2: It is interesting because linked in terms of failure... because in (Year), the Commonwealth games...I had 2 races ..On day 1, I lost the (event) which I was supposed to win against (Name) and 3 days later I won the (event) against (Name) where he was the world record holder at it. I remember going through a stack of emotions in 3 days in-between sort of “I have lost to him... he has beaten me at my best event...it is his best event next, I can’t do it” and the day after “yes , I can...I am going to beat him at his event” no I can’t and then I can do it....and I got in the race thinking that I am going to beat him at his event...it is almost like in 3 days I tried to dismiss the failure... worked hard at dismissing the failure thinking that I can still beat him even though it is his best event... and that’s about doing something with failure...because you are tough enough to get up and do it again... I used to do that with (Name) when... I was only 15... I used to think “I can’t believe the git beat me” I thought I am going to beat him next time and he would beat me again...and I would think I am going to beat him next time... because he was 26 and I was 16... but I still thought I was going to beat him... and when I lost to him I got
up and did it again....its bouncing back from failure thing... (Participant 1 agrees)...

Participant 3: I like the word surviving....

Participant 1: It sort of makes you even stronger thinking that you have to prove something to someone....

Participant 2: Failure leads to strength actually... I’m not sure how you (Participant 1) feel about that in terms of what happened after (Year)...

Participant 1: a lot of things happened that I am happy to.... To conceive that...yea, I think that there were other things wrong that failure might make me mentally tougher... like (Year) was possibly my most successful year ever actually... after (Year) that in some ways bronze in singles was a much better result than any of my others, and I did it and I took control of it and did all the sorts of things... that a real top performer should be doing... after losing... that’s my best bounce back performance... although it is a bronze medal followed by another bronze medal... and the reason I came back is that I wanted to prove something to myself and lots of other people.... And it was proving to every one else that I was as good as I think I am

Participant 2: Now that’s a very good point because like mine was all about proving to people... there is a proof thing (Participant 1 agrees)... using failure to build strength.....

Participant 1: Gaining strength from failure... its like you are on this relentless drive and failure only makes you drive more relentless...

Interviewer: Are you doing something with failure to drive... something?

Participant 2: it drives you forward to more success... because you don’t want to fail again...when I remember the 100, 200 thing in a week, I failed at that and I didn’t bloody well fail again so I was driven forward to go “well I’m not going to lose again... ’m going to win this one” I’m going to be more... redouble my efforts to make sure I bloody win...

Participant 3: using failure to be driven forward....

Participant express difficulty in finding exact words, and find it hard going. Interviewer informs them that this was expected because it has not been done before.

Using failure to .......

Participant 3: To be driven forward

Participant 2: Its not just to be driven forward...its to be driven to something.... Not lose again...

Participant 1: or is not to a higher level....... To be even better the next time

Participant 2: The problem with these things is that I don’t know what other people do....

Interviewer: So it is ‘using failure to be driven to’....?
Participant 2: to further success...
Participant 3: You are so determined to not... mess up again, I guess that kinda feeling inside... it is like no way...
Participant 2: And that’s proving to other people.... I think that proving think is really important... maybe it’s the next point.... But it is to prove to other people.....
Participant 1: I see competition as an opportunity where you prove to every one else that you are as good as you think you are....(all agree & want it written up)

Using competition as an opportunity to prove to everybody else that you are as good as you think you are.

Participant 1: Cos that’s in training almost (1st attribute)

All feel that 1st attribute should be ‘in training’ particularly in training

Participant 2: I have got one, Stubbornness.....let me give you an example.... I remember (Coach) kicking me out of a session, he used to kick you out if he didn’t like what you were doing....he said that to me “go home” and I said back “no, I’m not getting out... you will have to get me out”...Go home you can’t train anymore and I said that I’m not getting out.... I eventually got out and he was arguing with me... so I got out and came back the next day....and he sent me out again.. and I got out again and I argued with him again... and he said “right I don’t want you to come back” so I thought “fuck you then” I’m 15... the next day I came back in the morning... and well this is where I come...I’m coming so sod off...I did ten minutes warm-up and he sent me out... the next day I did the same thing.... I went back again and he said “I thought I told you not to come” and I said “this is where I come, sorry”... and he let me train....so I just kept on going despite the fact that he told me I couldn’t go and he was my coach... if you asked him about that, mental toughness and me he would quote that... I would let him stop me.... Nobody was going to stop me... and I didn’t have that at the end... I did have it through all those years... and that to me is about a bloody minded-ness and a stubbornness...it almost I’m going to keep going, even if you build a big wall, I’m going to punch a way through it...

Participant 1: Yea, and I think (Name) and I had that, which me and (Name) didn’t. (Name) and I had apart from their action, we were really adamant that it was correct... and we had each other’s support and our coach’s support, we were very much against someone or something... whether it was the people we were actually racing or whether it was (Name) or (Name) ... we were against something and we were very stubborn... what we thought the way we trained was the best way of training... the way they trained was the wrong way to train

Participant 2: yea, I changed his taped a couple of times.... Because I knew what I was doing better than he was telling me to do....

Participant 3: It was strong in our group....
Participant 2: and that’s just doing whatever it takes to get there... for me...

Participant 2: at the Olympics in (Year) we were about a mile from the Venue and we were told that we had to walk to the Venue... and I told that team manager “look I
don’t want to walk to the Venue” and he said that there was no other way of doing it... so I went down to the Olympic transport centre and said that I wanted a bus to take the British (Sport) team to the Venue....he said you need to sign this piece of paper...are you the team manager?.... and I said yes... so I signed the piece of paper as team manager.... And the team manager said “I heard that you signed a piece of paper as me” and I said “yes.. I wanted a bus.. I’m not walking”......I even one time the bus wasn’t there so I stole a bike.... Left a note saying ‘sorry I needed the bike’... and I hope you get it back....it is doing what ever it takes for me , it is a stubborness to punch through any obstacle that people put in your way (all agree).

Participant 3: Perservence
Participant 1: It’s the ability to keep grinding away

Participant 3: to keep doing it and the desire to train...to enjoy doing it...you don’t enjoy every day... but there is something passionate inside of you that keep you getting up in the morning, that keeps moving you along...

Participant 1: if I’m not going to competition to try and win every day, then I am not going to do very well... or I’m not going to do myself justice...and that’s what makes me get out of bed so I can get there....so I get on the water just ahead of someone else and stay ahead of them all session....or at least race very hard to make it difficult for them overtake me because they are in a 4 and I’m in a pair...

Participant 2: I think it is an ability to deal with monotony, you know.... The repetitive monotony...

Participant 1: My problem with that.... Is that there are those people who are good trainers who aren’t good performers... and I think there are quite a few people who are good trainers who aren’t top performers... and they were better than me at training.... But they weren’t....

Participant 3: Yea, we had people like that as well...

Participant 2: Well, mental toughness combines both, doesn’t it?......because I often thought that lots of people can train well some can race well but there is not a lot of people can do both well....that’s linked to your thing (to Participant 1) when you said competition and training things, I thought about the two things together...you say you saw people who could train, they were brilliant trainers but they couldn’t do anything when the competition came, and brilliant competitors who couldn’t put the work in... but I think you, you and me are brilliant at both...I think you can combine all facets of what it takes, because the facets are very different actually... because it’s the glory and the competitiveness of competitions and going away and doing that stuff... and then there is the......just going through the grind and just getting through it and getting through it......I think it is a different stress.

Participant 1: Taking some control and being different

Participant 2: You said that earlier and I wrote it down..... I think it is taking control of the whole thing....
Participant 1: Yea, like I really trusted my coach and I felt like he was...that we were different and we had control...he probably had control but I perceived that I had control...and I did stuff that was different to what everyone else was doing....and there were a few little elements of it that I controlled....which were the important ones.... Because Participant 3 system....it's middle ground...with you two as I believe it... because your system (Participant 3) was a real big system and everybody did the same think....and there was nothing like the element of control like you (Participant 2) you had....as I understand it...

Participant 2: I controlled everything I did.....as much as I could....

Participant 3: we were in an controlled environment but I never felt controlled if that makes sense...

Participant 1: Yea, and that's what I say about (Name)

Participant 3: You definitely had a say and things could be modified but at the end of the day (Name) would make the final decision and he had the big vision...for this group of people...he was our leader so to speak.....so he did a really good balance between making us feel responsible for ourselves and what we were doing, and yet controlling the environment

Participant 1: we probably did things different to what every one else on the team was doing.....but I did what (Name) said to the letter.....and then I did it in my own way...

Participant 2: Did you adapt stuff he said to you.....you took the framework that he was giving you and you...basically did what you thought was right...

Participant 1: I would say that I did everything that he said, but I did it with an intensity....he wrote the program and I chose the intensity, controlled the intensity with which I did it.....so that in (Coach named)'s program, I couldn't do it with the same intensity....I didn't want to do it with the same intensity....And because there was always so much of it last year....and you couldn't do it with any intensity.....whereas with (Name)....sometimes I would know it was a light session...when it was a sort of heavy session, I would do it with a real vigour and add a level, which is where I was going like no one else in the world...those 20K overloads.....and I would choose to do that... whereas (Coach named) wouldn't allow us the freedom to do that.....he would come in and say.... “hey Participant I don’t pull so hard... you got to train tomorrow”........

Participant 3: You just made me think of an example.....where we would....in the morning session would be whistle blows... off you go in all controlled and head to head, pretty intense.... And the second session and third session would be like “go off and do 16K steady state...100 or 200 bursts” and now what eventually became our 8, we would always meet up and sit side by side and do starts together and do bursts together...... but none of the other teams were there....all the others that didn’t make the team were off doing a paddle.....like we were all told to do....and we thought we would do a few starts, a few of this and a few of that.....

Participant 1: That’s because within your system that was as much control as you could take..... and that was how it was with (Name)....we took as much control as
we could...and within yours (Participant 2) you had the opportunity to have a lot more control....

Participant 2: Yea, most of the time in my adult (Sport) career, I negotiated with... the sessions the week before... to create them with him ... and then I did separate ones......

Interviewer: So can we get a set of words.... You are agreeing over something

Participant 3: Yea it is control

Participant 1: I think what we had was when we controlled it, we controlled it right.....and made it good... whereas other people might try and take control... but they would cock it up and make it too easy or too hard...

Participant 2: Isn’t that knowledge... what is that based on...

Participant 1: I would say that there are some people who do the training program too hard and they just over-train (Participant 2 agrees) and the difference I think in what we were doing and just overtraining... what we are doing is this thing about controlling it but controlling it right... but it is not controlling it right because we have lots of physiology knowledge....it is controlling it right because we have a good inner feel or what ever you call that (Participant 2: Feel; intuition)... intuition about how hard to train...

Participant 2: But I got it wrong when I was 19
Participant 1: So you developed it (Participant 2 states yes)....because I would say that I developed it at school.... When I was 16, 17.......................... In terms of mental toughness is it the desire to control the intensity of your training......

Participant 2: Other people have the desire to control their training.... You have the right? Participant 1: Yea, you have got the right to do this thing... so if someone has written it in a way ......

Participant 2: in a way that you are not sure.... That that’s not what you are supposed to be doing.... You have the right to change it....

Participant 1: You also have the right to win..... You have the right to tighten the program up or loosen the program off...

Participant 2: that comes with real confidence in your ability (Participant 1 agrees)

Participant 1: 9 times out of 10 it is to tighten it up....occasionally when I was successful it was not doing what the program said.....and the last few years it was 9 times out of 10, it was doing less than the program said....

Participant 2: I can’t find the words for this

Participant 3: Being in control but not controlled.... By the system or environment.....that’s kinda linked to distractions that we said before...

Participant 1: Believing that you have the right to be in control and not controlled

Participant 2: I have got one more..... nothing is more important in your life than this, what you’re doing(Participant 1 agrees)... I remember... We haven’t really talked about relationships....I remember a girl that I went out with for about 3
years......saying to me “well you think more about your (Sport) than you do of me” and I said “yea you’re right” that was the way it was......I don’t know how you guys were but nothing to me was more important than doing what I was doing...... nothing will come before you even people (Participant 1 agrees)..... you would always choose the (Sport) or (Sport) success more than the person or anything else.... if there were decisions to be made, I would consider what the repercussions would be on my sport before accepting or rejecting it

Interviewer writes on flip chart: Nothing is as important as your sport

Interviewer brings discussion to an end and asks participants to explain their meaning of the proposed attributes (i.e., what they believe the attributes mean one at a time).

Attributes:

Thriving on opportunity to beat other people, particularly in training.

Participant 1: It means identifying opportunities that exist and finding opportunities where you can to turn a normal training session into a competition.

Participant 2: Mine’s all about using every opportunity you can to race people, every opportunity.

Participant 3: To attempt to be better than the people around me, through those opportunities in training, lining up next to somebody.....

Loving the bits of competition and training that hurt

Participant 1: It means that the best bit of training is bit towards the end when your lungs are falling out and your legs hurt like hell and that is the bit which is the key bit, and the bit that you enjoy and the bit that you go there for, because you walk away feeling good.

Participant 2: When I was 12 the coach said to me “when it hurts when you train it doing you the most good” and I always believed that.

Participant 3: It is the part that I love about being an athlete, its ....thriving on those opportunities, just thriving on the ability to push yourself as hard as you possibly can with physical limits and challenge yourself mentally through that. To know that you’ve done as much as you can... yeah, it’s the part that I love about being an athlete, pushing yourself as hard as you possibly can and challenging yourself mentally through that. I would like the fact that it would hurt and I wouldn’t want to dream of stopping... to sort of stretch my back or something like that... for me there is something in that... that it hurts... that was a really good example of why I was better than all the rest of them.

Inner arrogance which makes me believe I can achieve anything I set my mind to.

Participant 1: This is about... just believing in yourself that if I set my mind to something, then I could do it, if it was something that I really cared about, then I could do it.

Participant 2: For me it is about.... If I haven’t achieved something, it’s because I haven’t chosen to, if I chose to achieve something then I would do it.
Participant 3: It’s that inner belief that, that bit of an attitude towards things that I set my mind to and never ever giving up and knowing that if I just persevere I know that I am going to be able to do it, I believe I will be able to do it.

Using failure to be driven to further success

Participant 1: Quite straight forward really, that having experienced a disappointment, that will cause me to raise the level of my performance next time. 
Participant 2: For me it is about...failure adding something to my mental body Armor, in that it makes me stronger and it makes me more protected from failure in the future, and so I am more successful because I am harder.
Participant 3: It is looking back on the little failures I had along the way that made me a stronger athlete, made me a stronger person but more determined to prove to myself and to prove to others that I wouldn’t let it happen again.

Using competition as an opportunity to prove to everybody else that you’re as good as you think you are.

Participant 1: It means that I walk around thinking that I have this ability... that I internally wear a badge which says ‘gold medalist’ and says ‘quality bloke’ and competition is an opportunity to prove that.
Participant 2: This is about not having anything else in life to prove it...actually for me, I never thought I was great early days in things so I found something that I had an opportunity to people that I was great at something, and so every time I had an opportunity, I wanted to do it, I wanted to make a point.
Participant 3: I think that putting all the work and effort we did in the training, competition ... I wanted to kind of... prove to people that what we have done was right and we were the best as a result of it.... Quite proud so I want to show it off a little bit.

Stubbornness to punch through any obstacle people put in your way.

Participant 1: More difficult this one..... come back to me...
Participant 2: I guess it was my words...for me it was a stubbornness, a bloody-minded-ness to do whatever it takes to just move forward... that if anybody tried to stop me doing anything then I would be really stubborn and try doubly hard to get around them, get through them...disbelieve them
Participant 3: I think for me, I just always put myself first... sometimes at the expense of things and people and no in a bad.... Negative way... but just it was me always wanting to make sure that I did the right things for me to make me better... despite the environment around me....
Participant 1: I think I had an idea of how things should be done....and lots of that was told to me by someone else but I had an idea of how they should be done, and if someone was trying to make me do something not that way then I was stubborn enough to dig my heels in and try and do it in the way that I thought it should be done.

Believing you have the right to be in control and not controlled (training specific)
Participant 3: For me I just always felt that I was in an environment that was quite structured and controlled but I never felt that I was been controlled, so I had the flexibility and the opportunity to discuss training, and programs and what we were doing, and there was a sense of openness to a point but there was enough trust and respect from our leader, coach who was making ultimate decisions that we would go with that.... but that we had an opportunity to be part of that process and do things like increase intensity of a session if it was possible... so I never felt controlled.... I always felt in control of what I was doing, basically.

Participant 2: Its about having the framework of the (Sport) sessions but believing I determined how hard I worked and what effort I did put in.... and if I disagreed then I would usually do it the way it intuitively felt right to me.

Participant 1: Yea, same as the other two, working within a framework which I believed in, I was then confident that my judgment as to the intensity which I should be doing in the session was correct... so I was confident to try and judge that intensity.

Nothing is as important as your sport.

Participant 3: I think it comes back to the stubbornness as well, just that total self-focused-ness about what I was doing and in a sense the mission I was on... and as teams we were on... the different teams that I was on over the years, nothing was going to stop us and I created an environment around me to allow me to do that.... and almost kept certain things out to make sure that first and foremost was my sport.

Participant 2: If any time I had to choose between anything and (Sport), I always put (Sport) first, including people.

Participant 1: That (Sport) was more important than other things going on in my life, so I was prepared to not get good exam results or not go out of my way too much for a relationship if it meant that I would have to jeopardize my (Sport) career, so I was prepared to forego other things which other young people might say were fun, but I was prepared to forego that.

Able to cope with change because of inner belief

Participant 3: Its just in the context of.. a team change at the last minute before the Olympics, and I believe that I coped with that effectively and that our team did because of a deep inner-belief that existed that believed we could still win regardless of this change meanwhile the rest of the world of (Sport) is looking up the (Country) team who have lost their ‘stroke c’ and “oh no what are they going to do” and all of us saying “little do you know that we have been training with this person and she is quite good” and actually believing that we could do it .... And when an adverse situation was suddenly thrown in our direction, that we hadn’t prepared for, that we actually turned it around and through inner-belief, coped quite well with it and didn’t let it become negative.....

Participant 2: Mine was about... I was close to this in that, for me it was about adapting to an inflexibility..... its linked to managing the stress of it all its that... even if you know that you are in a stressful environment, you have the ability to go
with the flow and be quite malleable but still be in control of stuff...so its coping with the changes that go on around you even though they are stressful changes, you can just flow with it even though you are dead serious about what you are doing.

Participant 1: I would be thinking about controlling the controllables really, and controlling your reaction, but my worry with it is that I think that lots of people can controlling the controllables but don’t necessarily win races.

Interviewer: Just one more thing before we wrap up.... You will have written things down on your individual lists that haven’t come up here....now is your chance to get them recorded....

Interviewer gives Participant 3’s definition as example:

“having the confident in your ability and then believing in that confidence”

Participant 3: One other thing for me would be this ideas of the perseverance, particularly during training but also during competition time... but during training the day to day monotony particularly of certain sports... what you are going through, the same thing day-in day-out and I guess the quality you get from yourself in your training to make you the best... and never ever going through the motions...you are always getting the best out of yourself regardless of the monotony, so it is that perseverance to push yourself through...

Participant 1: The only thing I have got is about support, having the key support people who I believed in and if I am thinking about (Year) then I thinking about one particular coach who set the tone of everything I did and I totally believed in him together with my colleagues with me who I totally believed in, so something around other people and support.

Participant 2: There is just one thing that is about.... Is all round organization of your life, we talked about, I don’t know what Participant 1 called it but (preoccupation) all round organization of your life to the end result.... preoccupation, that’s it...and I put down here ‘the ability to hold the big effort or the burst until it is absolutely needed because I think a lot of people shoot their bolt a bit early...... and I think it is an ability to hold this supreme effort until it is needed... sometimes that is hard to do...I think that people who have this have the ability to hold it in and contain something that is actually a massive force and then when it is completely required at that moment can get it out.

Interviewer ask whether they want to change the MT definition as a result of going into depth regarding MT. Participants state that they could not define it better.
Validation section:

How did you think the procedure went?

Participant 1: I enjoyed it... a very interesting chat...I got a lot out of it (Participant 2 and Participant 3 agree)

Did you feel that you could tell your story fully and in your own words?
All: Yes
Participant 1: Only there wasn’t enough time to tell as many stories as you wanted to

Did we lead you or influence your response in any way?
All: No

Do you think we failed to discuss any important factors?
All: No I don’t think so.....
Participant 1: There might be things if I really dug around, there might be some other things there.... Because I do feel like we were vaguely restricted by each other and by time... but I don’t know how you get over that

Interviewer: We will, we will tell you about that in a minute.

Do you think that there are any other qualities or characteristics of the “Ideal Mentally Tough Performer” that you could not describe? So in other words, you know that there is something there that we are not hitting on, but “I can’t put it into words”

Participant 1: I think that quite possible that there is because ... and I would like to see some things that come from what other people have to say....because we have taken ourselves down certain avenues...and have really banged on about certain avenues, but I don’t know whether we are necessarily talking about mental toughness....or whether we are talking about something that we happen to think of

Participant 2: Yea, I agree with that (Participant 3 also agrees)....it like getting back to what other people have said, we triggered each other... it would be good to see what other people have

Participants were thanked for their help.
APPENDIX 9

COPY OF EXEMPLAR TRANSCRIPT STUDY 2

INDIVIDUAL INTERVIEW: PARTICIPANT 4
Instructions given by interviewer that the process will entail talking about mental toughness and mentally tough individuals in a general discussion:

You will be asked to define, Mental Toughness, and comment on the previous definition and the attributes, and whether you feel the are key or essential components of mental toughness. Following this we can explore any additional attributes you think are important.

**General thoughts on MT:**

Interviewer: I want you to think about and talk about your experiences as elite athletes. One time or another on paper you were the best in the world. Just remember what it is or was like to be the best in the world and what you think about mental toughness for the moment … What was it like?

Top performers gradually prepare themselves for battle. Those mentally tough individuals are able to take each phase of play as it happened as opposed to… if people make mistakes early on and just spiral downwards. And there is definitely those individuals who pre-match and during match easily talk themselves out of situations. I know that going into a game their self-talk can be quite negative, they can be quite irrational about the way they were feeling, so the ‘what ifs’ were all very negative….. so they were self-handicapping….. so that translated into the game…. If they made a mistake early on “oh, it’s going to be one of those days” and the whole thing spirals down. Modern team climate may buffet against that sort of stuff…..however, those that are mentally tough, if they made a mistake early on, something that would not go right, it would be dismissed and it simply would not feature again in their minds and they would get on with it.

The guys who are mentally tough don’t assume the limitations that other people put upon them (person named) he had the ability to just sit there and challenge…. “I don’t agree with you” and so on… and use it as a spur or it some way to prove people wrong. The bumble bee doesn’t know that he can’t fly… the bumble bee should not be able to fly, but nobody has told the bumble that so he just gets on with it and flies….sport is littered with people who have been told that they are too small or too old or too whatever…..they are not internalizing other peoples views that you are incapable of doing something……so something about limitations there, they do not limit themselves…it is something around self-limitation…..some people set horizons….you know we get caged sometimes by our limitations… by our perceptions of our ability to do things…. And I think that there are no limits (for these mentally tough people). Mentally tough people take their preparation very seriously (e.g., person named… took his preparation very seriously and he was not influenced by the crowd…. Would not be swayed from their program or routine …he would shut himself from other people would think was appropriate) they (mentally tough people ) know what they need to do to get themselves ready. The ability to say no and not stoop to peer pressure, when the peer pressure is slightly unprofessional….. And not be worried about the ridicule in the moment….it has no impact what so ever on them. Their inner-resolve or goal that they are aspiring to is so strong that it doesn’t feature.

It is about raising the game at a critical point………when the pressure comes on, people can really flourish in that environment.…when the shit hits the fan there is a real ability to thrive on that and actually love adversity…. The real “bring it on stuff” and seeing it as the environment in which to test ones skills…the environment in which the big boys come out to
play.......in (Sport named) sometimes some people go AWOL, go walk-about... they disappear whereas others people (mentally tough) see it at that very moment as the opportunity to challenge them, because it excites them.......and the other thing is the ability not to get side-tracked...to shut out distractions and just get on with it.....its about winning, they want to win.

Mentally weak people externalize and don’t take accountability, so mentally tough people for me are always fully accountable for their performance.

Likes quote by Lombardy: “everybody has the will to win, but not everybody has the will to prepare to win”

**Definition of Mental Toughness:**

Interviewer: Okay, now I want you to come up with a definition:

Mental Toughness is a resilience of mind which copes with the demands of training and competitive stress..... or which enables you to cope with the demands of training

A resilience of mind... as a general thing...a resilience of mind which enables the performer to cope with the stresses, demands of training and the competitive environment....It is a resilience really, like a rubber ball which you just bounce back all the time.... It can take you from self-expectation and realization...what I have to do....it can transport you, yea... it is that insight....

Interviewer: now have a look at what the focus came up with, and talk to me about it.

**Focus Group Definition:**

**Mental Toughness is:**

Absolute belief that you have the right to be better than everybody else has been before, and will do whatever it takes to get there.

I can relate to that, I can understand what is being said there.....I don’t think that there are many competitors in the world who go into competitions absolutely believing they are better than everybody else. Absolute belief in your ability to be able to win on the day.... But I would not totally agree “to be better than everybody else”.....i think it is a belief but not absolute belief .....it implies a pre-competition state......it is the resilience when the pressure comes on, it is the resilience then to cope with it, is where the toughness really demonstrates itself, not before, during...

I’m also not happy with “the right”; the ability to be better than everyone else, more to do with potential, able to perform to your potential. Self-belief in your ability to push yourself
beyond your normal bounds. Competition gives you the mental edge to be able to do
that...overcome negative things, stay in control and rise above).

I believe that there is more mental toughness involved in doing a sport like shooting or
fencing than in overcoming pain. ‘Or maybe there are different sides to mental toughness, I
am very good at pushing myself to the limit in terms of physical stuff, I don’t find that a
difficult thing to overcome. So in that sense mental toughness is overcoming a physical thing
as in mind over body..... I think I am probably quite good at doing that....that doesn’t worry
me, I know I will go out there and run and give it everything... I have no doubts about that at
all. When it comes to being mentally tough in terms of getting on more fine muscle skills...
knowing that you are up against somebody that is a better than you but still going out there
believing that you can actually still beat that person, having the confidence to go out there
and give it everything, but it is something that you don’t necessarily have much control
over... and it is more of a mind set or mental state rather than just a blatant mind over
matter... push yourself as hard as you can... I think that maybe there are two different sides
there’.

Another of the differences between those who are mentally tough and those who are not, is
that the mentally tough people can deliver on the day it is required. They are achievement
focused and they know where their performance comes from. They have got a really good
handle on that... they can control the controllables... and they can eliminate the distractions.
There are those individuals (not mentally tough) who have the potential that don’t always get
it right, are the ones that just at the wrong moment, something gets in the way and knocks
them off their rhythm.

Participant reads a quote from ‘The power of one’:
“The power of one is above all things the power to believe in yourself; often well beyond any
latent ability you may have previously demonstrated, the mind is the athlete, the body is the
means it uses to run faster or longer, jump higher, shoot straighter, kick better, swim harder,
hit further or box better. First with the head then with the heart, there is more than simply
mixing brains with guts, it meant thinking well beyond the powers of normal concentration
and then daring your courage to follow your thoughts”

I think this quote almost sums up mental toughness.

Look confident; act confident and that will instill confidence into you...your performance on
the day and even per event is very much determined by your mental state, it is almost like
you have got your line of your performance that you are capable at, but then you can end up
having a performance well above that line or below that line according to your mental state

Mental toughness is what goes on inside ones head in the moment or in preparation for the
moment...raising the game when the pressure really comes on...shutting out distractions or
the ability not to get side tracked...loving, thriving on, and flourishing in adverse
situations...not self-handicapping.

It is about accepting responsibility, internalizing and not externalizing...always fully
accountable for their performance...putting yourself in the position to be in the position to
show those attributes.
Show list of previous attributes to participant and ask for comments.

- What does it (attribute) mean to you?
- Do you want to modify it?
- Sporting examples?

- You probably want to spend a couple of minutes working quietly or whatever you want, just jotting down comments about these attributes of Mental Toughness.
- What we would like you to do is, to think about a person, a person that actually won’t exist, because we are talking about an ideal mentally tough performer....
- Golf Example: If I was constructing a profile of the ideal golfer. I would probably think quite a lot about Tiger Woods, I’d think what is it about Tiger Woods that is important in terms of his power, his mental make-up.... I’d probably think about Faldo, performing under pressure, Greg Norman, in terms of his charisma and things like that, because he makes a lot of money... off the golf course, he probably makes more money off the golf course than on it. So I would pop all these things together in this one golfer and it would be the perfect golfer, the ideal golfer. So now I want you to think about the ideal mentally tough performer based on this definition (i.e., The definition that they just came up with)... and what this performer would have... so it’s the bits of the car we are looking for.....
- But remember it is about the very best in the world and them being the best in the world.... And what’s going to make the difference... its more than being confident, focused, etc.... we know all that....It is something else
- Can I also remind you about the earlier conversion where you came outside the performance arena and talked about thinks that you/they did or didn’t do, because you/they were elite athletes.
- Get participant to spend some time writing and thinking about the proposed attributes.
- The focus of this is: Are you talking about what you did to make yourself mentally tough or are you talking about something which was mental toughness?... because that is a important distinction... it is the second one we are after...what was the output? Its why you do it, we are more interested in.
- Taking it up a level: A lot of people can do that, who are club performers or whatever... you were able to do it but in a different way... so you probably need something to take that attribute up a level... “the best in the world”

Interviewer: Next we have the list of attributes that the focus group came up with. Again, can you have a look and let me know what you think.
## Mental Toughness Attributes

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Comments or Modifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thriving on opportunities to beat other people, particularly in training.</strong></td>
<td>Loves to compete...seek out, establish a competitive environment...yea...totally agree; Key component...Performing to your potential in training... potential even in training... Linked to fierce need to win...'I hope you do well, I just hope I do better’ attitude beat other people but with regard to the quality of their own performance.</td>
</tr>
<tr>
<td><strong>Loving the bits of competition and training that hurt.</strong></td>
<td>Important because something around mental and physical readiness...the two go together....it is about testing yourself and knowing you won’t bottle when the pain comes on....the goal is so big that they will “hold their hand under the flame the longest”. The strength that they can get from that means that they can stand on the start line... yea... I agree with that... resilience of mind which enables the performer to cope with... consistency...effort ...Putting everything in to it, knowing that you have done as much as you can... Able to do</td>
</tr>
<tr>
<td><strong>Believing that you can adapt to and cope with any change/distraction/threat under pressure.</strong></td>
<td>Completely agree...key component...able to adapt to whatever comes along...re-focusing...focus and refocus... coping with distraction... being flexible...yes, totally... this is resilience....what Mental Toughness is generally... this is the heart of mental toughness...you have to believe in yourself... absolute belief.. you are the best or have a chance to be the best..... and you can handle anything that is thrown at you...maybe you develop that belief... that you are better and therefore can cope...mentally tough competitors can cope on any pressure....they thrive on pressure.......if they are going into the ‘lions den’ in a competition where the crowd are against you then the mentally tough people don’t let that effect them... they enjoy it more than other people</td>
</tr>
<tr>
<td></td>
<td>Yes, belief not arrogance – but realism needs to be</td>
</tr>
<tr>
<td>Having an inner arrogance which makes you believe that you can achieve anything you set your mind to.</td>
<td>Having the inner arrogance which makes you believe that you can achieve anything you set your mind to. Having the inner arrogance to take on and best the best in the world on the day...... but realistic... Yes, ‘set your mind to’ is very important ...some performers have a immortality complex....they know that if they mobilize their inner resources, then they can do it.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Using failure to drive you to further success.</td>
<td>Yes, hate losing... will prove it was a mistake...failure as a stimulus to drive you to success...yea totally agree... wouldn’t reword...learning from mistakes / performances... draw out the positives, learn from the negatives...success also drives me to further success...yes, you don’t go from nothing to Olympic gold, there are many steps in-between, everybody has to deal with failure and how you deal with that is very important. You can realize from your failure where to go to next and do something about it. So there is an element of mental toughness with dealing with that (i.e., failure)... Important...most Olympic champions fail on first Olympics, so this drives them on.</td>
</tr>
<tr>
<td>Using competition as an opportunity to prove to everybody else that you’re as good as you think you are.</td>
<td>Yes, this is where your identity is...you do have that potential to do it... you will do it ... sport is your arena and it is what you are all about... I think it is in there because there is no where to hide....it sorts out the men from the boys</td>
</tr>
<tr>
<td>Having the stubbornness to punch through any obstacle people put in your way.</td>
<td>Yes, being able to say no...having the strength of mind to pursue your course regardless of others trying to stop you or block you in some way... able to persevere... vital component, it is part of mental toughness, ability to put things out that aren’t important...happy with the wording here...yes essential, applies to injury, personal problems, not letting them distract you from what you want to achieve.</td>
</tr>
<tr>
<td>Believing you have the right to be in control and not controlled (training specific).</td>
<td>Yes, independent...strong...its up to me...not relying on your coach, you take those last few steps alone, it is yours...win or lose... therefore it is your responsibility and you should be in control... it goes back to the internally bit, the accountability, taking responsibility bit. Those who aren’t mentally tough are quite dependent....I think it links into self-awareness, mentally tough people are very self-aware and that clearly links into control.</td>
</tr>
<tr>
<td>Ensuring that nothing is as important as your sport</td>
<td>Yes, Total Commitment; Obsession; Fanatical Prioritizing your life but with perspective...Balance is necessary... being a balanced individual is also important...so, yes, living the life of a professional and world championship behaviors... but balance is important.... don’t let perfectionism get in the way of performance excellence.</td>
</tr>
<tr>
<td>Extra Attributes</td>
<td>Comments or Modifications</td>
</tr>
<tr>
<td>Having a Killer Instinct in competition to capitalize on the moment when you know you can win.</td>
<td>You go straight for it, not hold back when you know you can win... the opportunity appears to you and you know how to take... and when... in the Olympic final I saw that the others (individuals named) had performed poorly... I knew that was my moment... I only had to beat their score... it wasn’t their best and I had done that (score identified) before...it was now or never... and I grasped it... I knew it was mine</td>
</tr>
</tbody>
</table>

At end of interview we come back to the definition. Participant stated that he would like to absorb the two definitions into one.  
"Absolute belief in your own ability to compete with the best in the world and have the resilience of mind to do whatever it takes to get there ...within the rules."  

The people that I regard as mentally tough are the ones that never give up.....always give 100%.....they are totally focused and dedicated to what they are doing. They are strong minded and will push themselves to the limit....to achieve what they want to do. They are the ones that you know will always put in the performances and won’t have any excuses....they will do their best to win or achieve what they are out to achieve. Those that are not mentally tough you will find have bags of talent ...but have lapses of concentration or give up on
matches and don’t put in the work...I think a characteristic of mental toughness is: Do I want it enough, do I wake up in the morning wanting it enough, yearning for it enough...I think mentally people in sport are actually...very borderline unhealthy...around some sort of narcissistic behavior or some sort of obsessive-compulsive stuff...I’m sure that there is something in there that is borderline unhealthy. Its do I want it enough?... Because I know how deep I have to go...and am I prepared to make that commitment?...so in the language that is written, yea I think that they do have that belief....and I think that’s why people give up (their sport) because that belief has now dwindled.

**Conclusion:**

That just about raps up the interview /profile. However, before we finish, let me ask you some final questions.

- How did you think the procedure went?
  - Yea, good I enjoyed it

- Did you feel that you could tell your story fully and in your own words?
  - Yea, I think so... in as much as I could

- Did I lead you or influence your response in any way?
  - No

- Do you think we failed to discuss any important factors?
  - I think we covered everything

- Do you think that there are any other qualities or characteristics of the “Ideal Mentally Tough Performer” that you could not describe?
  - Yea, possibly... it is a difficult subject to pin down... the list of attributes really helped

- Have you any comments or suggestions about the session today?
  - No

**Once again thank you for helping out with this interview**
APPENDIX 10

MENTAL TOUGHNESS DEFINITION RATING AND ATTRIBUTE RANKING EXAMPLE STUDY 2

PARTICIPANT 11
Mental toughness definition rating and attribute ranking example

Mental Toughness Definition:

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.

Please rate to what extent you would agree with this definition of Mental Toughness on a scale of 1 to 10 (1 being ‘Not at all’ & 10 being ‘Totally Agree’):

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Totally Agree</td>
</tr>
</tbody>
</table>

Your rating: 10

If you do not rate this at 10, what minor changes, if any, would you make to this definition?

Comments: I think it sums up what it is

This is the final list of proposed mental toughness attributes that are arranged into different time frames. Can you please rank the attributes in each time frame in order of importance? Please feel free to add any comments you may have to any of the attributes.
Mental Toughness Framework:

ATTITUDE/MINDSET
The first dimension is a general attitude/mindset of mental toughness which emerged from the interviews. This attitude/mindset contains 7 attributes. Please rank the attributes 1 to 7, (with 1 being the most important attribute and 7 being the least important attribute):

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Ranking</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having an inner arrogance which makes you believe that you can achieve anything you set your mind to.</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Believing that your desire or hunger will ultimately result in you fulfilling your potential.</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Having an unshakable self-belief as a result of total awareness of how you got to where you are now.</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Having the belief that you can punch through any obstacle people put in your way.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Ensuring that achievement of your sport’s goal is the number one priority in your life.</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Refusing to be swayed by short-term gains (financial, performance) that will jeopardize the achievement of long-term goals (e.g., being willing to lose).</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Recognizing the importance of knowing when to switch on &amp; off from your sport.</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>
TRAINING

6 attributes demonstrating mental toughness characteristics in a training dimension emerged from the interviews. Can you please rank the attributes 1 to 6, (with 1 being the most important attribute and 6 being the least important attribute).

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Ranking</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having the patience, discipline, &amp; self-control with the required training for each specific developmental stage to allow you to reach your full potential.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>When training gets tough (physically &amp; mentally) because things are not going your way, keeping yourself going by reminding yourself of your goals and aspirations and why you’re putting yourself through it.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Using all aspects of a very difficult training environment to your advantage.</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Remaining in control and not controlled (e.g., ultimate responsibility is with the performer).</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Loving the bits of training that hurt.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Thriving on opportunities to beat other people in training</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
13 attributes demonstrating mental toughness characteristics in a competition dimension emerged from the interviews. Please rank the attributes 1 to 13, with 1 being the most important attribute and 13 being the least important attribute).

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Ranking</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total commitment to your performance goal until every possible opportunity of success has passed.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Not being fazed by making mistakes and then coming back from them.</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>In certain performances, remaining focused on processes when appropriate and not solely outcomes.</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Totally focusing on the job in hand in the face of distraction.</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Remaining committed to a self-absorbed focus despite external distractions.</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Having a killer instinct to capitalize on the moment when you know you can win.</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Raising your performance ‘up a gear’ when it matters most.</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Making the correct decisions and choosing the right options that secure optimal performance under conditions of extreme pressure and ambiguity.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Coping with and channeling anxiety in pressure situations.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Adapting to and coping with any change / distraction / threat under pressure.</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Loving the pressure of competition.</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Being acutely aware of any inappropriate thoughts and feelings, and changing them to help perform optimally.</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Using all aspects of a very difficult competition environment to your advantage.</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>
**POSTCOMPETITION**

4 attributes demonstrating mental toughness characteristics in a post-competition dimension emerged from the interviews. Please rank the attributes 1 to 4, with 1 being the most important attribute and 4 being the least important attribute).

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Ranking</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using failure to drive you to further success.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Recognizing and rationalizing failure, and picking out the learning points to take forward.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Knowing when to celebrate success and then stop and focus on the next challenge</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Knowing how to rationally handle success</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 11

TOTAL MENTAL TOUGHNESS DEFINITION RATINGS

AND ATTRIBUTE RANKINGS EXAMPLE STUDY 2
### Study 2 total mental toughness definition ratings and attribute rankings

<table>
<thead>
<tr>
<th>Participants</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Toughness Definition Rating (out of 10)</td>
<td>10</td>
<td>8</td>
<td>10</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>7</td>
<td>10</td>
<td>8</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attitude/Mindset Attribute Rank Order</th>
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<td>3) Having an unshakable self-belief as a result of total awareness of how you got to where you are now.</td>
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<td>4) Having the belief that you can punch through any obstacle people put in your way.</td>
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<td>5) Ensuring that achievement of your sport’s goal is the number one priority in your life.</td>
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</table>
6) Refusing to be swayed by short-term gains (financial, performance) that will jeopardize the achievement of long-term goals

| 4 | 4 | 7 | 4 | 6 | 4 | 2 | 5 | 7 | 6 | 3 | 5 | 3 | 6 |

7) Recognizing the importance of knowing when to switch on & off from your sport.

| 6 | 7 | 4 | 6 | 7 | 3 | 7 | 6 | 6 | 2 | 2 | 7 | 4 | 7 |

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1) Having the patience, discipline, & self-control with the required training for each specific developmental stage to allow you to reach your full potential.

| 2 | 6 | 4 | 2 | 1 | 1 | 4 | 1 | 3 | 1 | 1 | 1 | 1 | 1 |

2) When training gets tough (physically & mentally) because things are not going your way, keeping yourself going by reminding yourself of your goals and aspirations and why you’re putting yourself through it.

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<td>1) Total commitment to your performance goal until every possible opportunity of success has passed</td>
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<td>2) Not being fazed by making mistakes and then coming back from them.</td>
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<td>5) Remaining committed to a self-absorbed focus despite external distractions.</td>
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<td>7) Raising your performance 'up a gear' when it matters most.</td>
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<td>8) Making the correct decisions and choosing the right options that secure optimal performance under conditions of extreme pressure and ambiguity.</td>
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<td>9) Coping with and channeling anxiety in pressure situations.</td>
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11) Loving the pressure of competition

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12) Being acutely aware of any inappropriate thoughts and feelings, and changing them to help perform optimally.

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13) Using all aspects of a very difficult competition environment to your advantage.

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<td>1) Using failure to drive you to further success.</td>
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<td>3) Knowing when to celebrate success and then stop and focus on the next challenge.</td>
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<td>4) Knowing how to rationally handle success.</td>
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APPENDIX 12

PERFORMER INTERVIEW GUIDE FOR

STUDY 3 (PART 1)
Interview Guide for Study 3 (Performers only)

MENTAL TOUGHNESS DEVELOPMENT
AND MAINTENANCE:
PERFORMERS

Name: __________________________

Participant # : ________________________

Age: __________________________

Sport: __________________________

Contact Address or Phone Number: __________________________

Interview Date: __________________________

Start Time : ______________ Finish Time : ______________
SECTION 1: INTRODUCTION

My name is Declan Connaughton and I am a researcher within Cardiff School of Sport, University of Wales Institute, Cardiff. Thank you for continuing to participate in this research project. In this study I am talking to performers who have achieved ultimate success in their Sport, regarding how mental toughness has been developed and maintained throughout your sporting career.

The interview contains several parts that progress through your sporting career. These will begin from your early involvement in your chosen sport and progress through all the stages of your career. The results from this study will be used in PhD thesis and findings will be published in scientific journals so that the information may be of use to other performers, coaches, and sport psychologists. However, all information you provide is completely confidential and your name will not be linked to your responses. When writing up this study I may select quotes from this interview to illustrate important points but your identity will be protected. In order to ensure a complete and accurate account of your responses, a tape recorder will be used.

As a participant you have certain distinct rights:

This interview is about your experiences of mental toughness development and as such if you feel uncomfortable about answering any of the questions then you are free to decline to comment or ask for the interview to be stopped. The purpose of this interview is to learn about your experiences of developing mental toughness and as such, there are no right or wrong answers to the questions within the interview. I hope therefore, that you will respond in a clear and straightforward way. If there are any questions you do not feel comfortable answering or if something is not clear, please let me know. If you do not want to enter into discussion about a particular topic any further just say “no comment” and we can move on. If you have questions, please feel free to ask them at any point.
Important: Throughout the interview I will be asking about your previous experiences which may extend back many years. Your sporting career will be split into the 4 specific phases that questions will relate to. Please feel free to take your time when recalling any aspect of these career phases; and do not hesitate to include anything that you believe had an impact on the development of mental toughness. This may include things that have occurred outside of training and competition, such as family issues, relationships, examinations and other experiences. If you are unable to recall an event, please let me know rather than guess.

Before we progress on to the interview do you have any questions?
Thank you once again for your participation.

MENTAL TOUGHNESS

From our previous interviews we have established a definition and a framework of Mental Toughness:

Mental Toughness definition:

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
MENTAL TOUGHNESS

ATTITUDE / MINDSET

<table>
<thead>
<tr>
<th>Belief</th>
<th>Focus</th>
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<tr>
<td>Having an unshakable self-belief as a result of total awareness of how you get to where you are now.</td>
<td>Refusing to be swayed by short-term gains (financial, performance) that will jeopardize the achievement of long-term goals.</td>
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<td>Having an inner arrogance which makes you believe that you can achieve anything you set your mind to.</td>
<td>Ensuring that achievement of your sport's goal is the number one priority in your life.</td>
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<tr>
<td>Having the belief that you can punch through any obstacle people put in your way.</td>
<td>Recognizing the importance of knowing when to switch on &amp; off from your sport.</td>
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<td>Believing that your desire or hunger will ultimately result in you fulfilling your potential.</td>
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TRAINING

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<tr>
<th>Using long-term goals as the source of Motivation</th>
<th>Controlling the Environment</th>
<th>Pushing Yourself to the Limit</th>
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<tr>
<td>When training gets tough (physically &amp; mentally) because things are not going your way, keeping yourself going by reminding yourself of your goals and aspirations and why you're putting yourself through it.</td>
<td>Remaining in control and not controlled</td>
<td>Loving the bits of training that hurt.</td>
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<tr>
<td>Having the patience, discipline, &amp; self-control with the required training for each specific developmental stage to allow you to reach your full potential.</td>
<td>Using all aspects of a very difficult training environment to your advantage.</td>
<td>Thriving on opportunities to beat other people in training.</td>
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COMPETITION

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<thead>
<tr>
<th>Belief</th>
<th>Staying Focused</th>
<th>Regulating Performance</th>
<th>Handling Pressure</th>
<th>Awareness and Control of Thoughts &amp; Feelings</th>
<th>Controlling the Environment</th>
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<td>Total commitment to your performance goal until every possible opportunity of success has passed.</td>
<td>Totally focusing on the job in hand in the face of distraction.</td>
<td>Having a killer instinct to capitalize on the moment when you know you can win.</td>
<td>Loving the pressure of competition.</td>
<td>Being acutely aware of any inappropriate thoughts and feelings, and changing them to help perform optimally.</td>
<td>Using all aspects of a very difficult competition environment to your advantage.</td>
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<td>Not being fazed by making mistakes and then coming back from them.</td>
<td>Remaining committed to a self-motivated focus despite external distractions.</td>
<td>Raising your performance 'up a gear' when it matters most.</td>
<td>Adapting to and coping with any change / distraction / threat under pressure.</td>
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<td>Coping with and channeling anxiety in pressure situations.</td>
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POST COMPETITION

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<tr>
<th>Handling Failure</th>
<th>Handling Success</th>
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<td>Recognizing and rationalizing failure, and picking out the learning points to take forward.</td>
<td>Knowing when to celebrate success and then stop and focus on the next challenge.</td>
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<tr>
<td>Using failure to drive you to further success.</td>
<td>Knowing how to rationally handle success.</td>
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The purpose of this interview is to establish how you have developed mental toughness throughout your career. The interview contains 7 sections that will cover the development and maintenance of mental toughness throughout your sporting career. There are four main sections that deal with your performance career and a section on recommendations. To assist memory recall for each specific phase of your career, this guide has been sent to you in advance, so that you can make notes prior to the interview.

**The career phases are as follows:**

1. **Phase 1:** The events and circumstances surrounding your initial involvement in your sport up to the point that you reached an intermediate level (i.e., when you first got involved to an intermediate level).

2. **Phase 2:** When your commitment levels progressed from an intermediate level to when you achieved an elite standard (i.e., intermediate to elite level).

3. **Phase 3:** From achievement of an elite standard to when you became Olympic Champion/World Champion (i.e., elite level to Olympic/World Champion status).

4. **Phase 4:** How you have maintained mental toughness and possible fluctuations since becoming Olympic/World Champion.
What you need to do now:

Divide your sporting career into the four stages identified above. There may be some overlapping between certain phases; however, during the interview it would be much appreciated if you could try your best to stay within the phases.

Generally questions will be related to how you think you have developed mental toughness throughout the first three developmental stages identified above. Emphasis will be placed on the framework of mental toughness, in particular, the 4 dimensions and 13 subcomponents. You will be asked to indicate you perceived level (i.e., None at all, Low, Medium, or High) for each dimension and subcomponent for the beginning and end of each career phase. This will only be used as a general indication for discussion. For example, how did specific dimensions or subcomponents increase over that career phase? The fourth career phase will deal with how you have maintained your levels of mental toughness once you have achieved Olympic/World Champion status. If during this period fluctuations in your mental toughness have occurred, questions will be asked regarding the causes and consequences of these fluctuations. The final part of the interview deals with what you would recommend for future athletes in terms of developing mental toughness. Please try to recall anything that has either happened to you, or things you have done to change your outlook on your sport or life which you believe has helped to develop and/or maintain your levels of mental toughness.
SECTION 2: EARLY YEARS

(when you first got involved to an intermediate level).

- When you first got involved in ____________<SPORT>, do you believe that you were mentally tough?
- Over the ___ years (Age ___ to ___) as you progressed through this phase (to intermediate level), how did your levels of mental toughness develop or change & what caused this?

Please rate your levels at the beginning and end of each career phase as:
None at all; Low; Medium, or High

(1): Attitude/Mindset: ______ to ______
   (i) Belief ______ to ______
   (ii) Focus ______ to ______

(2): Training: ______ to ______
   (i) Using long-term goals as a source of motivation ______ to ______
   (ii) Controlling the environment ______ to ______
   (iii) Pushing yourself to the limit ______ to ______

(3): Competition: ______ to ______
   (i) Belief ______ to ______
   (ii) Staying Focused ______ to ______
   (iii) Regulating Performance ______ to ______
   (iv) Handling Pressure ______ to ______
   (v) Awareness and control of thoughts & feelings ______ to ______
   (vi) Controlling the environment ______ to ______

(4) Post-Competition: ______ to ______
   (i) Handling failure ______ to ______
   (ii) Handling success ______ to ______
• Can you identify any experiences (in and outside sport), that may have helped you develop or increase your levels of mental toughness?
   Probe: What characteristics did they help develop?

• Did any events occur or change in your life that may have influenced you or your mental toughness in this phase?
   Probe: What characteristics did they help develop?

• Did you do anything to change your outlook on your sport or life at this phase?
   Probe: Sport / School / Lifestyle
   Probe: What characteristics did this help develop?

• Did anyone do or say anything, or influence you in a manner that could have helped your mental toughness development at this phase?
   Probe: Family, Coaches, Friends, teachers, other athletes
   Probe: What characteristics did they help develop?

• Were there any individuals or situations that hindered or tried to hinder your mental toughness development during this time period?
   Probe: Family, Coaches, Friends, teachers, other athletes
   Probe: What did you do about it?
   Probe: What affect did this have on you?

• Did you do any specific mental skills at this stage to help with your mental toughness levels?
   Probe: Goal setting, Imagery, relaxation, anxiety control
   Probe: If yes, from whom did you learn these skills?
SECTION 3: MIDDLE YEARS
(Intermediate to elite level)

- In this stage how did physical (e.g., training) and technical aspects in your <SPORT> change from earlier years?

- Over the years (Age ___ to ___) as you progressed to elite level, how did your levels of mental toughness change & what caused these changes?

(1): Attitude/Mindset: ______ to ______
   (i) Belief ______ to ______
   (ii) Focus ______ to ______

(2): Training: ______ to ______
   (i) Using long-term goals as a source of motivation ______ to ______
   (ii) Controlling the environment ______ to ______
   (iii) Pushing yourself to the limit ______ to ______

(3): Competition: ______ to ______
   (i) Belief ______ to ______
   (ii) Staying Focused ______ to ______
   (iii) Regulating Performance ______ to ______
   (iv) Handling Pressure ______ to ______
   (v) Awareness and control of thoughts & feelings ______ to ______
   (vi) Controlling the environment ______ to ______

(4) Post-Competition: ______ to ______
   (i) Handling failure ______ to ______
   (ii) Handling success ______ to ______
• Can you identify any experiences (in and outside sport), that may have helped you develop or increase your levels of mental toughness?
  Probe: What characteristics did they help develop?

• Did any events occur or change in your life that may have influenced you or your mental toughness in this phase?
  Probe: What characteristics did they help develop?

• Did you do anything to change your outlook on your sport or life at this phase?
  Probe: Sport / School / Lifestyle
  Probe: What characteristics did this help develop?

• Did anyone do or say anything, or influence you in a manner that could have helped your mental toughness development at this phase?
  Probe: Family, Coaches, Friends, teachers, other athletes
  Probe: What characteristics did they help develop?

• Were there any individuals or situations that hindered or tried to hinder your mental toughness development during this time period?
  Probe: Family, Coaches, Friends, teachers, other athletes
  Probe: What did you do about it?
  Probe: What affect did this have on you?

• Did you do any specific mental skills at this stage to help with your mental toughness levels?
  Probe: Goal setting, Imagery, relaxation, anxiety control
  Probe: If yes, from whom did you learn these skills?
SECTION 4: LATER YEARS
(Elite level to Olympic / World Champion status)

- Did you have to make many sacrifices / choices during this phase to get to the top?
  Probe: Training, Lifestyle, Financial.
- Over the ____ years (Age ____ to ____ ) from being an elite performer to becoming Olympic / World Champion, how did your levels of mental toughness change & what caused these changes?

(1): Attitude/Mindset: _______ to _______
  (i) Belief _______ to _______
  (ii) Focus _______ to _______

(2): Training: _______ to _______
  (i) Using long-term goals as a source of motivation _______ to _______
  (ii) Controlling the environment _______ to _______
  (iii) Pushing yourself to the limit _______ to _______

(3): Competition: _______ to _______
  (i) Belief _______ to _______
  (ii) Staying Focused _______ to _______
  (iii) Regulating Performance _______ to _______
  (iv) Handling Pressure _______ to _______
  (v) Awareness and control of thoughts & feelings _______ to _______
  (vi) Controlling the environment _______ to _______

(4) Post-Competition: _______ to _______
  (i) Handling failure _______ to _______
  (ii) Handling success _______ to _______
• Can you identify any experiences (in and outside sport), that may have helped you develop or increase your levels of mental toughness?
  Probe: What characteristics did they help develop?

• Did any events occur or change in your life that may have influenced you or your mental toughness in this phase?
  Probe: What characteristics did they help develop?

• Did you do anything to change your outlook on your sport or life during this phase?
  Probe: Sport / School / Lifestyle / Work
  Probe: What characteristics did this help develop?

• Did anyone do or say anything, or influence you in a manner that could have helped your mental toughness development at this phase?
  Probe: Family, Coaches, Friends, teachers, other athletes
  Probe: What characteristics did they help develop?

• Were there any individuals or situations that hindered or tried to hinder your mental toughness development during this time period?
  Probe: Family, Coaches, Friends, teachers, other athletes
  Probe: What did you do about it?
  Probe: What affect did this have on you?

• Did you do any specific mental skills at this stage to help with your mental toughness levels?
  Probe: Goal setting, Imagery, relaxation, anxiety control
  Probe: If yes, from whom did you learn these skills?

• Was this the pinnacle of your mental toughness levels?
  Probe: If Yes / No: Explain?
SECTION 5: MAINTENANCE YEARS
(Time after achievement of Olympic / World Championship)

- **Did anything change as a result of becoming Olympic / World champion?**
  
  Probe: Can you give me an example both in and outside your sport that reflected this?
  
  Probe: What affect did this have on your mental toughness?
  
  Probe: What dimensions / attributes?

- **Did your levels of mental toughness ever fluctuate after you became Olympic / World champion?**
  
  Probe: If YES / NO: Why?
  
  Probe: What affect did this have?
  
  Probe: For instance, could you compare a very mentally tough time vs. a low mentally tough time?

(1): **Attitude/Mindset:**

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(2): **Training:**

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(3): **Competition:**

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(4) **Post-Competition:**

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• Did you actively do anything to maintain (try to maintain or develop further) your mental toughness levels?
  Probe: Were you successful? If YES/NO: Why
  Probe: What characteristics did this help maintain / develop?

• Did you do any specific mental skills at this stage to help maintain mental toughness levels or deal with fluctuations?
  Probe: Goal setting, Imagery, relaxation, anxiety control
  Probe: If yes, from whom did you learn these skills?
  Probe: Were you successful? If YES/NO: Why

• Did any other events occur or change in your life that may have influenced you or your mental toughness levels here?
  Probe: What dimensions / characteristics did they affect?

• Did you do anything to change your outlook on your sport or life during this phase?
  Probe: What affect did this have on your mental toughness?
  Probe: What affect did this have on your performance?

• Did anyone do or say anything, or influence you in a manner that could have helped maintain / develop mental toughness levels at this phase?
  Probe: Family, Coaches, Friends, teachers, other athletes
  Probe: What characteristics did they help develop?

• Were there any individuals or situations that hindered or tried to hinder your mental toughness during this time?
  Probe: Family, Coaches, Friends, teachers, other athletes
  Probe: What did you do about it?
  Probe: What affect did this have on you?
SECTION 6: RECOMMENDATIONS
(Advice for future athletes)

- From your experiences, how would you advise future athletes in developing mental toughness?
  (1): Attitude/Mindset:
  (i) Belief
  (ii) Focus

(2): Training:
  (i) Using long-term goals as a source of motivation
  (ii) Controlling the environment
  (iii) Pushing yourself to the limit

(3): Competition:
  (i) Belief
  (ii) Staying Focused
  (iii) Regulating Performance
  (iv) Handling Pressure
  (v) Awareness and control of thoughts & feelings
  (vi) Controlling the environment

(4) Post-Competition:
  (i) Handling failure
  (ii) Handling success

- Overall, was there any one thing (specific period/critical landmark) in your life that changed your levels of mental toughness more than any other?
  Probe: Increase MT, Could you elaborate?
  Probe: Decrease MT, Could you elaborate?

SECTION 7: CONCLUSION

1) How did you feel the interview went?
2) Did you feel able to tell all that you wanted to?
3) Were you unhappy with any of the questions I asked?
4) Did you think I led you or influenced your answers in any way?

Thank you for taking part in this study
APPENDIX 13

COPY OF PERFORMER EXEMPLAR TRANSCRIPT

STUDY 3 (PART 1)

PARTICIPANT 3
Study 3 (part 1) Performer Interview

SECTION 2: EARLY YEARS

(when you first got involved to an intermediate level).

- When you first got involved in <SPORT>, do you believe that you were mentally tough?
  
  At the age of 8... No

- Over the _6_ years (Age _8_ to _14_) as you progressed through this phase (to intermediate level), how did your levels of mental toughness change & what caused these changes?

  Please rate your levels at the beginning and end of each career phase as: None at all; Low; Medium, or High

This was before I joined (Place), I was in a local (Sport) club. I started off training once a week and it finished training at (Place) and then moving to (Place).

(1): Attitude/Mindset: Low to Medium

(i) Belief: Low to Medium

(ii) Focus: Low to Medium

I was in junior school and I think everybody at that age is naïve so there is no way anyone can have an unshakable belief.... There was a whole bunch of stuff that wasn’t there but there was rapid improvement physically as well as mental toughness.... I began to believe in myself in my desire to get going... in to what I was doing and could do....when I first started I think I was sporty and enjoyed being active... I liked going to the (venue) to race... the idea of learning the sport initially... do one skill and then do the next skill... I guess mastery of a skill... I liked racing against other kids... having success raised my self-esteem and I felt good about myself... so I liked beating other people... it was about achievement and being the best I could... I didn’t really see it as training... my attitude at this stage is that it was a sport participation thing but I quite liked the mastery and racing thing within that... when I understood what races were, I entered races and having success raised my self-esteem and I felt good about myself... I think I was sporty and enjoyed being active.... My focus was low really especially in the beginning.... I was bullied and isolated at school... as a result I began to become internally resourceful... I had to be resourceful to get through what was happening to me at school... here (sport named) was something that I could be good at... that drove me to focus on the things that I was good at... on trying to be the best performer I could be... my sport was an escape for me... I saw it (sport named) as my anxiety control and a form of relaxation from the bullying... I used it as my haven... to get away from those thoughts of being bullied... and I would get picked for the team whereas I wouldn’t get picked for the team at the playground during
lunch...that enhanced my focus to try to be the best in (sport named). And I was selected to train with the (Place) club from 4 schools... we all got 8 sessions (2 from each school) which enhanced my belief... I was one of the best in the area because I was selected for this team.

(2): Training: Low to Medium

(i) Using long-term goals as a source of motivation Low to Medium
(ii) Controlling the environment None at all to low
(iii) Pushing yourself to the limit Low to Medium

I started training with this club and seeing (Name) winning the Olympics helped me with setting my long-term goal... it helped me bring some focus to (Sport) rather than just win one race...I prioritized (Sport) and this helped me to push my training to the limit.... I would push myself quite hard .... A coach told me early on “the more it hurts, the better you get”.... So I thought that “I need to keep on making it hurt”.... I didn’t worry about the environment we were training in.... we moved around different pools and I got used to that and accepted that is how it was.....the training structure helped me to “get on with it” and kind of learn how to deal with situations that were not ideal all the time.

(3): Competition: None at all

(i) Belief None at all
(ii) Staying Focused None at all
(iii) Regulating Performance None at all
(iv) Handling Pressure None at all
(v) Awareness and control of thoughts & feelings None at all
(vi) Controlling the environment None at all

I enjoyed racing, even in training....i liked winning and getting a medal... but it wasn’t standing on the medal’s rostrum... it was more just beating them really......it was a way of overcoming the bullying, now I could be better than people and I wasn’t seen in such a bad light but others....when I was in races I didn’t know what I could do to begin with... I also gave it everything I had....if my (equipment) broke I would carry on .... My commitment was to winning... to push on through until you can succeed..... I always felt that I wanted to be there at competitions I felt that this is good and I wanted to be there because I wanted to win this medal....i got better at recognising the way I felt before a race...... but didn’t really have control over these thoughts and feelings.
it was rough and ready at this stage, I would think about it ...... if I didn’t win... I went “I will win it next time”...I didn’t see it as a failure... I didn’t use that word...successes made me feel more confident and stronger in myself... successes made me feel better about the next race I had to do

- **Can you identify any experiences (in and outside sport), that may have helped you develop or increase your levels of mental toughness?**

  Probe: What characteristics did they help develop?

  I had asthma as a kid and the doctor talked to me about limitations but he advised me to not allow anyone to limit me “only limit yourself”.... That had a big impact on me as he was saying to me take it as far as you can... giving me permission to take it as far as I could.

- **Did any events occur or change in your life that may have influenced you or your mental toughness in this phase?**

  Probe: What characteristics did they help develop?

  I had a friend who died of lukeminia but I viewed it as taking control of my life....i realised that this sort of think could happen and you need to take control of your own life... so you got to go for it and you never know what will happen tomorrow.....the other think was that you can not rely on other people... you need to take responsibility for your own stuff and get on

- **Did you do anything to change your outlook on your sport or life at this phase?**

  Probe: Sport / School / Lifestyle

  Probe: What characteristics did this help develop?

  I changed coaches a lot but they were all hard task-masters and I felt that I had to prove to them that I could do it....i used to think that “I am going to prove you wrong”... the rugby teacher also recognised my talent and suggested I go to (place) (a sports school) and I didn’t realise that people actually recognised my talent...that gave me a lot of belief.... A (Sport) teacher also spoke to my parents about me being talented which boosted my belief.
- Did anyone do or say anything, or influence you in a manner that could have helped your mental toughness development at this phase?
  Probe: Family, Coaches, Friends, teachers, other athletes
  Probe: What characteristics did they help develop?

- Were there any individuals or situations that hindered or tried to hinder your mental toughness development during this time period?
  Probe: Family, Coaches, Friends, teachers, other athletes
  Probe: What did you do about it?
  Probe: What affect did this have on you?

- Did you do any specific mental skills at this stage to help with your mental toughness levels?
  Probe: Goal setting, Imagery, relaxation, anxiety control
  Probe: If yes, from whom did you learn these skills?

I used some goal setting, training based really... I saw (Sport) as my anxiety control and a form of relaxation from the bullying... I used (Sport) as my haven... to get away from those thoughts of being bullied

- What affect did these changes have on you sporting performance?

SECTION 3: MIDDLE YEARS
(Intermediate to elite level)

- In this stage how did physical (e.g., training) and technical aspects in your <SPORT> change from earlier years?

- Over the ___3___ years (Age ___14___ to ___17___) as you progressed to elite level, how did your levels of mental toughness change & what caused these changes?

This is when I went to (Place) through to when I got 3rd at the Europeans... so it was quite a short period but a lot happened... and I think most of my mental toughness developed here
(1): **Attitude/Mindset:** Medium to High

(i) **Belief**

Medium to High

(ii) **Focus**

Medium to High

The biggest thing here was the move to (club named)...which had a very structured training regime and it was more serious club regarding achievement ... facilities... international coach... weight training... and we moved to 10 sessions a week. I used to spend 45 minutes in the car to training with my mum or dad....i did talk through things with my parents... I had a lot more time to rationalise things with adults... sound things off ... this phase began with trying to find out whether “I am good or not”.... This phase ends with me winning a bronze medal in the Europeans but began with getting silver in county championships... so a lot was going on... belief was not unshakable ... I was getting strong in my belief of what was possible but I needed proof....i kept on needing proof.... I won the age groups within 6 months of going to (Place), which I had never done before... I started doing things that I had never done before... incredible things.... My coach was pushing me to things that I had never done before... that I never thought were possible before... so I had success in what was considered big things.... So I thought “well, if I am achieving this big things, like winning the age groups, then crikey I must be good”... so one minute I watching (Name) win the Olympics and the next thing I’m (Sport) next to him in a race with a British tracksuit on. And all through this stage I am breaking British junior records as well... so it gets me thinking...”bloody hell I can do all this”.... And then that actually affected focus even more.... The belief increased with the successes and other peoples’ belief in me and then I wanted more of this... I focused on how to get more... be more successful and have more belief

(2): **Training:** Medium to High

(i) Using long-term goals as a source of motivation

Medium to High

(ii) Controlling the environment

Low to High

(iii) Pushing yourself to the limit

Medium to High

This increased belief and focus results in me working harder in training, and set more goals and we set about seeing how we would achieve these goals....how it all fits in and why you are here.... I related goal setting (making the English team... going on training camps for England... winning British championships) to what I did in training.... Also (coach) began to educate me about what (Sport) is about and why I was doing it and what sort of things I was doing...so this was a real golden phase.... He linked training goals with how that would help me in... I got a better understanding about who I was and what I was doing in training... I was in charge of it.. I had some arguments with (coach) about some of the sets we were doing ... I needed to know why I was doing a set and how it helped .... When I moved to (Place) there were a lot of very good performers... older than me as well and I liked to take them on... It was a competitive atmosphere and (coach) encouraged that .... (coach) also always stated that “it was up to me... you are the only one who can make this happen” he had a lot of belief in me but everything was up to me.
I had a strong belief... handling pressure was a problem... my thoughts and feelings too... I found it hard to control them... I enjoyed competing but I got nervous before... when I got to the European competitions I didn’t know anyone really so I didn’t know what to do here... I saw them stretching and I would think “have I got the right model here?”... I was naïve of what I was doing..... but I think I did learn from them... we went to Russia to train with the Russian team and they had most of the best performers. I had a strong belief that I was better than those but didn’t know how to deal with what to do with such opponents and the way they were doing stuff... but my belief was strong enough for me to have a go at him... so in order to enhance my belief on the world stage, as it was, I had to go and see how they behaved as human beings and this helped with enhancing my belief that I could beat them... so I began to see them not just as rivals but as people to learn from... I learned a lot technically from them... and that they were also human... and that I can beat them.

We (coach) and I started to review what went well and what didn’t work. We discussed it thoroughly and learned from it as it was important for the next stage in my development.

- Can you identify any experiences (in and outside sport), that may have helped you develop or increase your levels of mental toughness?

Probe: What characteristics did they help develop?

Acceptance at school improved as my (Sport) improved... that bullying stopped... I started fighting back and I was bigger... i was more confident and had more belief in
Therefore the importance of (Sport) in my life increased as it solved some life issues I had....

- Did any events occur or change in your life that may have influenced you or your mental toughness in this phase?
  Probe: What characteristics did they help develop?

- Did you do anything to change your outlook on your sport or life at this phase?
  Probe: Sport / School / Lifestyle
  Probe: What characteristics did this help develop?

- Did anyone do or say anything, or influence you in a manner that could have helped your mental toughness development at this phase?
  Probe: Family, Coaches, Friends, teachers, other athletes
  Probe: What characteristics did they help develop?

- Were there any individuals or situations that hindered or tried to hinder your mental toughness development during this time period?
  Probe: Family, Coaches, Friends, teachers, other athletes
  Probe: What did you do about it?
  Probe: What affect did this have on you?

Some team members tried to put me down a bit but I always maintained that they were wrong and I would take pleasure in proving them wrong. I had a friend who was taking me away from success in (Sport)... he was a good laugh... but ultimately he wasn’t helping my development in (Sport)... others advised me to keep away from him and that effected me a bit because he was my mate... but eventually I realised that they were right and I saw that he was taking me away from success,... I accepted I had to drop him, which taught me to prioritize my (Sport) and be more focused on what I wanted to do.
• Did you do any specific mental skills at this stage to help with your mental toughness levels?
  
  Probe: Goal setting, Imagery, relaxation, anxiety control
  
  Probe: If yes, from whom did you learn these skills?
  
A bit basic really, some goal setting with my coach and imagery, which I liked... I did not have much control but I was good at picturing scenarios.

• What affect did these changes have on you sporting performance?

SECTION 4: LATER YEARS
(Elite level to Olympic / World Champion status)

• When did you know <SPORT> was going to be such a big part of your life?

• Did you have to make many sacrifices during this phase to get to the top?
  
  Probe: Training, Lifestyle, Financial.
  
  I was always in control of my life, my choices.... And I remember during this period a girlfriend asking me to choose between her and (Sport) and there was no time lapse in telling her it was (Sport). I made the choices of moving around to different places and clubs and coaches, and this was purposeful... I wanted to have an open mind and learn from others... who had different ways of training and preparing and how that worked... I tried to experience and learn from the different methods to make sure my method was the best it could be. I felt I got bits from everywhere which helped my character, my attitude to training, competition, and life really.

• Over the _7_ years (Age _17_ to _24_) from being an elite performer to becoming Olympic / World Champion, how did your levels of mental toughness change & what caused these changes?
  
  This was a long period and my mental toughness levels actually fluctuated during this period. So in (Year) my levels were very low when I reflect back on them. This was when I really switched from a junior doing well in senior competitions to where I messed up in (Year).
(1): *Attitude/Mindset: High*

(i) Belief

(ii) Focus

It was about expectations really, at 17 I could not do anything wrong... I was winning everything and taking chunks off my times... I was growing... I was beating the older senior guys..... in the commonwealths in (year) I won and beat (Name) who had just the Worlds a few weeks earlier and I had come 4th which I was really pissed off about....interestingly in (year), I did imagery work... lying on my bed, talking to myself “when it starts to get painful, I must keep going.... when it got painful, I would step up a gear”... (Name) was only 18 up and coming (Sport) and he beat me in the worlds which made me really motivated to beat him in the commonwealths.... That was a hard moment as it made me realise that I wasn’t the only one challenging, up and coming... “shit, he was my age and I am going to have to race him for the rest of my (Sport) career... and he has just broke (Name) world record, which is what I was after”.... But what I took out of it was that he caused me to take my performance level up as I broke a British record in the (event). I think (Name) coming along and doing that made me “mentally stutter” for a week but then I realised that he wasn’t going to go away, so I had to increase my focus and my game.....if I wanted to be the best in the world I needed to step it up as gear.... That was in July and the Commonwealths were in October....I knew I had to race him again.... So I went back and trained harder ..... I used imagery to help me deal with competing against him... I would do hard kick sets and imagine he was along side me... I would practice with him ahead of me and behind me and I would catch him up of keep ahead of him.... When I won the Commonwealths it had a massive impact on me....i got 3rd in the (event) and (Name) won and my mum said to me “never mind he is good” ... however, I felt that I didn’t do good enough and that my mum was giving me an out... “that’s not enough... I got to beat him”....I won the 100m and it had a big impact on me... because I was winning the same medals that (Name) was winning... So I became not just a (Sport) but a talented athlete....winning gave me a validation of the things I was doing was correct... my belief in my training, decisions, preparation was correct, as I won the Commonwealths...I was on the right track... I had a good year in (year) but for (Year) my belief went down... I think I took at hit when I came back from the American university... I enjoyed studying and the life there ... but I felt my training had went badly...I felt I had failed in some way when I came back.. I felt low because I was back...even when I won the Europeans in (year), I felt low because I hadn’t broken the American system...so I think that hit my belief and dropped my mental toughness especially in the Attitude/mindset dimension...

In January (year identified), I had the top ranking time going into the Olympics and that put a lot of unwanted pressure on me... I wasn’t sleeping... everything was piling on top of me and I couldn’t cope with that... the expectations... I was high profile... and I was heading the world rankings... and everyone really expected me to win... I wasn’t performing well... I wasn’t sleeping... I was questioning my training...I couldn’t deal with all the expectations... (named sport) used to be a relaxation for me... I enjoyed it because I got away from things... like bullying... But now I felt enclosed... trapped... I didn’t have anything else in my life... I also tried to do it all by myself. It took me 4 or 5 months to get over the (year identified) Olympics... to work it out... it was a horrible 4 or 5 months... but after that everything else started to get easier... I decided to see if I could enjoy (named sport)... try and be the best in
Britain... train for 4 months better than I had done before... so I felt in total control of it all... training came easier because I had released myself... I took more control... there was nobody else I had to perform for... I built back my belief from feeling in control and from small successes... I had balance in my life... in my sport... I took control regarding my training and used my awareness to understand what I should be doing... to enjoy it, to love it, pressure and all. I tapered myself because I listened to my body and trusted my belief...

Taking that control over what I was doing really made the difference... I swam well at the British short-course and broke the World short course record.... That confirmed my belief in my ability again and I went to (place) to train with (Name) for a few months...I discussed my training and that gave me the feeling of control and I worked harder because I felt that it was something that had complete meaning...I won the Europeans in (year) and I started to build my faith... belief in long-term goals.... I had the long-term goal of (year) but I kept that in a corner or box that I didn’t open until (year), after the Worlds....after the Europeans in (year), I went back to (coach) in (Place) because I liked the program but I was a different person....i was more mature and had more knowledge of what I wanted and what I had to do.... My belief wasn’t unshakable as yet... however, after the world in (year) it went to unshakable....i think this was because, before this I always worked hard on the training aspect of mental toughness and did really work on the competition components... however in (year) I worked on the competition components of it and tried to understand what was required to excel here.... I found that I had to build up here just as I did in training.... I had to use each competition as a stepping stone to increase my belief, focus, awareness and control in competition....i was introduced to sport psychology in this phase and I learned how to cope and handle the pressure.... How to view the pressure, expectations, anxiety in a different way..... I remember going into the waiting room before the heats in the worlds (year) and seeing (Name) and feeling in control... knowing that I could...was going to beat him....in the final I won by over a half of a second but got disqualified but it didn’t matter.... I was angry that I was DQ-ed but it did not dent my self-belief in any way that I was the best in the world...to me what meant the most was touching the wall before everyone else.... The medal was a trinket, it did not mean anything... I had lots of success between (year) & (year) and that enhanced my mental toughness to the state that they were all as high as they could be.

(2): Training: High

(i) Using long-term goals as a source of motivation High
(ii) Controlling the environment High
(iii) Pushing yourself to the limit High
(3): Competition: Medium to High

(i) Belief Medium to High
(ii) Staying Focused Medium to High
(iii) Regulating Performance Medium to High
(iv) Handling Pressure Medium to High
(v) Awareness and control of thoughts & feelings Medium to High
(vi) Controlling the environment Medium to High

(4) Post-Competition: Low to High

(i) Handling failure Low to High
(ii) Handling success Low to High

In (year) at the Worlds, everyone on the British Team except me and (Name) was sick.... We brought our own food and were careful of what we ate...but I felt that everyone knew the food was going to be poor... so we took control of it and stayed well and competed well....

- Can you identify any experiences (in and outside sport), that may have helped you develop or increase your levels of mental toughness?

Probe: What characteristics did they help develop?

- Did any events occur or change in your life that may have influenced you or your mental toughness in this phase?

Probe: What characteristics did they help develop?

My mum got cancer before (year) but didn’t tell me before the Olympics and her recovery got me over the failure in (year).... I realised that (Sport) wasn’t everything... and that I was too intense before... and I vowed to be more relaxed.... Get a life really.....get a balance in my life so that I could get away from (Sport)....stress when I needed to....i learned how to get pleasure and meaning from outside (Sport).... I worked out how to feel good about myself outside (Sport).... I worked out how to feel good about myself outside (sport named) and be more in control in (sport named).... and I learned how to use other people to help me and not be so internal... to be a team player....
• Did you do anything to change your outlook on your sport or life during this phase?
Probe: Sport / School / Lifestyle / Work
Probe: What characteristics did this help develop?

• Did anyone do or say anything, or influence you in a manner that could have helped your mental toughness development at this phase?
Probe: Family, Coaches, Friends, teachers, other athletes
Probe: What characteristics did they help develop?

• Were there any individuals or situations that hindered or tried to hinder your mental toughness development during this time period?
Probe: Family, Coaches, Friends, teachers, other athletes
Probe: What did you do about it?
Probe: What affect did this have on you?

• Did you do any specific mental skills at this stage to help with your mental toughness levels?
Probe: Goal setting, Imagery, relaxation, anxiety control
Probe: If yes, from whom did you learn these skills?

• Was this the pinnacle of your mental toughness levels?
Probe: If NO: Why?
It never went higher than it was at that moment in the Olympics when I realised I could win. So yes, winning the Olympics enhanced my levels of mental toughness and validated everything....in fact It confirmed my belief and knowledge that I was the best.
• **During this stage did your levels of mental toughness ever fluctuate?**

  Probe: If YES / NO: Why?
  Probe: How would you recognise this? For instance, could you compare a very mentally tough time vs. a low mentally tough time?

**SECTION 5: MAINTENANCE YEARS**
(Time after achievement of Olympic / World Championship)

• **Did anything change as a result of becoming Olympic / World champion?**

  Probe: Can you give me an example both in and outside your sport that reflected this?
  Probe: What affect did this have on your mental toughness?
  Probe: What dimensions / attributes?

Over the 4 years after the Olympics the aim was to repeat the cycle of winning, I had a very strong sense of being a very successful competitive athlete.... I was able to maintain my mental toughness as I wanted to win the Europeans and Commonwealths.... And the success I had in the Olympics.... Also still loving the lifestyle enjoying the training and realising its importance and setting goals..... it was still enjoyable and challenging. My aim was to break the world record and wanting to repeat these wins kept me motivated and focused... and now I had the total belief I could do it. The goals, enjoyment, travel, rewards sustained that... I was able to maintain that lifestyle with my new career and my family life. So they complimented my mental toughness maintenance as there was no great conflict there. It gave good balance to my life...it was a good rounded approach....I was more organised and disciplined at what I was doing... sometimes it was difficult and I suppose in the latter years my motivational levels of wanting to be successful went... injuries also begin to creep in..... it also became not as important to me as it used to be. I think that is where my mental toughness went down hill

**SECTION 6: RECOMMENDATIONS**
(Advice for future athletes)

There are a series of breakthroughs... sort of insights that you gain along the journey... it is a journey... with your coach that you embark on... you go from uncertainty to not sure to slight belief to "I think I am getting better" to knowing that you can do it. You learn first of all from your coach driving you through certain challenges through trial and error, then familiarisation with fellow world class performers and situations. Then comes a verification of your beliefs and focus and then an absolute or unshakable self-belief because of these steps along the way.
- From your experiences, how would you advise future athletes in developing mental toughness?

(1): Attitude/Mindset:

(i) Belief

(ii) Focus

First thing is you need a good coach that you believe in and has the knowledge.... If a performer has the talent and ability they then need from that stage... to develop powerful goals as to why you are doing it... If the coach has the good qualities and I think (Name) had.... The coach needs to instil the belief and focus in the young athlete....I don’t think young people have that, they may have a competitive nature.. or they may have this instinctive ability to respond but they do need help...to have it structured and channelled and specialised and then time will tell.

(2): Training:

(i) Using long-term goals as a source of motivation

(ii) Controlling the environment

(iii) Pushing yourself to the limit

Here performers need to be able to prioritise aspects of their lifestyle and be very disciplined, committed, focused and dedicated to what they are doing. If you are working with right coach, in the right training environment then it should come together.

(3): Competition:

(i) Belief

(ii) Staying Focused

(iii) Regulating Performance

(iv) Handling Pressure

(v) Awareness and control of thoughts & feelings

(vi) Controlling the environment

Again this is a product of working with a good coach to influence you.. I don’t believe any young developing person has levels of belief and arrogance that allows them to enter every competition and win it.... You compete and learn from it and adapt your approach to it.
(4) Post-Competition:

(i) Handling failure

(ii) Handling success

You need to anchor your successes in belief....

SECTION 6: CONCLUSION

5) How did you feel the interview went?

Yea, good. It was difficult but preparing for it helped get across all I wanted to say.

6) Did you feel able to tell all that you wanted to?

Yea.

7) Were you unhappy with any of the questions I asked?

No, I think it all went well

8) Did you think I led you or influenced your answers in any way?

No

Thank you for taking part in this study
APPENDIX 14

COACH/SPORT PSYCHOLOGIST INTERVIEW GUIDE

FOR STUDY 3 (PART 1)
Name: ________________________________

Participant #: ________________________

Age: _________________________________

Sport: ________________________________

Contact Address or Phone Number: ______________________________

____________________________________

____________________________________

____________________________________

Interview Date: _______________________

Start Time: ___________ Finish Time: ___________
SECTION 1: INTRODUCTION

My name is Declan Connaughton and I am a researcher within the School of Sport, P.E and Recreation at the University of Wales Institute, Cardiff. Thank you for continuing to participate in this research project. In this study I am talking to coaches and sport psychologists regarding how you would or how you have developed and maintained mental toughness in performers throughout your career.

The interview contains several parts that deal with your experiences as a coach / psychologist in developing mental toughness in performers that have reached No. 1 in the world (i.e., Olympic/World Champion). The results from this study will be used in PhD thesis and findings will be published in scientific journals so that the information may be of use to other performers, coaches, and sport psychologists. However, all information you provide is completely confidential and your name will not be linked to your responses. When writing up this study I may select quotes from this interview to illustrate important points but your identity will be protected. In order to ensure a complete and accurate account of your responses, a tape recorder will be used.

As a participant you have certain distinct rights:

This interview is about your experiences of mental toughness development and as such if you feel uncomfortable about answering any of the questions then you are free to decline to comment or ask for the interview to be stopped. The purpose of this interview is to learn about your experiences of developing mental toughness and as such, there are no right or wrong answers to the questions within the interview. I hope therefore, that you will respond in a clear and straightforward way. If there are any questions you do not feel comfortable answering or if something is not clear, please let me know. If you do not want to enter into discussion about any particular topic, we can move on from that topic. Finally, if you have questions, please feel free to ask them at any point.
Important: Throughout the interview I will be asking about your knowledge and experiences with regard to developing and maintaining mental toughness in sports performers. Please feel free and take your time when recalling any aspect and do not hesitate to include anything that you believe had an impact on the development of mental toughness. This may include things that have occurred outside of training and competition, such as family issues, relationships, examinations and other experiences. If you are unable to recall an event, please let me know rather than guess.

Before we progress on to the interview do you have any questions? Thank you once again for your participation.

MENTAL TOUGHNESS

From our previous interviews we have established a definition and a framework of Mental Toughness:

Mental Toughness definition:

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
MENTAL TOUGHNESS

**ATTITUDE / MINDSET**

<table>
<thead>
<tr>
<th>Belief</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having an unshakable self-belief as a result of total awareness of how you got to where you are now.</td>
<td>Refusing to be swayed by short-term gains (financial, performance) that will jeopardize the achievement of long-term goals.</td>
</tr>
<tr>
<td>Having an inner arrogance which makes you believe that you can achieve anything you set your mind to.</td>
<td>Ensuring that achievement of your sport’s goal is the number one priority in your life.</td>
</tr>
<tr>
<td>Having the belief that you can punch through any obstacle people put in your way.</td>
<td>Recognizing the importance of knowing when to switch on &amp; off from your sport.</td>
</tr>
<tr>
<td>Believing that your desire or hunger will ultimately result in you fulfilling your potential.</td>
<td></td>
</tr>
</tbody>
</table>

**TRAINING**

- Using long-Term goals as the source of Motivation
  - When training gets tough (physically & mentally) because things are not going your way, keeping yourself going by reminding yourself of your goals and aspirations and why you're putting yourself through it.

- Controlling the Environment
  - Remaining in control and not controlled.

- Pushing Yourself to the Limit
  - Loving the bits of training that hurt.

- Having the patience, discipline & self-control with the required training for each specific developmental stage to allow you to reach your full potential.

- Using all aspects of a very difficult training environment to your advantage.

- Thriving on opportunities to beat other people in training.

**COMPETITION**

- Belief
  - Total commitment to your performance goal until every possible opportunity of success has passed.

- Staying Focused
  - Not being fazed by making mistakes and then coming back from them.

- Regulating Performance
  - Remaining committed to a self-absorbed focus despite external distractions.

- Handling Pressure
  - Raising your performance up a gear when it matters most.

- Awareness and Control of Thoughts & Feelings
  - Adapting to and coping with any change / distraction / threat under pressure.

- Controlling the Environment
  - In certain performances, remaining focused on processes and not solely outcomes.

- Making the correct decisions and choosing the right options that secure optimal performance under conditions of extreme pressure and ambiguity.

- Coping with and channeling anxiety in pressure situations.

**POST COMPETITION**

- Handling Failure
  - Recognizing and rationalizing failure, and picking out the learning points to take forward.

- Knowing when to celebrate success and then stop and focus on the next challenge

- Handling Success
  - Using failure to drive you to further success.

- Knowing how to rationally handle success.
The purpose of this interview is to establish how you have or would develop mental toughness in sport performers. The interview contains 6 sections that will cover the development and maintenance of mental toughness. To assist memory recall, this guide has been sent to you in advance, so that you can make notes prior to the interview.

**What you need to do now:**

Generally questions will be related to how you think mental toughness is developed in performers. Emphasis will be placed on the framework of mental toughness, in particular, the 4 dimensions and 13 subcomponents. You will be asked to indicate perceived level for each dimension and subcomponent when you first met a specific performer. This will only be used as a general indication for discussion. For example, how did you develop, enhance, or maintain specific dimensions/subcomponents? The final part of the interview deals with what you would recommend for future athletes in terms of developing mental toughness. Please try to recall anything that has either happened to you, or things you have done to develop and/or maintain levels of mental toughness.
SECTION 2: FIRST INVOLVEMENT WITH PERFORMER
(when you first got involved with this Performer).

- What was the athlete’s age and performance level when you first got involved with him/her (pre-elite; elite; international; Olympic / World champion)?
- When you first got involved with this performer, do you believe that s/he was mentally tough?
- What were his/her levels of mental toughness at this stage? Low; medium, or high

(1): Attitude/Mindset: _______

(i) Belief _______

(ii) Focus _______

(2): Training: _______

(i) Using long-term goals as a source of motivation _______

(ii) Controlling the environment _______

(iii) Pushing yourself to the limit _______

(3): Competition: _______

(i) Belief _______

(ii) Staying Focused _______

(iii) Regulating Performance _______

(iv) Handling Pressure _______

(v) Awareness and control of thoughts & feelings _______

(vi) Controlling the environment _______

(4) Post-Competition: _______

(i) Handling failure _______

(ii) Handling success _______
SECTION 3: WORKING WITH THIS PERFORMER

(when you first got involved with this Performer until s/he became Olympic/World Champion).

- What did you do (or would you do) to develop and/or enhance the attributes or dimensions in that athlete so that s/he became more mentally tough?

(1): Attitude/Mindset:
  (i) Belief
  (ii) Focus
  - How successful were you?
  - What changes occurred in the performer as a result?

(2): Training:
  (i) Using long-term goals as a source of motivation
  (ii) Controlling the environment
  (iii) Pushing yourself to the limit
  - How successful were you?
  - What changes occurred in the performer as a result?

(3): Competition:
  (i) Belief
  (ii) Staying Focused
  (iii) Regulating Performance
  (iv) Handling Pressure
  (v) Awareness and control of thoughts & feelings
  (vi) Controlling the environment
  - How successful were you?
  - What changes occurred in the performer as a result?

(4) Post-Competition:
  (i) Handling failure
  (ii) Handling success
  - How successful were you?
  - What changes occurred in the performer as a result?

- Can you identify any experiences (in and outside sport), that may have helped him/her develop or increase their levels of mental toughness?

  Probe: What characteristics did they help develop?
• Did any events occur or change in their life that may have a significant influence on them or their mental toughness?

Probe: What characteristics did they help develop?

Probe: Did their outlook on sport or life change (Family, Friends, teachers, other athletes)?

• Were there any individuals or situations that hindered or tried to hinder their mental toughness development during this time period?

Probe: What did you / they do about it?

Probe: What affect did this have on the performer?
SECTION 4: MAINTENANCE
(Time after Olympic/World Champion status achieved)

- What were his/her levels of mental toughness at this stage? Low, medium, or high

(1): Attitude/Mindset: 

(i) Belief 

(ii) Focus 

(2): Training: 

(i) Using long-term goals as a source of motivation 

(ii) Controlling the environment 

(iii) Pushing yourself to the limit 

(3): Competition: 

(i) Belief 

(ii) Staying Focused 

(iii) Regulating Performance 

(iv) Handling Pressure 

(v) Awareness and control of thoughts & feelings 

(vi) Controlling the environment 

(4) Post-Competition: 

(i) Handling failure 

(ii) Handling success
• Did anything change (for the performer) as a result of becoming Olympic / World champion?
  Probe: Can you give me an example?
  Probe: What affect did this have on his/her mental toughness?
  Probe: What dimensions / attributes?

• Was this the pinnacle of his/her mental toughness levels?
  Probe: If Yes/No, please explain?

• Did you actively do anything to maintain (try to maintain or develop further) their mental toughness levels?
  Probe: Were you successful? If YES/NO: Why
  Probe: What characteristics did this help maintain / develop?

• Did they do any specific mental skills at this stage to help maintain mental toughness levels or deal with fluctuations?
  Probe: Goal setting, Imagery, relaxation, anxiety control
  Probe: If yes, from whom did you learn these skills?
  Probe: Were you successful? If YES/NO: Why

• During this stage did his/her levels of mental toughness ever fluctuate?
  Probe: If YES / NO: Why?
  Probe: How would you recognise this? For instance, could you compare a very mentally tough time vs. a low mentally tough time?

• Did any other events occur or change in their life that may have influenced their mental toughness levels?
  Probe: Family, Friends, teachers, other athletes
  Probe: What dimensions / characteristics did they affect?
SECTION 5: RECOMMENDATIONS
(Advice for future athletes)

• From your experiences, how would you advise future athletes in developing mental toughness?

(1): Attitude/Mindset:

(i) Belief

(ii) Focus

(2): Training:

(i) Using long-term goals as a source of motivation

(ii) Controlling the environment

(iii) Pushing yourself to the limit

(3): Competition:

(i) Belief

(ii) Staying Focused

(iii) Regulating Performance

(iv) Handling Pressure

(v) Awareness and control of thoughts & feelings

(vi) Controlling the environment

(4) Post-Competition:

(i) Handling failure

(ii) Handling success

• Overall, was there any one thing (specific period/critical landmark) in their life that changed their levels of mental toughness more than any other?

Probe: Increase MT, Could you elaborate?

Probe: Decrease MT, Could you elaborate?
SECTION 6: CONCLUSION

9) How did you feel the interview went?

10) Did you feel able to tell all that you wanted to?

11) Were you unhappy with any of the questions I asked?

12) Did you think I led you or influenced your answers in any way?

Thank you for taking part in this study
APPENDIX 15

COPY OF COACH EXEMPLAR TRANSCRIPT

STUDY 3 (PART 1)

PARTICIPANT 6
Study 3 (part 1) Coach Interview

SECTION 2:

- **What was the athlete's age and performance level when you first got involved with him/her (pre-elite; elite; international; Olympic / World champion)?**

  There was a few so I will talk in general about those performers I coached to Olympic champions

- **When you first got involved with this performer, do you believe that s/he was mentally tough?**

  No, they would have talent and stand out from the rest of their peers but I don’t think you could say they were completely mentally tough. They usually had some belief and focus and were good listeners... they would do what you wanted in training, some were good at handling pressure in competitions, but overall they needed help to develop to the levels of mental toughness they achieved when they won gold.

- **What were his/her levels of mental toughness at this stage?**

  Again, this is in general for the ones I have coached

1: **Attitude/Mindset:** Low to Medium

   (i) Belief          Low to Medium
   (ii) Focus         Low to Medium

2: **Training:** Medium to High

   (i) Using long-term goals as a source of motivation Medium to High
   (ii) Controlling the environment Medium to High
   (iii) Pushing yourself to the limit Medium to High

3: **Competition:** Low to Medium

   (i) Belief          Low to Medium
   (ii) Staying Focused Low to Medium
   (iii) Regulating Performance Low to Medium
   (iv) Handling Pressure Low to Medium
   (v) Awareness and control of thoughts & feelings Low to Medium
   (vi) Controlling the environment Low to Medium

4: **Post-Competition:** Normally Low

   (i) Handling failure Low
   (ii) Handling success Low
How did you or how would you develop the attributes/sub-components/ dimensions of Mental Toughness in a performer?

(1): Attitude/Mindset:

Sub-component Belief

- Having an unshakable self-belief as a result of total awareness of how you got to where you are now

- Having an inner arrogance which makes you believe that you can achieve anything you set your mind to.

- Having the belief that you can punch through any obstacle people put in your way.

- Believing that your desire or hunger will ultimately result in you fulfilling your potential.

They would ideally come to me with the talent and physical attributes and some sort of belief and focus. They would have to build this (belief and focus) in training you only really get the results by training properly, they have to recognise that you can not skip things, you have to do things, If you have a session to do then you have to finish the session. This makes them face challenges...All the time, you don’t skip training....I may have to stop them from over-training..... most champions accept the fact that they have to do the work to get to where they want to be. We get the belief through the training sets, they complete the sessions, and they can see things happening, and this builds the belief within them. They get to understand how important focus is to their training and development, staying committed to the training program and seeing the results means that they see what’s happening.... This gives them a huge amount of self-belief in the program, me (the coach) and themselves. All this develops the mindset......I try to make it very clear to the athlete what he has to do, so that he understands that he must focus on everything that is required to be the champion. Communication is a big factor here, getting across what must be done in order to achieve your goals, and it registering with the athlete, so that they focus on it and then seeing the results as they happen in training develops and enhances their overall belief. Sometimes I am a bit hard on them but they have to be in control of what they are doing. Success is a major factor in belief, we try to foster that in a constructive manner.

Sub-component Focus

- Refusing to be swayed by short-term gains (financial, performance) that will jeopardize the achievement of long-term goals.

- Ensuring that achievement of your sport’s goal is the number one priority in your life.
You need to get them to realize that they have to be prepared to do whatever it takes to get them into the right physical and mental shape to win the Olympics.

- Recognizing the importance of knowing when to switch on & off from your sport.

This one is difficult, I try to make sure that they have something else in their life to focus on ..... personal development or another recreational pastime or hobby that they do and has very little to do with their main sport/focus.....again communication..... you have to be able to switch off.

(2): Training:

Sub-component Using long-term goals as a source of motivation

- When training gets tough (physically & mentally) because things are not going your way, keeping yourself going by reminding yourself of your goals and aspirations and why you’re putting yourself through it.

Every session I remind them of what we are trying to do and why...communication...I used their competitors and say ‘well, (Name) is going a bit faster than you’ ... ‘I wonder what (Name) is doing on such a set’ I get them to think ‘am I as good as I should be?’ I remind them of what is necessary to win the Olympics.... Not all the time but quite a bit to motivate them especially when they are tired.

- Having the patience, discipline, & self-control with the required training for each specific developmental stage to allow you to reach your full potential.

This depends on the performer themselves.. it is difficult... you need to help them realize what they can do..... ..... you need to set goals in order to reach where you want to go... you can’t get there without goals. We work out what to do and set about doing it, this normally happens in stages and you have to reach each stage before going on to the next stage. We try to get the performer to realize how training relates to the achievement of the goal. When we get there we sort out getting to the next step... they learn where they have to go.

Sub-component Controlling the environment

- Remaining in control and not controlled.

We try to start this at a very young age, I ask them to try to think for themselves... I ask them to write their own sessions and I look at these sessions to see if they are learning. The aim is to try to get the (Performer) to take responsibility for their own actions. This gives them more input into what they are doing.... Take charge of their sport. They have to recognize that they have an input...they bounce ideas off me and I can bounce ideas off them.... I have control of the training sessions but they are involved and feel that they have contributed to it... so they own it in some form and this helps them feel in control.
• Using all aspects of a very difficult training environment to your advantage.

I give them anecdotes... ‘look at the Americans’.... They do (certain sporting things named) and we only have such facilities.... I try to get them to see that they are not as disadvantaged as you think you are..... and try to turn it around into our advantage...I give them the story of teams and coaches that have all the facilities but no gold medal winners... so it is not the facilities that makes winners.. its what the individuals do that makes the difference.... We can win gold medals with poor facilities that means that we are better than the opponents with the facilities... we then look at out lack of facilities as something that gives us an edge over them (opponents).

Sub-component Pushing yourself to the limit

• Loving the bits of training that hurt.

They have to have that in them to a certain extent, you have to get them to accept the fact that it has to hurt... We try to develop pride in training hard... I put talented youngsters in with the older more elite and partner them together to develop this pride in training hard... they race head-to-head... push themselves harder as they are involved and committed to the team... it’s a team bonding thing... this pride develops into a feeling of achievement every session which then develops into a love for the hard bits. They imagine beating the competitors in training sets... It gets them aware of the competition and what they need to do.

• Thriving on opportunities to beat other people in training

This is a similar thing to develop... encourage head-to-head in the group or partner performers in training. Get them to be aware of the competition and always imagine beating your opponents in every aspect of the training session. Even drill sets... doing these better than your opponents would. Always challenging them... doesn’t have to be times, you can break it down to specific aspects of the race or training sets... technique, turns, anything really.

(3): Competition:

Sub-component Belief

• Total commitment to your performance goal until every possible opportunity of success has passed.

• Not being fazed by making mistakes and then coming back from them.

Belief on the competition day is about belief and staying focusing on yourself and believing what you can achieve... what you can do...what you are good at...belief in the strategy or the system on that day... the belief in your commitment to that strategy regardless of what is going on around you... others’ strategies... making mistakes... all of those things can not deter your belief in that you can do it. You develop this belief first of all through the attitude/mindset and the training dimensions and setting goals that are within the performer’s
control.. so performance goals mainly but also process goals.... You need a plan or strategy that incorporates the possibilities of all of these things... mistakes... opponents' game plans and what they are likely to do... and what you will do under these circumstances. Accepting that things happen that you may not want to happen but that you have planned for such eventualities and can switch your strategy to overcome these things... or that your strategy is so well rehearsed that it can incorporate scenarios and still result in the completion of your goal. You can alter or adapt the plan with much thought... it is something that happens almost automatically.... You just switch to accommodate the things that happen. So planning the responses in your strategy to every possible scenario gives you an automatic response in the competition and your belief stays strong no matter what happens.

**Sub-component Staying Focused**

- Totally focusing on the job in hand in the face of distraction.

We develop a routine that avoids distractions... we discuss the routine from what they will do when they wake up to when they line up. They are good at these routines, getting to the venue at a certain time... stretching at a certain time... they have a strategy in place which does not allow distractions to cause them any problems.

- Remaining committed to a self-absorbed focus despite external distractions.

We try to not make a big deal of any distractions, we try to get it to the back of the performer's mind. It is difficult but we have to remember why we worked so hard to get here and stay committed to that. We try to talk these things through in smaller competitions so if they happen at big events we know how to react to them. Communication, playing it down and trying to see the bigger picture.

- In certain performances, remaining focused on processes and not solely outcome.

You need a plan or strategy that incorporates the possibilities of all of these things... mistakes... opponents' game plans and what they are likely to do... and what you will do under these circumstances. So you need to plan for this in some competitions... to get everything right for the Olympics.

**Sub-component Regulating Performance**

- Having a killer instinct to capitalize on the moment when you know you can win.

When (Name) won the Olympics he wasn’t ahead on the first section, that was fine but we tried to get him to be in control of what he was doing in his race and then using his turn as the point that he would go ahead. We would talk tactics and highlight scenarios which could be taken advantage of. Having situations pointed out to him where he may be able to take advantage enabled him to develop an awareness for such situations and also taught him to look out for such situations.
• Raising your performance ‘up a gear’ when it matters most.

This is a difficult one as sometimes world records occur out of the blue, and some performers are taken aback by them...wow.. this is about total focus on what you have to do. Holding on to that belief and focusing on what you have to do to win.

Sub-component Handling Pressure

• Loving the pressure of competition.

You got to enjoy the competition, that is the outcome of all the work.. the years of training... you get your performer relaxed, comfortable in their surroundings and their routine.... If they know that their routine works they are more relaxed.. getting them to see it as an opportunity ... ‘a fantastic opportunity to show everybody what I worked for and can do’ it needs to be done in a relaxed sense ... they view it as an opportunity and not think about consequences (good or bad).

• Adapting to and coping with any change / distraction / threat under pressure.

This relates to the other one (Loving the pressure of competition), being relaxed and enjoying the moment.. being calm and sticking to your routine... we sit down and work out scenarios that could happen and how we would cope with that scenario and what we would do to overcome it..... we try to think of every thing that could happen and plan for it. This way they are ready for anything and nothing will distract them.

• Making the correct decisions and choosing the right options that secure optimal performance under conditions of extreme pressure and ambiguity.

Planning, discussing the options and talking about what we should do... discussing previous races and videoing them to analyze them allows the performer to develop an awareness ... we practice different options in training so that the performer can be calm in the big race and make the correct decision. Again communication and planning, performers should practice strategies so that when scenarios arise they will know what to do and how to use or create such a situation that will allow the to excel or win.

• Coping with and channeling anxiety in pressure situations.

Again, being relaxed enjoying the moment.. being calm sticking to your routine to seeing it as an opportunity ...using nervous energy to enhance your performance.... Nerves give you energy... creating these kinds of thoughts in their heads.
Sub-component Awareness and control of thoughts & feelings

- Being acutely aware of any inappropriate thoughts and feelings, and changing them to help perform optimally.

Communication... I normally get them to have a massage at competitions ... the physio tells them they are tight, they notice it.... I talk about what they are thinking and why they think that way... the first step is to introduce an awareness to them and then discuss what effect these thoughts and feelings have on their performance, how we can change these thoughts and feelings, and then we practice this in training and smaller competitions, develop routines ....just point them in the right direction really.

Sub-component Controlling the environment

- Using all aspects of a very difficult competition environment to your advantage.

Try not to make problems out of these things... stay relaxed about such things.... If you have to do it the hard way then you have to do it the hard way.... If we can take it in out stride then we have the advantage over the others who will react to it. As a coach you can help here by being relaxed and trying to sort out any issues or problems ... but not in front of the (Performer)....the athlete needs to see it as something that effects everyone and that he will cope better than anyone else with these difficult situations.... The attribute in training (Using all aspects of a very difficult training environment to your advantage) helps to develop this attribute..... if they can use poor facilities to their advantage then they have this outlook to view problems as something that they can take advantage of.

(4) Post-Competition:

Sub-component Handling failure

- Recognizing and rationalizing failure, and picking out the learning points to take forward.

I think they have to understand that it is partly their responsibility and partly the coach. Coach and performer need to sit down and talk it out, what happened and why. We sometimes use video footage to help get across to the (Performer) the reason why they didn't achieve what they could have. We go through the whole thing and see where it went wrong and then talk about how to address that. So communication and being realistic about what could have been achieved. We spot technical errors and set about correcting them. This usually motivates them to get back and set it right.
- Using failure to drive you to further success.

Very few win first time around, and it links to the previous one... failure makes them more committed to show that they are the best. Champions have the ability to channel that failure back into the training program and turn the failure into success. I as a coach can only help by explaining why they didn’t succeed and pointing out how... and where we can improve so it doesn’t happen again. They get a full knowledge of what they have to do and this motivates them because they don’t what to lose again.

**Sub-component Handling success**

- Knowing when to celebrate success and then stop and focus on the next challenge.

This is a difficult one as money and fame follow Olympic success. I as a coach have to discuss what needs to be done with the athlete and we agree on when we need to start back and what commitment that involves. Again it is about communication and being realistic about what you can achieve in a certain time limit.

- Knowing how to rationally handle success.

This is about having a bit of common sense and remembering what the focus is. Reminding the athlete what we are here to do and what distractions we need to leave behind and when we can allow some distractions in that won’t effect the program.

- **Can you identify any experiences (in and outside sport), that may have helped you develop or increase your levels of mental toughness?**

  Probe: What characteristics did they help develop?

  A lot of my (Performers) who won gold had a hard time at school, or college.... Bullying and living away from home..... life was difficult for them at these stages and I think they learned about things not going their way and they became more determined to make things better..... it did them good ... they had to cope with a completely environment.

- **Did any events occur or change in your life that may have influenced you or your mental toughness in this phase?**

  Probe: What characteristics did they help develop?

  Putting them in with other world class athletes in their event... their competitors... I try to get them to train with these people and they realise how much better they are that these competitors in training, coping with general life.... This makes them more mentally tough
and their belief increases and this has a knock on effect on their motivation, commitment... focus ....etc.

- Did anyone do or say anything, or influence you in a manner that could have helped your mental toughness development at this phase?
  Probe: Family, Coaches, Friends, teachers, other athletes
  Probe: What characteristics did they help develop?

  Other elite athletes that were close to retiring talked to (Name) about his potential. That boosted his confidence and belief as you know it meant something coming from them.

- Were there any individuals or situations that hindered or tried to hinder your mental toughness development during this time period?
  Probe: Family, Coaches, Friends, teachers, other athletes
  Probe: What did you do about it?
  Probe: What affect did this have on you?

  Yes, another coach was slagging me (coach) off at training camps to (Name), but because of (Name)'s belief in me and our program and our relationship over the years it made our bond stronger.... Which made communication easier and better.
SECTION 4: MAINTENANCE
(Time after Olympic / World Champion status achieved)

- What were his/her levels of mental toughness at this stage?

I would say High on all of them

(1): Attitude/Mindset:
   (i) Belief
   (ii) Focus

(2): Training:
   (i) Using long-term goals as a source of motivation
   (ii) Controlling the environment
   (iii) Pushing yourself to the limit

(3): Competition:
   (i) Belief
   (ii) Staying Focused
   (iii) Regulating Performance
   (iv) Handling Pressure
   (v) Awareness and control of thoughts & feelings
   (vi) Controlling the environment

(4) Post-Competition:
   (i) Handling failure
   (ii) Handling success

SECTION 5: MAINTENANCE YEARS
(Time after achievement of Olympic / World Championship)

- Did anything change as a result of them becoming Olympic / World champion?

  Probe: Can you give me an example both in and outside your sport that reflected this?
  Probe: What affect did this have on your mental toughness?
  Probe: What dimensions / attributes?

  Their belief increased..... this ultimate success gave them a huge amount of belief.... They knew how to achieve it and what to do to achieve it.

- Did levels of mental toughness ever fluctuate after they became Olympic / World champion?

  It was basically down to whether or not they wanted to keep going. If the desire wasn’t really there then their focus became sloppy which effected their training and ultimately they failed. It was all about their focus at this stage... if that went then all the rest fell apart.
• Did you actively do anything to maintain (try to maintain or develop further) your mental toughness levels?

Probe: Were you successful? If YES/NO: Why

Probe: What characteristics did this help maintain / develop?

We would discuss what we wanted to achieve and why... this helped maintain the focus and if that was there then the belief was there.

SECTION 6: RECOMMENDATIONS
(Advice for future athletes)

• From your experiences, how would you advise future athletes in developing mental toughness?

You start with the belief and focus that the (Performer) brings to the table, from that you build belief through successes in training and setting goals realistic and time framed that challenge but they can get to. Communication between athlete and coach is essential so that you know what they are going through and what makes them tick.

SECTION 6: CONCLUSION

13) How did you feel the interview went?
   Good, the framework helped talk about it

14) Did you feel able to tell all that you wanted to?
   Yes, I think so.

15) Were you unhappy with any of the questions I asked?
   No

16) Did you think I led you or influenced your answers in any way?
   No

Thank you for taking part in this study
APPENDIX 16

INTERVIEW GUIDE FOR STUDY 3 (PART 2)
Interview Guide for Study 3 (Part 2)

MENTAL TOUGHNESS DEVELOPMENT (Part 2)

Name: ________________________________

Participant # : ____________________________

Age: ________________________________

Sport: ________________________________

Contact Address or Phone Number: ________________________________

Interview Date : ________________________________

Start Time : ______________ Finish Time : ______________

This guide was constructed from the finding of Part 1 of this study. All of the participants’ views and beliefs (i.e., Performers, Coaches, and Sport Psychologists) regarding the development and maintenance of mental toughness have been combined. This has resulted in:

a) A 3 stage model of the interaction between the dimensions in the development and maintenance of mental toughness.

b) The developmental and maintenance of the 13 subcomponent of mental toughness

This interview guide contains 4 sections:

1) The interaction between dimensions in the development and maintenance of mental toughness, which involves 3 stages.

2) The developmental and maintenance of the 13 subcomponent of mental toughness

3) Framework questions related to the development of mental toughness

4) Validation section
SECTION 1
(Interaction of dimensions)

Please look at the interaction of dimensions within the 3 stages of mental development and maintenance and provide comments regarding their accuracy.

Development Stage 1.

<table>
<thead>
<tr>
<th>Attitude / Mindset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belief</td>
</tr>
<tr>
<td>Focus</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using long-Term goals as the source of Motivation</td>
</tr>
<tr>
<td>Controlling the Environment</td>
</tr>
<tr>
<td>Pushing Yourself to the Limit</td>
</tr>
</tbody>
</table>
Development Stage 2.

Attitude / Mindset

- Belief
- Focus

Training

- Using long-term goals as the source of motivation
- Controlling the Environment
- Pushing Yourself to the Limit

Competition

- Belief
- Staying Focused
- Regulating Performance
- Handling Pressure
- Awareness and Control of Thoughts & Feelings
- Controlling the Environment
Development Stage 3.

Attitude / Mindset

| Belief | Focus |

Training

- Using long-term goals as the source of motivation
- Controlling the environment
- Pushing yourself to the limit

Competition

| Belief | Staying Focused | Regulating Performance | Handling Pressure | Awareness and control of thoughts & feelings | Controlling the environment |

Post-Competition

| Handling Failure | Handling Success |
SECTION 2
(Subcomponent developmental and maintenance)

Now, please look at the proposed development and maintenance of the 13 subcomponents and provide comments regarding their accuracy.

Attitude/Mindset

<table>
<thead>
<tr>
<th>Awareness of capabilities in training and competition</th>
<th>Learning how to trigger focus on</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased belief in self and achievement of goals</td>
<td>Increased confidence of being able to switch focus on when necessary</td>
</tr>
<tr>
<td>Successes and awareness of why successes occurred in training and competition</td>
<td>Increased confidence to switch focus off when not required</td>
</tr>
<tr>
<td>Unshakable belief that potential will be reached and goal will be achieved</td>
<td>Allows regeneration and alleviates pressure of sporting life</td>
</tr>
<tr>
<td>Belief</td>
<td>Switching off allows greater intensity of focus when switched on</td>
</tr>
<tr>
<td></td>
<td>Greater focus on goal achievement (i.e., No. 1 priority)</td>
</tr>
</tbody>
</table>

Attitude/Mindset
### Training

<table>
<thead>
<tr>
<th>Design a process and performance goal setting map with realistic stages and time limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased discipline and patience in the achievement of stage goals</td>
</tr>
<tr>
<td>Increased motivation in training</td>
</tr>
<tr>
<td>Using long term goals as a source of motivation</td>
</tr>
<tr>
<td>Taking responsibility for actions and results in training</td>
</tr>
<tr>
<td>Greater perceived control of preparation and training environment</td>
</tr>
<tr>
<td>Views poor facilities / weather conditions as a means of acquiring a psychological edge over opponents</td>
</tr>
<tr>
<td>Total control of the self and environment in training</td>
</tr>
<tr>
<td>Controlling the environment</td>
</tr>
<tr>
<td>Educated on the benefits of the ‘bits that hurt in training’</td>
</tr>
<tr>
<td>Recognition of how they advance the achievement of goals (goal map)</td>
</tr>
<tr>
<td>Hard bits viewed as the most important contribution to the achievement of goals</td>
</tr>
<tr>
<td>Competitiveness and imagery in training motivates the achievement of the hard bits</td>
</tr>
<tr>
<td>Love the hard bits and beating other in training</td>
</tr>
<tr>
<td>Pushing yourself to the limit</td>
</tr>
</tbody>
</table>

#### Training
### Competition

<table>
<thead>
<tr>
<th>Increased Belief from attitude/mindset dimension and training successes enhances belief in competition</th>
<th>Focus (attitude/mindset) and belief (competition) to ensure distractions are blocked out</th>
<th>Awareness of parts in a performance that make a difference</th>
<th>Belief (attitude/mindset &amp; Competition) and acceptance of competition pressure/anxiety.</th>
<th>Education with regard to what thoughts and feelings are desired for optimal performance</th>
<th>Experience of training in less than optimal environments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased commitment to that belief to strategy/plan/goal</td>
<td>Increased focus on competition goal</td>
<td>Simulation training to enhance recognition of such parts</td>
<td>Development of pre-race routine to increase control</td>
<td>Mental skills to acquire these thoughts and feelings</td>
<td>Perceived advantage over opponents</td>
</tr>
<tr>
<td>Developed strategies to overcome any problems/mistakes to ensure total belief.</td>
<td></td>
<td>Knowledge of when to increase effort to take advantage in performances</td>
<td>Increased control over pressure/anxiety allows channeling of anxiety/pressure to enhance performance</td>
<td>Simulation training to increase control over thoughts and feelings</td>
<td>Greater control over environmental conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development of killer instinct</td>
<td>Love pressure</td>
<td>Total control over pre-race thoughts and feelings</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Controlling the environment</td>
</tr>
</tbody>
</table>

### Competition

**Belief**

**Staying Focus**

**Regulating Performance**

**Handling Pressure**

**Awareness and control of thoughts & feelings**

**Controlling the environment**
<table>
<thead>
<tr>
<th>Post-competition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rational analysis and reflective practice of performances with coach/sport psychologist</strong></td>
<td><strong>Rational analysis and reflective practice of performances with coach/sport psychologist</strong></td>
</tr>
<tr>
<td><strong>Failures/mistakes viewed as increasing knowledge of how to improve future performances</strong></td>
<td><strong>Increased knowledge of how success was achieved</strong></td>
</tr>
<tr>
<td><strong>Increased focus on goals and motivation in training.</strong></td>
<td><strong>Increased knowledge of how to repeat success, (e.g., how long it takes to prepare for next major competition)</strong></td>
</tr>
<tr>
<td><strong>Handling Failure</strong></td>
<td><strong>Handling Success</strong></td>
</tr>
</tbody>
</table>

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**Post-competition**
SECTION 3

(Framework questions related to the development of mental toughness)

- **Is there any one dimension in the mental Toughness framework that is more important that the others?**
  Probe: Attitude/mindset; Training; Competition; Post-Competition

- **Must you be mentally tough in any one of the dimension before you can be mentally tough in one or all of the others?**

  *For example must you be mentally tough:*
  - In training before you can be mentally tough in competition
  - In competition before you can be mentally tough in post-competition
  - In Attitude/mindset before you can be mentally tough in training, competition, and/or post-competition.

- **Do you feel we missed any important areas you would like to discuss or add to?**
  No, I don’t think so

SECTION 4: CONCLUSION

1) How did you feel the interview went?
2) Did you feel able to get your comments across?
3) Were you unhappy with any of the questions I asked?
4) Did you think I led you or influenced your answers in any way?

   **Once again, thank you for taking part in the study**
APPENDIX 17

COPY OF EXEMPLAR TRANSCRIPT STUDY 3 (PART 2)

PARTICIPANT 5
Study 3 (part 2) Interview

MENTAL TOUGHNESS DEVELOPMENT (Part 2)

Name: ____________________________________________

Participant # : ___________________________________

Age: _____________________________________________

Sport: ____________________________________________

Contact Address or Phone Number: ___________________

_________________________________________________

Interview Date : _________________________________

Start Time : ___________ Finish Time : _____________

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SECTION 1
(Interaction of dimensions)

Please look at the interaction of dimensions within the 3 stages of mental development and maintenance and provide comments regarding their accuracy.

Development Stage 1.

Comments

Yes, I think it begins with belief and focus... usually the performer has some levels of belief and focus. I don't really know how the get the... you know... the first or original amounts of belief or focus... I guess that may be what they are born with or how they are brought up in the first few years of their life... don't know, to be honest... but they arrive and you can see talent in them and you can see a difference in belief and focus in certain individuals... and you use that belief and focus in training to develop the training dimension. These two dimensions are very closely linked, they really need each other in this first stage... you can't have one without the other. Developing using long-term goals as the source of motivation, controlling the environment, and pushing yourself to the limit... these three training dimensions... increases your belief and focus... and having more belief and focus increases
the three components.. developing using long-term goals as the source of motivation, controlling the environment, and pushing yourself to the limit. It really is a circle that flows off each other... the arrows really display exactly how it starts and feeds back on each other...you have to start with the attitude/mindset and build it from there in training, and then you can build focus and belief more. They have a knock-on effect on each other.

Development Stage 2.
Comments

Again this makes sense, you take all the belief and focus and the training components to help you develop the competition dimension. You still have the stage one links... you know... that circle of development, but it just progresses to include competition... the athlete gets to a stage that they can use or adapt these qualities in training and their general attitude in competitions... Many of the subcomponents, I think... transfer to the competition dimension... you know... belief to belief... focus to staying focused... controlling the environment obviously transfers to controlling the competitive environment. Having the competition dimension helps rationalize the whole process. You understand what the other dimensions are for and how they build the competition dimension. As a result the attitude/mindset and training dimensions also increase with the development of the competition components. It is one big feedback loop... everything links and feeds off each other... that's why I like the stages here... you have captured the development process here... for me it captures it... it makes sense... how they behave in training affects how they behave in competitions... if they are focused in training they should be able to stayed focused in competitions... they learn how to use these qualities and adapt them in situations... like training and in competitions... different events... games... other competitors. I also think that some of the competition components help build the other ones... belief has to help with handling pressure... and regulating performance... and staying focused has to help with awareness of your thoughts. Yea... I like this... it makes sense to me.
Development Stage 3.

- **Attitude / Mindset**
  - Belief
  - Focus

- **Training**
  - Using long-term goals as the source of Motivation
  - Controlling the Environment
  - Pushing Yourself to the Limit

- **Competition**
  - Belief
  - Staying Focused
  - Regulating Performance
  - Handling Pressure
  - Awareness and Control of Thoughts & Feelings
  - Controlling the Environment

- **Post-Competition**
  - Handling Failure
  - Handling Success
Comments

Yea, the last bit is the post-competition bit... the development of this (post-competition dimension) closes the circle on the whole process... you have to have the post-competition to develop the competition and belief (pointed to attitude/mindset dimension) to the high levels... your overall mental toughness levels to their highest levels... especially in the competition dimension. You learn from your mistakes and what you do right... in training and competition...the whole thing flows right... each one impacts on the others... in a way to build the competition one... that one (competition dimension) is central to everything... that’s the most important... it all ends there... Overall, I think you have got the interaction right, that’s how it developed for me. I think you also maintain it that way... okay you don’t go through the stages again but the last stage... stage 3... is the three in one really... so maintenance just involved stage 3... the arrows flow... you know... in the same way as the 3 stages but as you already have all the mental toughness... attributes... or characteristics... you have developed these before... you just need to keep them high... or maybe build them up again... but you can do this faster... so stage 3 sums up maintenance for me... you keep focus and belief high... bring that into training and then they (all the attitude/mindset and training subcomponents)... build the competition ones (subcomponents)... handling successes and failures then feeds back to the other 3... that’s how you keep them high. Overall, yea... I think that’s a good analysis of how it developed for me... and how you would maintain it.
SECTION 2
(Subcomponent developmental and maintenance)

Now, please look at the proposed development and maintenance of the 13 subcomponents and provide comments regarding their accuracy.

**Attitude/Mindset**

<table>
<thead>
<tr>
<th>Awareness of capabilities in training and competition</th>
<th>Learning how to trigger focus on</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased belief in self and achievement of goals</td>
<td>Increased confidence of being able to switch focus on when necessary</td>
</tr>
<tr>
<td>Successes and awareness of why successes occurred in training and competition</td>
<td>Increased confidence to switch focus off when not required</td>
</tr>
<tr>
<td>Unshakable belief that potential will be reached and goal will be achieved</td>
<td>Allows regeneration and alleviates pressure of sporting life</td>
</tr>
</tbody>
</table>

**Belief**

<table>
<thead>
<tr>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switching off allows greater intensity of focus when switched on</td>
</tr>
<tr>
<td>Greater focus on goal achievement (i.e., No. 1 priority)</td>
</tr>
</tbody>
</table>

**Attitude/Mindset**
Yea, its all about education and knowing what you are doing... why you are doing certain things in training... and in games... if you know why you have succeeded or why you didn’t you can develop belief... you have belief... and you have focus... if you can control focus... what you do... what you focus on... and can switch off to let yourself... chill... get away from it all... then you can put more in when you switch on

### Training

<table>
<thead>
<tr>
<th>Design a process and performance goal setting map with realistic stages and time limits</th>
<th>Taking responsibility for actions and results in training</th>
<th>Educated on the benefits of the ‘bits that hurt in training’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased discipline and patience in the achievement of stage goals</td>
<td>Greater perceived control of preparation and training environment</td>
<td>Recognition of how they advance the achievement of goals (goal map)</td>
</tr>
<tr>
<td>Increased motivation in training</td>
<td>Views poor facilities / weather conditions as a means of acquiring a psychological edge over opponents</td>
<td>Hard bits viewed as the most important contribution to the achievement of goals</td>
</tr>
<tr>
<td>Using long term goals as a source of motivation</td>
<td>Controlling the environment</td>
<td>Competitiveness and imagery in training motivates the achievement of the hard bits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Love the hard bits and beating other in training</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pushing yourself to the limit</td>
</tr>
</tbody>
</table>

**Training**
It’s the same really… its back to education… understanding… knowledge… goals setting… being actively involved in the training process… knowing how you get from a to b and what you need to do to get there… and how you approach it all… are you positive and motivated… Do you let things get to you… like facilitates and that… or can you use these things… good and bad… to help you… motivate you… push you to work harder… do what is necessary… and can you enjoy that. Its down to you really… not anyone or anything else… so yea… these work for me.
Competition

Experience of training in less than optimal environments

Perceived advantage over opponents

Greater control over environmental conditions

Controlling the environment

Increased Belief from attitude/mindset dimension and training successes enhances belief in competition

Focus (attitude/mindset) and belief in competition to ensure distractions are blocked out

Increased focus on competition goal

Increased commitment to that belief to strategy/plan/goal

Developed strategies to overcome any problems/mistakes to ensure total belief.

Belief

Staying Focus

Awareness of parts in a performance that make a difference

Simulation training to enhance recognition of such parts

Knowledge of when to increase effort to take advantage in performances

Development of killer instinct

Regulating Performance

Belief (attitude/mindset & Competition) and acceptance of competition pressure/anxiety.

Development of pre-race routine to increase control

Increased control over pressure/anxiety allows channeling of anxiety/pressure to enhance performance

Total control over pre-race thoughts and feelings

Handling Pressure

Simulation training to increase control over thoughts and feelings

Greater control over environmental conditions

Awareness and control of thoughts & feelings

Handling Pressure

Education with regard to what thoughts and feelings are desired for optimal performance

Mental skills to acquire these thoughts and feelings

Love pressure

Increased focus on competition goal

Increased focus on competition goal

Increased focus on competition goal

Mental skills to acquire these thoughts and feelings

Belief (attitude/mindset)

Increased focus on competition goal

Increased focus on competition goal

Belief (attitude/mindset)

Belief

Increased Belief from attitude/mindset dimension and training successes enhances belief in competition

Focus (attitude/mindset) and belief in competition to ensure distractions are blocked out

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Mental skills to acquire these thoughts and feelings

Belief (attitude/mindset)

Increased focus on competition goal

Increased commitment to that belief to strategy/plan/goal

Developed strategies to overcome any problems/mistakes to ensure total belief.

Belief
Yea, this is what I meant earlier... about how belief and some of the competition components helping to build the other ones... belief lets you handling the pressure... and the transfer of components from training and attitude to game situations Yea... this makes sense to me. You use things from training... and the experience of competitions to build belief and focus and the others so you can excel in competitions... develop your killer instinct... learn to love the pressure of the big game... handle mistakes... problems... control things. So yea... these all fit nicely into it for me... that's how these components develop and how they are maintained... constant building of belief and control to enhance these components and keep them high. You can’t stop working on them, otherwise you lose it... you have to keep working on it.

<table>
<thead>
<tr>
<th>Post-competition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Handling Failure</strong></td>
</tr>
<tr>
<td>Rational analysis and reflective practice of performances with coach/sport psychologist</td>
</tr>
<tr>
<td>Failures/mistakes viewed as increasing knowledge of how to improve future performances</td>
</tr>
<tr>
<td>Increased focus on goals and motivation in training.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Handling Success</td>
</tr>
</tbody>
</table>
I think that this is how you ultimately develop these subcomponents, over the 3 stages though... understanding through experience, education and I suppose reflecting on how you do things... what works, what doesn’t... and why it doesn’t... importantly... you know... if you don’t understand the whys, then you can be consistent... you may be good one day... but you can’t guarantee to be good the next day... if you know how you got there and know why you didn’t you can ensure it... be consistent... win when it matters.....so overall... the models, the processes you have here... the interaction... it all makes sense in here. It’s a good study... I can see how to build mental toughness in performers... what they need to do and how that happens.

SECTION 3

(Framework questions related to the development of mental toughness)

- **Is there any one dimension in the mental Toughness framework that is more important that the others?**
  Probe: Attitude/mindset; Training; Competition; Post-Competition

  You have to have the attitude/mindset, then the rest then follow... so you start off with the generic dimension towards your life, training, competition then these other things follow on from this one (Attitude/mindset). So in order to develop mental toughness you have to have the attitude/mindset... so this dimension has to be the most important for development... but... the competition dimension has to be the most important because at the end of the day that’s what the test is... that is what you are aiming for... That’s what you are trying to achieve... you need a good attitude... you need to be tough in training but the real focus is ‘when it matters can you harness and bring in what is necessary to win competitions?’ You have the attitude attributes, you have demonstrated those attributes in training ... you might have the post-competition attributes, but unless you can believe, stay focused and handle the pressure, you are never going to be a champion. So the competition dimension makes the difference between champions and other competitors. The others all influence each other and ultimately the competition dimension... but the competition one is the result of it all... that is where it counts... so it has to be the most important.

- **Must you be mentally tough in any one of the dimension before you can be mentally tough in one or all of the others?**

  *For example must you be mentally tough:*
  - In training before you can be mentally tough in competition
  - In competition before you can be mentally tough in post-competition
  - In Attitude/mindset before you can be mentally tough in training, competition, and/or post-competition.
As I said before, you start with the attitude/mindset and then develop training, competition, and post-competition.

- Do you feel we missed any important areas you would like to discuss or add to?
  No, I don’t think so

SECTION 4: CONCLUSION

1) How did you feel the interview went?
   Very well
2) Did you feel able to get your comments across?
   es, it all makes sense with the stages and tables
3) Were you unhappy with any of the questions I asked?
   No
4) Did you think I led you or influenced your answers in any way?
   No, not at all

Once again, thank you for taking part in the study