

# Identification and Development of Mental Toughness

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## Introduction

‘Mental toughness’ is probably one of the most used but least understood terms used by sporting communities globally and, in particular, by their media. Loehr (1982, 1986) was perhaps the first to popularise the term and he contended that at least 50% of superior athletic performance could be attributable to mental factors. Currently, within both scientific and coaching communities, mental toughness is now regarded as one of the most important psychological factors associated with achieving performance excellence in any sport. The purposes of this paper are first, to review recent sport psychology research that has addressed both definitional and development issues related to mental toughness. Second, to briefly present Personal Construct Theory as a potentially useful conceptual and theoretical backdrop to both current and future research; and third, to propose areas for future research that seem to have considerable potential in broadening both our inquiries into the phenomenon and the means of developing it among coaches, athletes, officials and others in the sporting community.

## Main Text

In a pioneering qualitative study of mental toughness Fourie and Potgieter’s (2001) content analysis of written responses from 131 expert coaches and 160 athletes from 31 team and individual sports revealed twelve characteristics of the term: 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, and ethics.

Gould, Dieffenbach, and Moffett (2002) chose to investigate the psychological characteristics, and their development, of Olympic champions. Both questionnaire and interview data from 10 Olympic champions (winners of 32 Olympic medals), their coaches (n=10), parents, guardians and/or significant others revealed that these athletes could be characterised by: the ability to cope with and control anxiety; confidence; sport intelligence; the ability to focus and block out distractions; competitiveness; a hard-work ethic; the ability to set and achieve goals; coach-ability; high levels of dispositional hope; optimism; adaptive perfectionism; and mental toughness/resilience. Results also revealed that a number of individuals and institutions influenced the athletes’ psychological development, specifically the athlete’s community and immediate family, non-sport as well as sport environment personnel, and the sport process itself. Coach and family influences were particularly important and ways in which these sources influenced the athletes were both direct, such as teaching or emphasising certain psychological lessons, and indirect, such as involving modelling or unintentionally creating certain psychological environments.

Jones, Hanton, and Connaughton (2002) focused specifically on how to define mental toughness and the required/essential attributes to be a mentally tough performer. Ten international performers participated in either a focus group or one-to-one interviews from which the following definition on mental toughness and attributes of the ideal mentally tough performer emerged. Jones et al. defined mental toughness as: “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”. (p. 209). The following attributes of mentally tough performers were also identified: unshakeable self-belief to achieve competition goals; unshakeable self-belief in their unique qualities that make them better than the rest; insatiable desire to succeed; ability to bounce back from set-backs; thrive on pressure; accept anxiety as inevitable; not affected by performances of others; remain focused despite personal issues; switch sport focus on/off as required; remain focused despite competition issues; push physical/emotional pain boundaries while maintaining technique/effort; regaining psychological control following unexpected/uncontrollable competitive events. Two implications of this research suggest first, that there is considerable value in talent development-searches for athletes with these characteristics with a view to providing them opportunities to further develop athletically in their sport. And second, competency profiling instruments comprising these characteristics could be created to identify specific psychological skills training needs for improvement.

Bull, Shambrook, James, and Brooks (2003) focused specifically on mental toughness in cricket and addressed two main objectives. First, to obtain a better understanding of what mental toughness is within cricket; and, second, to identify how existing mentally tough English cricketers developed their mental toughness. Twelve English cricketers identified by 101 English cricket coaches as being among the mentally toughest during the previous 20 years were interviewed. Analysis of their 1:1 focused interview transcripts identified the following four themes which were subsequently used to disseminate findings to England’s cricket coaching and playing population. *Environmental Influence*: parents, childhood, need to ‘earn’ success, opportunities to survive early setbacks, exposure to foreign cricket; *Tough Character*: resilient confidence, independence, self-reflection, competitiveness with self as well as others; *Tough Attitudes*: never-say-die mindset, go-the-extra-mile mindset, thrive on competition, belief in making a difference, exploit learning opportunities, willing to take risks, belief in quality preparation, determination to make the most of ability, self-set challenging targets; *Tough Thinking*: Think Clearly – good decision-making, keeping perspective, honest self-appraisal; Robust Self-Confidence – overcoming self-doubts, feeding off physical conditioning, maintain self-focus.

Most recently, in Australia, Middleton and colleagues (2004a, b, c) have not only presented a new definition of mental toughness, they have also developed a Mental Toughness Inventory (MTI) and a model of mental toughness that is both multi-dimensional and hierarchical. Middleton, Marsh, Martin, Richards, & Perry (2004a) asserted that the Jones et al. (2002) definition was inadequate in that it only described the outcomes of being mentally tough and did not define mental toughness itself. Based on their qualitative research with 33 participants (25 elite athletes and eight non-athletes with extensive elite level sport experience as either sports scientist, coach, psychologist or management), they concluded that “mental toughness is defined as an unshakeable perseverance conviction towards some goal despite pressure or adversity” (Middleton et al, 2004a p.6). The authors contend that this definition states not only what mental toughness is but also identifies the actions of mental toughness (e.g., emotion management, perseverance, and task focus) as well as the role of some the factors that orient individuals to be mentally tough (e.g., self-belief, determination commitment, attitude and task familiarity). In total they too identified 12 mental toughness characteristics namely, self-efficacy, mental self-concept, potential, task-specific attention, perseverance, task familiarity, personal bests, task value, goal commitment, positivity, stress minimisation, and positive comparisons.

Middleton et al., (2004a) subsequently developed a model of mental toughness that seems to capture the complexity of the concept with considerable specificity. In brief, the model separates mental toughness into ‘orientation’ and ‘strategy’ with further distinctions

emphasising factors that are either ‘actions’ (e.g., coping strategies, focusing attention) or ‘personal characteristics’ (e.g., self-belief, motivations). In addition, their 67-item mental toughness inventory (MTI: Middleton et al., 2004c) is designed to measure 12 separate components of mental toughness as well as global mental toughness (i. e., 13 factors in total). The MTI instrument was piloted among 479 (200 females; 279 males) aspiring elite athletes from a special sports high school in Sydney. Participants competed in several major team and individual sports and ranged in age from 12 to 19 years of age.

While the research that has been presented is impressive, other than brief reference to Grounded Theory, as a qualitative research procedural imperative, no mention or attempt has yet been made to link the concept of mental toughness to theory. The following section briefly presents Personal Construct Theory (Kelly, 1955) as an option when theorising on the meaning of mental toughness. This is the current focus of research being conducted by Chambers (2005) and Gucciardi (2005) at The University of Western Australia on, respectively, the ‘resilience-sport performance relationship’ and ‘understanding and developing mental toughness’.

*Personal Construct Theory* (PCT; Kelly, 1955) is a theory, which, rather than telling us what to think, tells us how to go about understanding what we think. Kelly envisaged “man as a form of motion” (p. 48) who is constantly engaged in actively describing and evaluating the phenomena he or she experiences by developing and maintaining internal representations so that he or she may anticipate and predict what will happen in future. According to Kelly, construing is not thinking or feeling but rather it is a process of discrimination taking place at any level of awareness, from verbal to intuitive thought, so that we may anticipate future events. Therefore, this theory involves the unification of all our senses and reflects the existing schism between affect, cognition, and conation, recommending that they be construed together for developing a fuller, more holistic understanding of meaning making, and ultimately human behaviour. PCT presents a framework within which scientific endeavours can come to understand and appreciate how another person theorises about their world; that is, it is a theory about theories. Not only does it present us with a framework of how we can go about understanding others, but it also provides us with a theory of change, which ultimately, is the endeavour of the athlete wanting to become mentally tough.

According to the PCT *individuality corollary*, we all have our own individual anticipations of certain events and even the most identical event will be construed differently from person to person. So no matter how similar the events are that sport people experience they will never construe any given event in a similar fashion. Whilst acknowledging that people differ in terms of the meanings they attribute, Kelly also purported that similarity between people is in their similarity of construing events and not because they encounter similar events or behave similarly, as explicated in the *communality corollary*. Thus individuality arises when people import different meanings from *similar events*; however, as events never repeat themselves we find communality in the meanings people ascribe to *different events* to represent a certain similarity in the psychological processes operating in those individuals. In other words, sport people are similar not because of their experiences but because of their construing. When trying to develop an understanding of the psychological processes of sport people, such as mental toughness, we need to consider both the *individuality* and *communality* corollaries together.

The *organisation corollary* also needs to be considered when trying to understand the meaning sport people ascribe to attributes such as mental toughness. According to this corollary, constructs are organised into a hierarchical system with some constructs being more personally important (superordinate) than others (subordinate). The purpose of this hierarchical organisation is to provide the individual with clear avenues of inference and

movement. Additionally, sport people do not only differ in their interpretations of events but also in the way that they organise their constructions of events.

Taking these three corollaries into consideration, an appropriate starting point for identifying and understanding mental toughness within a PCT framework would entail, firstly, identifying recurring themes (structure and content) in the meaning individuals ascribe to mental toughness, and secondly, identifying the organisation of this meaning. The basic premise is that we must place each person at the centre of knowledge by encouraging the individual to examine and explicitly communicate what comes implicitly to them.

The most suitable techniques for this procedure would include interview and focus group based techniques that allow the researcher to ask questions of relevance and, if required, probe the individual to elaborate on their descriptions. Questions about the identification of mental toughness should, for example, prompt interviewees about definitions, phrases, certain incidents of where they have or have not demonstrated mental toughness, attributes they consider to encapsulate mental toughness etc. Not only can the above themes be addressed but the researcher can also find out some preliminary information of the perceptions these individuals maintain with respect to possible avenues/techniques for developing mental toughness.

From the above we can identify those constructs which individuals (e. g., athletes, coaches, administrators, and parents) associate with mental toughness. We can now employ the *Repertory Grid* to further develop our understanding of mental toughness. Whereas traditional tests or questionnaires measure an individual on *a priori* constructs, the repertory grid enables the researcher to elicit what is important to the individual, by identifying the structure and content of meaning. This gives the individual the freedom to pursue personally meaningful constructs, as opposed to forcing them to respond on predetermined measures. It also provides the researcher with a way of dealing with qualitative information quantitatively (Fransella, Bell, & Bannister, 2004).

Performance Profiling (Butler, 1991) is an extension of the RepGrid methodology where the researcher elicits constructs that are essential to achieving performance excellence. In a similar fashion, a mental toughness profile may be established which identifies the characteristics associated with mental toughness. From an individualistic perspective, a mental toughness profile may be employed to allow each athlete to rate himself or herself on how much they possess of each characteristic. Ratings should also be gathered from other sources (e.g., coach), as the *sociality corollary* emphasises the importance of being aware of and understanding others construing processes to help them elaborate their own system. The attractiveness of this method is that it promotes self-awareness. Also, it will allow the individual (and coach) to assess their level of mental toughness, which can also serve as an indicator of development.

A mental toughness profile would also allow researchers and practitioners to tailor learning experiences for individuals and teams. Firstly, such a profile provides the researcher with a method that allows the measurement of the constructs held and the changes in constructs of athletes over a period of time. Understanding these changes will assist practitioners in both assessing the individual in relation to their development of mental toughness, and the changes that the individual must go through in order to become more mentally tough. Secondly, a mental toughness profile could be utilised for developing mental toughness by identifying the similarities encapsulated in mentally tough individuals of the more “elite” cohorts, and then assessing the “non-elite” cohort on this profile. From this we can identify similarities and differences that may enable the practitioner to better design learning experiences.

### Future Research

While an inestimable amount of mental toughness is undoubtedly *caught* (socialised), some of it can also be *taught* (coached). Research with gifted and talented school children (Csikszentmihalyi, 1993; Gagne, 1996, 2003) and athletes (Bloom, 1985; Cote, 1999; Cote, Baker, & Abernethy, 2003) has highlighted the important role that both coaches and parents play in facilitating desirable psychological attributes associated with mental toughness. However, further research is needed to pinpoint exactly ‘what’ needs to be taught and ‘how’. For example, if resilience is a key component of mental toughness how best can it be taught and/or caught? What experiences should younger athletes be exposed to, and when? Should these experiences necessarily be sport-specific or even sport-related?

Further research is also required to refine *Mental Toughness Inventories* that can be used both to identify (profile) and develop mental toughness among female as well as male youth-aged sport people. Longitudinal research approaches should compliment cross-sectional studies and a combination of quasi-experimental designs (e. g., single-subject, switched replication) as well as case studies should be used to evaluate interventions.

Some PCT derived developmental exercises that would facilitate awareness include the following: *Group (team) Work* – identify others perceptions of mental toughness (*sociality*), commonalities between mentally tough people (*communality*), which characteristics are more important than others (*organisation*). Focus groups encouraging discussions on these topics would not only facilitate the development of mental toughness but also identify areas that need some attention. Additionally, it would assist individuals in becoming explicitly aware of what may normally develop implicitly. *Individual* – self-awareness activities aimed at understanding perceptions of mental toughness (*individuality*), what choices are placed on certain events (*dichotomy*), situations in which individuals do or do not display mental toughness (*range*).

Finally, the role of mentoring, story-telling and account-making, which have rarely been monitored, could be explored and evaluated.

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