

## What Is This Thing Called Mental Toughness? An Investigation of Elite Sport Performers

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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.

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, 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, 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,

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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, 1995; Luszki, 1982; Pankey, 1993; Taylor, 1989; Woods, Hocton, & Desmond, 1995); achieving consistency (Gould et al., 1987; Graham & Yocom, 1990; Loehr, 1982; Williams, 1988); desire, determination, and commitment (Bull et al., 1996; Goldberg, 1998; Hodge, 1994; Loehr, 1982; Luszki, 1982; Tunney, 1987; Williams, 1988); focus and concentration (Goldberg, 1998; Graham & Yocom, 1990; Jones, 1982; Loehr, 1982; 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; 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 in-depth understanding of the participants' personal constructs and experiences. The aim here, therefore, was to progress beyond "popular" sport psychology approaches that emphasize macro-components 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 pentathlon (see Butler, 1989, 1991; Butler & Hardy, 1992; Butler, Smith, & Irwin, 1993; Dale & Wisberg, 1996; Jones, 1993).

## 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;  $M$  age = 31.2 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 per-

former 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.

**Table 1**  
**Mental Toughness Attributes and Importance Rankings**

Attribute	Sum of Rankings	Overall Rank
1. Having an unshakable self-belief in your ability to achieve your competition goals	26	1
2. Having an unshakable self-belief that you possess unique qualities and abilities that make you better than your opponents	50	3
3. Having an insatiable desire and internalized motives to succeed	56	4=
4. Bouncing back from performance set-backs as a result of increased determination to succeed	49	2
5. Thriving on the pressure of competition	76	9=
6. Accepting that competition anxiety is inevitable and knowing that you can cope with it	73	8
7. Not being adversely affected by others' good and bad performances	76	9=
8. Remaining fully-focused in the face of personal life distractions	77	11
9. Switching a sport focus on and off as required	108	12
10. Remaining fully-focused on the task at hand in the face of competition-specific distractions	56	4=
11. Pushing back the boundaries of physical and emotional pain, while still maintaining technique and effort under distress (in training and competition)	67	7
12. Regaining psychological control following unexpected, uncontrollable events (competition-specific)	66	6

*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.

*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 your 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<sup>th</sup> and 8<sup>th</sup>, 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.

## REFERENCES

- Alderman, R. B. (1974). *Psychological behavior in sport*. Toronto: W.B. Saunders Company.
- Bannister, D., & Fransella, F. (1986). *Inquiring man—the theory of personal constructs*. London: Croom Helm.
- Bull, S. J., Albinson, J. G., & Shambrook, C. J. (1996). *The mental game plan: Getting psyched for sport*. Eastbourne, UK: Sports Dynamics.
- Butler, R. J. (1989). Psychological preparation of Olympic boxers. In J. Kremer & W. Crawford (Eds.), *The psychology of sport: Theory and practice* (pp.78–84). Leicester, UK: British Psychological Association.
- Butler, R. J. (1991). Amateur boxing and sports science II: Psychology. *Coaching Focus*, 18, 14–15.
- Butler, R. J., & Hardy, L. (1992). The performance profile: Theory and application. *The Sport Psychologist*, 6, 253–264.
- Butler, R. J., Smith, M., & Irwin, I. (1993). The performance profile in practice. *Journal of Applied Sport Psychology*, 5, 48–63.
- Cattell, R. B. (1957). *Personality and motivation structure and measurement*. New York: Harcourt, Brace, and World.
- Dale, G. A., & Wrisberg, C. A. (1996). The use of a performance profiling technique in a team setting: getting the athletes and coaches on the “same page.” *The Sport Psychologist*, 10, 261–277.
- Dennis, P. W. (1981). Mental toughness and the athlete. *Ontario Physical and Health Education Association*, 7, 37–40.
- Favret, B., & Benzel, D. (1997). *Complete guide to water skiing*. Champaign, IL: Human Kinetics.
- Gibson, A. (1998). *Mental toughness*. New York: Vantage Press.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory*. Chicago: Aldine.
- Goldberg, A. S. (1998). *Sports slump busting: 10 steps to mental toughness and peak performance*. Champaign, IL: Human Kinetics.
- Gould, D., Eklund, R. C., & Jackson, S. A. (1993). Coping strategies used by U.S. Olympic wrestlers. *Research Quarterly for Exercise and Sport*, 64, 83–93.

- Gould, D., Finch, L. M., & Jackson, S. A. (1993). Coping strategies used by national champion figure skaters. *Research Quarterly for Exercise and Sport*, *64*, 453–468.
- Gould, D., Hodge, K., Peterson, K., & Petlichkoff, L. (1987). Psychological foundations of coaching: similarities and differences among intercollegiate wrestling coaches. *The Sport Psychologist*, *1*, 293–308.
- Graham, D., & Yocom, G. (1990). *Mental toughness training for golf*. Lexington, MA: The Stephen Greene Press.
- Hanton, S., & Connaughton, D. (2002). Perceived control of anxiety symptoms and its relationship to self-confidence and performance: A qualitative inquiry. *Research Quarterly for Exercise and Sport*, *73*, 87–97.
- Hanton, S., & Jones, G. (1999). The acquisition and development of cognitive skills and strategies. I: Making the butterflies fly in formation. *The Sport Psychologist*, *13*, 1–21.
- Hardy, L., Jones, G., & Gould, D. (1996). *Understanding psychological preparation for sport: Theory and practice of elite performers*. Chichester, UK: Wiley.
- Hindley, C. B. (1979). Problems of interviewing in obtaining retrospective information. In L. Moss & H. Goldstein (Eds.), *The recall method in social surveys* (pp. 100–108). London: University of London Institute of Education.
- Hjelle, L. A., & Ziegler, D. J. (1992). *Personality theories: Basic assumptions, research, and applications*. (3rd ed.). London: McGraw-Hill.
- Hodge, K. (1994). Mental toughness in sport: Lessons for life. The pursuit of personal excellence. *Journal of Physical Education New Zealand*, *27*, 12–16.
- Jones, C. M. (1982, November). Mental toughness. *World bowls*, 30–31.
- Jones, G. (1993). The role of performance profiling in cognitive behavior interventions in sport. *The Sport Psychologist*, *7*, 160–172.
- Jones, G. (1995). More than just a game: Research developments and issues in competitive anxiety in sport. *British Journal of Psychology*, *86*, 449–478.
- Kelly, G. A. (1955). *The psychology of personal constructs*. New York: Norton.
- Kitzinger, J. (1994). The methodology of focus groups: The importance of interaction between research participants. *Sociology of Health and Illness*, *16*, 103–121.
- Kroll, W. (1967). Sixteen personality factor profiles of collegiate wrestlers. *Research Quarterly*, *38*, 49–57.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.
- Loehr, J. E. (1982). *Athletic excellence: Mental toughness training for sports*. New York: Plume.
- Loehr, J. E. (1995). *The new toughness training for sports*. New York: Plume.
- Luszki, W. A. (1982). *Winning tennis through mental toughness*. New York: Everest House.
- Mason, J. (1997). *Qualitative researching*. London: Sage.
- Moss, L. (1979). Overview. In L. Moss & H. Goldstein (Eds.), *The recall method in social surveys* (pp. 159–169). London: University of London Institute of Education.
- Pankey, B. (1993). Presence of mind: Five ways to lower your class drop-out rate with mental toughness. *American Fitness*, *11*, 18–19.
- Patton, M. Q. (1990). *Qualitative evaluation methods* (2nd ed.). Beverly Hills, CA: Sage.
- Sparkes, A. C. (1998). Validity in qualitative inquiry and the problem of criteria: Implications for sport psychology. *The Sport Psychologist*, *12*, 363–386.
- Taylor, J. (1989). Mental toughness (Part 2): A simple reminder may be all you need. *Sport Talk*, *18*, 2–3.
- Tunney, J. (1987). Thoughts on the line. Mental toughness: Biceps for the mind. *Soccer Journal*, *32*, 49–50.
- Tutko, T. A., & Richards, J. W. (1976). *Psychology of coaching*. Boston: Allyn & Bacon.
- Werner, A. C. (1960). *Physical education and the development of leadership characteristics of cadets at the U.S. military academy*. Microcard Psychology, 132. Unpublished doctoral thesis, Springfield College, MA.
- Werner, A. C., & Gottheil, E. (1966). Personality development and participation in collegiate athletics. *Research Quarterly*, *37*, 126–131.

- Williams, M. H. (1998). *The ergogenics edge: pushing the limits of sports performance*. Champaign, IL: Human Kinetics.
- Williams, R. M. (1988). The U.S. open character test: Good strokes help. But the most individualistic of sports is ultimately a mental game. *Psychology-Today*, 22, 60-62.
- Woodman, T., & Hardy, L. (2001). A case study of organizational stress in elite sport. *Journal of Applied Sport Psychology*, 13, 207-238.
- Woods, R., Hocton, M., & Desmond, R. (1995). *Coaching tennis successfully*. Champaign, IL: Human Kinetics.