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## Understanding the coach's role in the development of mental toughness: Perspectives of elite Australian football coaches

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### Abstract

The purpose of this study was to explore elite coaches' perceptions of how they can both facilitate and impede the development of key mental toughness characteristics in the context of Australian football. Eleven coaches from a previous study (Gucciardi, Gordon, & Dimmock, 2008) were re-interviewed and the transcribed verbatim data were analysed using grounded theory data analytical procedures (Strauss & Corbin, 1998). Five categories that appear to be central to the coach's role in the development of mental toughness in Australian football emerged. Four of these categories (coach-athlete relationship, coaching philosophy, training environments, and specific strategies) were said to facilitate the developmental process, whereas the final category (negative experiences and influences) was said to impede this process. A grounded theory in which the aforementioned categories enable coaches to nurture a "generalized form" of mental toughness acquired during one's formative years into a "sport-specific form" pertinent to Australian football is presented. The theoretical and practical implications of these findings are discussed.

**Keywords:** *Coach training, grounded theory, psycho-social development, transferable skills, mentally tough*

### Introduction

The pursuit for performance excellence in sport encompasses the continuing development of four key facets of performance, namely physical, technical, tactical, and mental skills. However, when physical, technical, and tactical skills are evenly matched, which commonly occurs at the elite level, performers who possess more of what is commonly referred to as "mental toughness" appear to prevail more often than those with less mental toughness (Gucciardi, Gordon, & Dimmock, 2008). Athletes, coaches, sport administrators, and the media widely acknowledge the importance of mental toughness as a key ingredient of performance excellence (Connaughton & Hanton, 2009). Until recently, however, there has been a lack of rigorous scientific research designed to clarify anecdotal reports and develop theoretical conceptions that have important implications for measuring as well as developing and enhancing this desirable psychological construct. Initial (Fourie & Potgieter, 2001) and pioneering research (Jones,

Hanton, & Connaughton, 2002, 2007) in this area focused on understanding mental toughness and the key characteristics that encompass this construct from the perspective of athletes and coaches in various team and individual sports, whereas more recent examinations have explored this psychological construct within individual sports such as cricket (Bull, Shambrook, James, & Brooks, 2005; Gucciardi & Gordon, in press) and soccer (Thelwell, Weston, & Greenlees, 2005).

In addition to the "mental toughness framework" (Jones et al., 2007), a recent theoretical advancement that has considerable potential to guide researchers' and practitioners' work in the area was presented by Gucciardi et al. (2008). Based on interviews with 11 elite Australian football coaches, which was conducted within a personal construct psychology framework (Gucciardi & Gordon, 2009; Kelly, 1955/1991), Gucciardi and colleagues created a model of mental toughness that highlights the interaction of three components considered to be central to a conceptualization of mental toughness in Australian

Rules football (which is different to other Australian codes of football such as rugby union, rugby league, and soccer). These components were labelled characteristics, situations, and behaviours. Characteristics encompassed 11 bipolar constructs ranked in the following descending order of importance: self-belief vs. self-doubt (i.e. belief in mental and physical ability); work ethic vs. lazy (i.e. pushing one's physical and mental boundaries to their limits); personal values vs. poor integrity and philosophy (i.e. valuing becoming a better person and footballer through one's experiences); self-motivated vs. extrinsically and unmotivated (i.e. desire success and competitive challenges to showcase one's abilities); tough attitude vs. weak attitude (i.e. discipline, commitment, positivity, professionalism, and sacrifices towards becoming the best one can be); concentration/focus vs. distractible/unfocused (i.e. ability to focus on goals and objectives when confronted with distractions); resilience vs. fragile mindset (i.e. ability to overcome adversities, challenges, and pressures); handling pressure vs. anxious and panicky (i.e. ability to execute skills and procedures effectively under pressure); emotional intelligence vs. emotionally immature (i.e. an awareness and understanding of one's emotions and ability to manage emotions to perform successfully); sport intelligence vs. lack of sport knowledge (i.e. understand training and competitive environments and accept one's role within the team); and physical toughness vs. weak sense of toughness (i.e. not easily affected by minor injuries or physical fatigue, and enjoy 50–50 situations that involve physical risk). Although all aspects of being an elite footballer were cited as demanding varying degrees of mental toughness, several specific internal (e.g. lack of confidence, physical fatigue) and external (e.g. peer/social pressures, poor playing conditions) situations were highlighted. Behaviours referred to the overt indicators mentally tough footballers displayed in those circumstances demanding mental toughness (e.g. superior decision making, recovery from injury, consistent high-quality performances). Unlike previous work exploring the make-up of mental toughness in sport, this research offered a preliminary insight into both the processes and outcomes of mental toughness within the context of Australian football. In integrating these three components, Gucciardi et al. (2008) proposed the following definition:

Mental toughness in Australian football is a collection of values, attitudes, behaviours, and emotions that enable you to persevere and overcome any obstacle, adversity or pressure experienced, but also to maintain concentration and motivation when things are going well to consistently achieve your goals (p. 218).

With an increased understanding of mental toughness (for reviews, see Connaughton & Hanton, 2009; Gucciardi, Gordon, & Dimmock, 2009a), the next step in the conceptual evolution of this construct is to focus on ways to develop the attribute. Given the importance placed on basic and advanced psychological skills in maintaining mental toughness by elite performers (Connaughton, Wadey, Hanton, & Jones, 2008), Gucciardi and colleagues (Gucciardi, Gordon, & Dimmock, 2009c) examined the usefulness of psychological skills training in enhancing mental toughness among three youth-aged (Under-15) Australian football teams. They compared a programme ( $n=25$ ) involving psycho-educational and experiential workshop activities targeting the keys to mental toughness identified previously (Gucciardi et al., 2008) with a more traditional psychological skills training programme ( $n=26$ ) targeting self-regulation, arousal regulation, mental rehearsal, attentional control, self-efficacy, and ideal performance state, as well as a control group receiving no intervention ( $n=24$ ). Multi-source ratings (coach, parent, and self ratings) of mental toughness using the Australian football Mental Toughness Inventory (AfMTI; Gucciardi, Gordon, & Dimmock, 2009b) as well as self-reported flow and resilience were recorded pre- and post-intervention. Overall, both intervention groups reported greater positive changes in subjective ratings of mental toughness, resilience, and flow than the control group. Parents and coaches also reported similar improvements in footballers' mental toughness. Both psychological skills training packages appeared to be as effective as each other in enhancing mental toughness. Although the long-term effects of the programmes and relationships with subsequent performances were not examined, these results provided preliminary support for the premise of offering psychological skills training packages to enhance mental toughness among youth-aged Australian footballers.

Despite the encouraging findings reported by Gucciardi et al. (2009c) and consistent endorsements from practitioners, qualitative research indicates that there are other influential factors, in addition to psychological skills training, which need to be considered in the mental toughness development process. Based on interviews with 12 male English cricketers ranked as being among the most mentally tough players in the past 20 years by 101 English cricket coaches, Bull et al. (2005) highlighted the interaction of a performer's environment, character, attitudes, and thinking as a possible means of developing mental toughness. Childhood experiences (including parental influences) and secondary influences (e.g. need to earn success, have opportunities to survive early setbacks, and exposure to

foreign cricket) were key components of the environmental influences category that was generated by these authors. Nonetheless, while revealing that these influences were considered an integral component in the development of mental toughness, little information was provided as to how (i.e. processes, strategies, mechanisms) these sources exerted their influence in the development process.

In a more recent study, Connaughton et al. (2008) re-interviewed seven athletes from a previous study (Jones et al., 2002) to understand their perceptions of how mental toughness is developed. According to these participants, the development of mental toughness was a long-term process that involved the interaction of a number of important factors, including the motivational climate, key individuals within an athlete's socialization network (coaches, peers, parents, grandparents, siblings, senior athletes, sport psychologists, and team-mates), sport-specific and life experiences, as well as a strong intrinsic motivation to succeed. Participants also believed that maintenance of mental toughness was contingent on three sources (or factors): intrinsic motivation to succeed; social support; and the implementation of basic and advanced psychological skill use. Overall, it appears that key individuals in the socialization network (e.g. parents, siblings, coaches, team-mates) play a pivotal role in fostering a home and sporting environment that encourages the development and maintenance of those values, attitudes, emotions, and cognitions that encompass mental toughness.

Despite this recent surge in empirical contributions, our understanding and applied efforts remain limited by the lack of evidence-based information on best practices regarding the processes and mechanisms by which mental toughness is developed. Because coaches occupy a central and highly influential role in the psycho-social development of athletes (e.g. Wyllemann & Lavallee, 2004), coach training programmes represent one of the most important means by which to influence and optimize the development of mental toughness in organized youth sport. In addition to being considered "experts" by young athletes, direct interactions between the coach and athlete typically outnumber those with other influential adults such as parents (Conroy & Coatsworth, 2006). Elucidating information that can guide coaching practices (especially for youth sport) is important because most non-school youth sport coaches have little formal coaching education and develop coaching guidelines based on experiences of trial and error or through the modelling of professional coaches who work with vastly different populations (Wiersma & Sherman, 2005). Here we choose to focus on information that can be used to guide coach education and training programmes, as

these have been highlighted by athletes, parents, and coaches as a means by which to enhance athlete-centred programmes such as psychological skills training aimed at developing mental toughness (Gucciardi, Gordon, & Dimmock, 2009d). Unfortunately, little is known about coach perspectives on mental toughness in sport or their perceived role in the developmental process. It is therefore important to ascertain coach perspectives on the mechanisms and strategies they employ to develop mental toughness. Such knowledge is crucial if we are to effectively develop coach education and training programmes that can increase a coach's ability to facilitate the development of mental toughness. Previous mental toughness research (e.g. Connaughton et al., 2008) provides support for employing highly specialized samples in which only one perspective is explored.

An understanding of how the sources and methods of influence both facilitate and impede the development of mental toughness is another issue that has yet to be addressed in the literature. Indeed, some models of talent development (e.g. Abbott & Collins, 2004) have been criticized for focusing on the positive influences such factors have while disregarding the fact that such factors also work negatively (Tranckle & Cushion, 2006). Accordingly, this study was designed to help fill this void in the literature by examining the mental toughness development process within an Australian football context by generating an understanding of the strategies used by experienced and successful elite coaches. Unlike previous research in the area, we sought to generate an understanding of the processes by which these important individuals cultivate and facilitate as well as impede the development of those characteristics underpinning mental toughness in Australian football (Gucciardi et al., 2008). Given that Australian football is a sport that is rarely studied in the sport psychology literature, it also offers the opportunity to determine the extent to which previous data can be generalized to such a unique sport. We anticipated that several commonalities with previous research would be generated (e.g. encouragement, modelling, and motivational climate). However, no specific predictions were made regarding the exact nature of these mechanisms and strategies for Australian football.

## Methods

### *Participants*

Adopting a similar design to Connaughton et al. (2008), each of the 11 male participants (mean age 42.0 years,  $s = 9.6$ ) from Gucciardi and colleagues' (2008) sample were re-interviewed because each had an intimate knowledge of the specific meanings of

each key characteristic. Each coach was recruited from the Australian Football League (AFL) and Western Australian Football League (WAFL) and had extensive playing (AFL: mean 143 games,  $s = 22.7$ ; WAFL: mean 73 games,  $s = 17.7$ ) and coaching experience (AFL: mean 107 games,  $s = 25.2$ ; WAFL: mean 105 games,  $s = 19.5$ ) at all levels of the game, had achieved numerous individual and team successes as a player and coach (e.g. collectively three premierships, six grand final appearances, seven all-Australian team selections), and had been or were currently involved with coach and player development within an Australian football context. At the time of interview, each participant was either a head ( $n = 9$ ) or assistant ( $n = 2$ ) coach with an elite Australian football team.

#### *Interview schedule*

A semi-structured interview schedule consisting of a series of open-ended questions was developed specifically for this study. It served to structure the conversation around each participant's perception of how the key characteristics revealed previously (cf. Gucciardi et al., 2008) can be acquired or developed through coaching. Specifically, the questions encouraged participants to consider the methods and strategies they employed to facilitate the mental toughness development process. Examples of interview questions included: "What experiences do you think footballers should be exposed to in developing each component of mental toughness?" and "What techniques have you employed to help develop or nurture the mental toughness components?" Given that influential sources can have both positive and negative effects on the psychological development of individuals (cf. Gagné, 2004; Wolfenden & Holt, 2005), we were also interested in identifying those processes that serve to hinder or prevent the optimal development of mental toughness. Both clarification ("What do you mean by ...?") and elaboration ("Can you give me an example of ...?") probes were used throughout each interview to prompt interviewees and encourage clarity and richness of data (Patton, 2002). A copy of the interview guide can be obtained by contacting the corresponding author.

#### *Data analysis*

*Overview of data analysis procedures.* Although grounded theory methodology includes guidelines for the collection and analysis of qualitative data (Glaser & Strauss, 1967; Strauss & Corbin, 1998), we employed this methodology primarily for its guidelines on data analysis. Data analytical procedures were in accordance with the grounded theory

methodology advocated by Strauss and Corbin (1998). Grounded theory coding techniques encourage the analyst to move from description, through conceptual categorizing, to relationship building and theorizing (Glaser & Strauss, 1967). In line with grounded theory procedures, data analysis proceeded concurrently with participant interviews. Specifically, constant comparison between and within the concepts, sub-categories, and categories occurred throughout data collection and analysis so that the basic properties and dimensions of a category or construct, its causal conditions, context and outcomes, and the relationships and patterns between categories could be defined (Glaser & Strauss, 1967; Strauss & Corbin, 1998). Each concept was compared with other concepts and categories, and each category was compared with other categories so that similarities and variations between and within the properties and dimensions of categories could be identified. Referred to as "constant comparative analysis", this ongoing process of confirmation and modification is essential to ensure that the emerging framework is inherently grounded in the data (Glaser & Strauss, 1967).

*Open coding.* Open coding is the preliminary stage of data analysis whereby the analyst endeavours to reveal, specify, and label concepts that resemble the data in an attempt to discriminate and differentiate between concepts (Glaser & Strauss, 1967; Strauss & Corbin, 1998). Initially, the interview transcript data were scrutinized and dismantled into discrete, analytic segments and analysed line-by-line so that similarities and differences could be examined and compared (Glaser & Strauss, 1967; Strauss & Corbin, 1998). For example, extracts of raw data relating to the concept of "self-belief" were compared and contrasted to identify similarities and inconsistencies between different descriptions of self-belief. To assist in classifying and grouping similar types of data as well as developing new concepts, descriptive or conceptual labels were allocated to each concept.

*Axial coding.* Axial coding is an intermediate process in which the analyst attempts to (re)assemble the codes developed through open coding in new ways (Strauss & Corbin, 1998). Specifically, similarities and differences in the codes were examined and clustered to create categories and sub-categories, which were then compared and contrasted to reveal links between categories based on their properties and dimensions (see Figure 1). Aspects relating to a category's causal condition, context, intervening conditions, action/interactional strategies, and consequences were employed to facilitate this process (Strauss & Corbin, 1998).

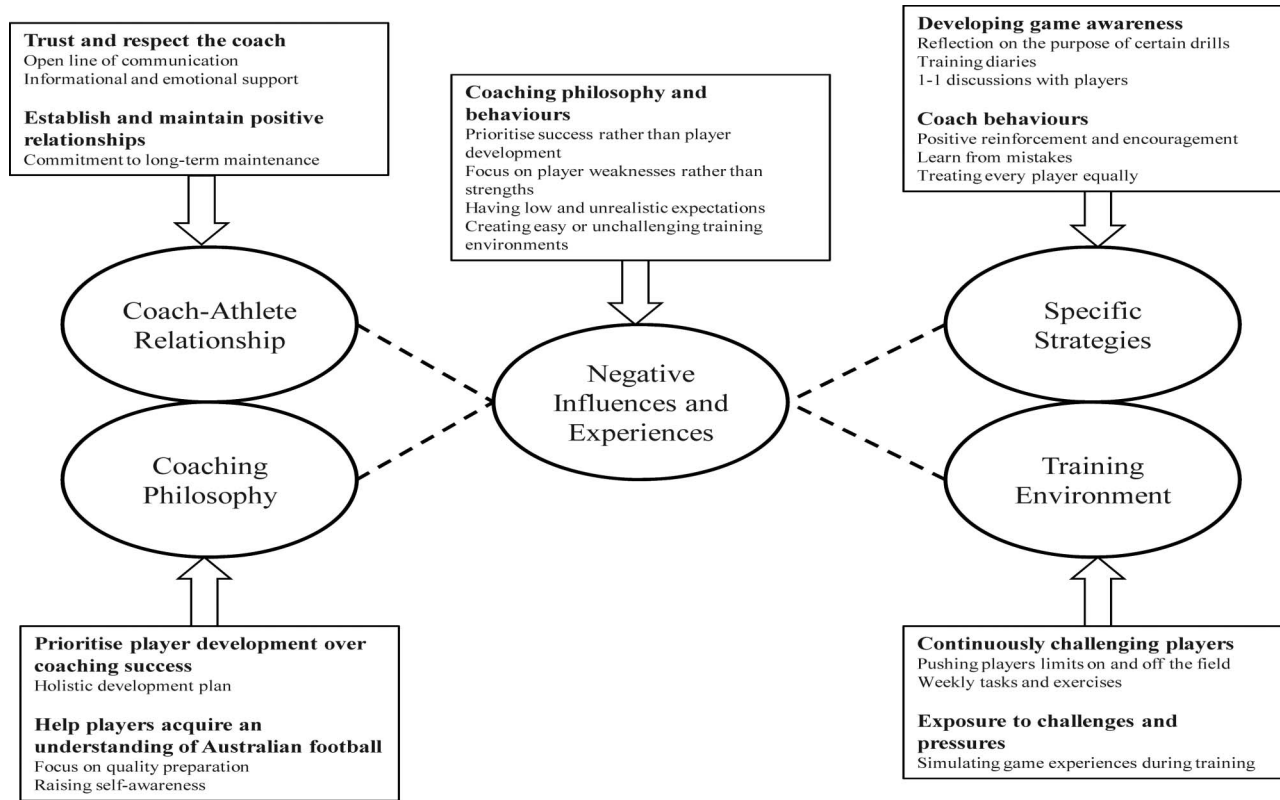


Figure 1. Conceptual overview of concepts, sub-categories, and categories associated with the development of mental toughness in Australian football.

*Selective coding.* The concepts and categories identified through both open and axial coding were refined and integrated into an emerging model to explain the relationships between categories (see Figure 2). The five central categories were identified as playing a unique but interacting role in a holistic understanding of the development of mental toughness in Australian football. Memos and integrative diagramming were employed throughout this process to facilitate the transition from a descriptive to a conceptual mode of thinking (Strauss & Corbin, 1998).

*Trustworthiness.* Two techniques were employed to demonstrate that the data reflected the reports of the participants (Lincoln & Guba, 1985). First, both the primary and secondary researcher analysed the data in an attempt to circumvent the inclusion of any bias on the part of the analysts. Second, each of the 11 interviewees was provided with a detailed overview of the results of the analysis and was asked to reflect on and verify the accuracy of the analysts' interpretations. In addition to these traditional techniques, the researchers performed an alternative member-checking technique in which the initial conceptualization of the development of mental toughness that emerged from the 11 interviews was presented to a large cohort of coaches ( $n = 58$ ) attending the AFL's

National Coaching Conference. During a 90-min workshop conducted by the second author, conference attendees were assembled into small groups (approximately five to seven) and asked to examine the emergent categories to determine if they were reflective of their experiences and perceptions and to provide written feedback. This process was replicated in a second 60-min workshop with an independent sample ( $n = 49$ ) of coaches attending a State Coaching Conference. Both conference cohorts included a variety of community-based, sub-elite and elite coaches, who had thus worked with footballers from a variety of backgrounds. There was minimal disagreement between and within the two coach samples with the structure and design of the model being substantiated.

*Procedure*

The university human ethics committee granted its approval before starting the study. Each participant was contacted by telephone by the first author and was informed of the mental toughness research being conducted. Once each participant agreed to be interviewed at a time and place most convenient to them, they were sent two documents via email detailing (a) Gucciardi and colleagues' (2008)

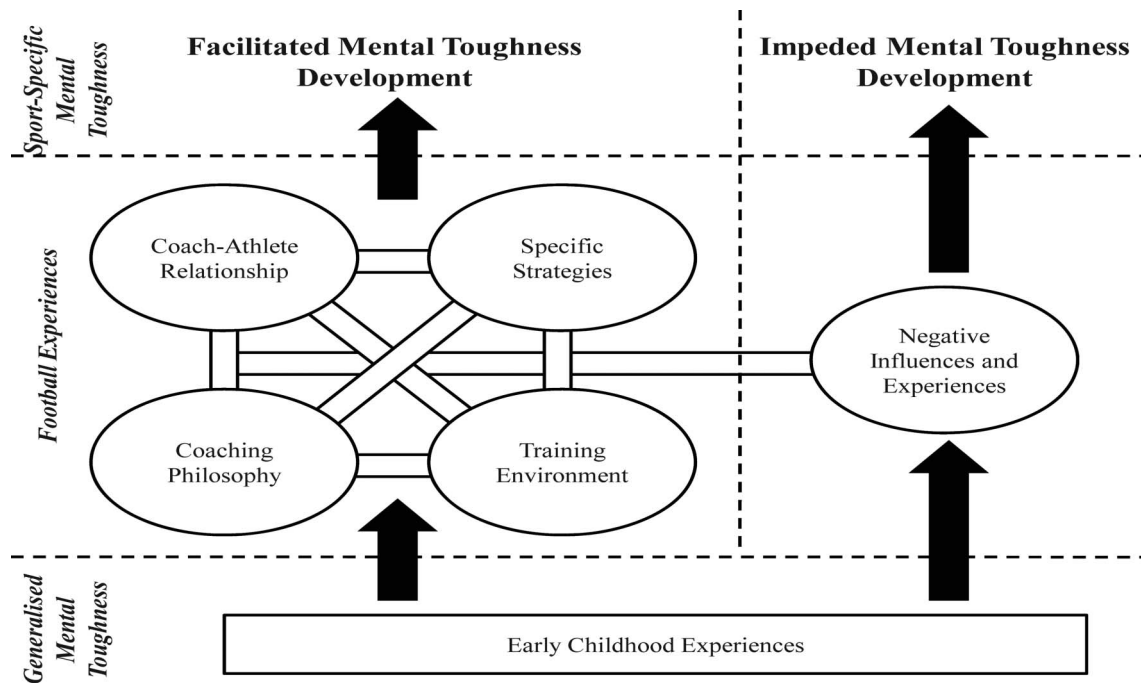


Figure 2. A grounded theory of the mental toughness development process in Australian football.

conceptualization of mental toughness in Australian football and (b) the interview schedule at least 3 days before the interview. They were asked to read both documents and consider the questions in relation to the conceptualization of mental toughness over the days preceding the interview. Interviews lasted between 45 and 90 min and were recorded and transcribed verbatim. Informed consent was obtained before the start of each interview.

## Results

Our analysis revealed a number of strategies and mechanisms by which coaches positively and negatively influence the mental toughness development process. Table I provides an overview of these mechanisms and strategies in relation to each of the 11 key mental toughness characteristics reported by Gucciardi et al. (2008). The presentation of the results in the following sections is organized around the five overarching categories that accounted for the perceived strategies and mechanisms employed by coaches; we also briefly detail a final category pertaining to early childhood experiences that was prevalent among the coaches' discourse. Figure 1 provides a conceptual overview of the concepts, sub-categories, and categories associated with the development of mental toughness in Australian football specific to the football context. Verbatim quotes are included throughout the following sections to contextualize and support the discussion of the findings.

### *Early childhood experiences*

Although not a primary objective of the present study, there was a general consensus among participants that early childhood experiences play an important role in nurturing a "generalized form" of mental toughness. Parents, in particular, were highlighted as central figures in optimizing such experiences. One participant clearly captured the nature of this influence in his comments: "We are products of our parents. If they display discipline, a 'never give up' or 'can do' attitude, then we as their child generally adopt the same attitude". Other participants noted mechanisms and strategies by which they believed parents can influence the development process in their discourse on this issue. For example, parents "who guide and encourage their child to understand their actions and thoughts so they can learn from both good and bad experiences", "expose their children to as many different and varied experiences, adversities, challenges, and pressures as possible", "promote autonomy by encouraging their child to explore new and different situations and experiences", and "provide informational, tangible, and emotional support" were believed to facilitate the development of mental toughness. Once engaged in youth football, however, the importance of parents for developing mental toughness was said to fade away with coaches replacing them as the major source of influence: "We (coaches) take over parents' role as the drivers of their [athletes] mental development when the kids come play football for us ... parents take a back seat".

Table I. Overview of the strategies and mechanisms associated with the development of key mental toughness characteristics.

	Bipolar, rank-ordered mental toughness characteristics	
	“Mentally tough” pole	“Mentally Weak” Pole
	<i>Facilitative strategies and mechanisms</i>	<i>Impeding strategies and mechanisms</i>
1. Self-belief	Exposure to various experiences; encourage autonomy; competition simulation (physical and mental pressures); strengths-focused; positive reinforcement and encouragement	Low and unrealistic expectations; focus on player's weaknesses; limited social support; encouragement pressurizes demand for success
2. Work ethic	Encourage autonomy; role models (coach, parent, peers); setting expectations and standards; challenging training environment; emphasize improvement and enjoyment over winning	Low and unrealistic expectations; negative role models (coach, parent, peers); emphasize winning over enjoyment and personal development; unchallenging training environments
3. Personal values	Social support; role models (coach, parent, peers); setting expectations and standards	Negative role models (coach, parent, peers); emphasize winning over enjoyment and personal development
4. Self-motivation	Exposure to various experiences; encourage autonomy; encourage discussion and debate; emphasize improvement and enjoyment over winning	Low and unrealistic expectations; emphasize winning over enjoyment and personal development; focus on player's weaknesses; encouragement pressurizes demand for success
5. Tough attitude	Guidance and encouragement; role models (coach, parent, peers); open communication; challenging training environment	Negative role models (coach, parent, peers); unchallenging training environments
6. Concentration and focus	Setting expectations and standards; role models (coach, parent, peers); pre-performance routines	De-emphasize preparation and planning; encouragement pressurizes demand for success
7. Resilience	Guidance and encouragement; role models (coach, parent, peers); exposure to various experiences; social support; one-to-one conversations; challenging training environment; emphasize improvement and enjoyment over winning	Emphasize winning over enjoyment and personal development; unchallenging training environments; focus on player's weaknesses; limited social support
8. Able to handle pressure	Exposure to various experiences; encourage autonomy; challenging training environment; positive reinforcement and encouragement; emphasize improvement and enjoyment over winning	Low and unrealistic expectations; emphasize winning over enjoyment and personal development; unchallenging training environments; encouragement pressurizes demand for success
9. Emotional intelligence	Encourage discussion and debate; positive coach-athlete relationships; emotional support; open communication	Explanations lack reasoning and justification; democratic coaching style
10. Sport intelligence	Exposure to various experiences; encourage discussion and debate; competition simulation (physical and mental pressures); performance diaries; information dissemination	Explanations lack reasoning and justification; democratic coaching style; de-emphasize preparation and planning; lack of feedback
11. Physical toughness	Competition simulation (physical and mental pressures); challenging training environment	Unchallenging training environments; focus on player's weaknesses; parental criticisms



*Football experiences*

Each coach highlighted the importance of the football experiences that one is exposed to over the course of one's football career in transforming generalized forms of mental toughness formed during early childhood experiences into a more "sport-specific form" of mental toughness specific to Australian football. As one participant noted, "Our childhood sets the stage for our potential to develop forms of mental toughness that are specific to certain contexts ... whether that context is football (as a player or coach) or other professional endeavours". Although recognizing the importance of other influential persons within an individual's socialization network such as family, friends, and team-mates, coaches were cited as the major source of influence within football: "Coaches at all levels of the game, whether they realize it or not, are so important for the development of footballers, not only physically but also mentally".

*Coach-athlete relationship.* The relationship that exists between a coach and his or her players was commonly discussed as an influential source in the mental toughness development process by all of the coaches. Specifically, it was noted that "if players don't trust or respect their coach, then they won't be as willing to take on board what they say or do". The coaches highlighted several important strategies and mechanisms by which to establish and maintain positive and supportive coach-athlete relationships that were perceived to facilitate the development of several key mental toughness characteristics. The following quote captures the general essence of this category:

If coaches are to effectively coach their players through their methods and techniques, there needs to be a common ground of trust and respect for that individual, otherwise players won't be as willing to use that information in their physical and mental development.

A number of aspects of the coach-athlete relationship were discussed by the coaches in this regard, most of which were related to having an open line of communication between the athlete and coach. For example, offering athletes an instructive component related to the performance side of coaching as well as a socio-emotional component related to affective and cognitive aspects was considered by several participants as one of the most effective strategies. The following quote reinforces this opinion: "The coach needs to, what I like to call, 'turn the collar around' and be there for his players to listen to personal problems in addition to football-related issues".

A major factor here was providing athletes with various opportunities or contexts within or outside the football environment in which to discuss such issues, as reflected in the following quote:

I make my players fully aware that I am available to discuss any issue they like whether that be during a training session where they pull me aside for a moment or call me up on my mobile to have a chat or organize a quiet drink with them.

In addition to these discussions on establishing a positive relationship, it was clearly evident among the coaches' discourse that there needs to be a long-term orientation towards maintaining the relationship. This outlook was characterized by the following quote: "Just as the coaching process is a long-term venture, so too is the relationships we form ... and there needs to be a commitment to maintaining such a healthy relationship over time and not just for the short term".

*Coaching philosophy.* Coaches typically recognized that the coaching philosophy one ascribes to plays a pivotal role in the development of key mental toughness characteristics such as self-belief, personal values, work ethic, self-motivation, emotional and sport intelligence, and physical toughness in several important ways. A major discussion point in this regard related to coaches prioritizing athletic and personal development over and above coaching success in the development of mental toughness. Those coaches characterized by such a philosophy were said to "view players as a person and athlete, and not just a player on their team" as well as "acknowledge and accept that players are going to fail at times ... but focus on helping players learn from their failures so they can do it differently in the future". Related to this discussion point was the adoption of a "holistic development" perspective in which an emphasis is placed on promoting a footballer's skills in terms of those required for performance excellence in football but also the athlete's skills in terms of social and personal development. As one respondent stated:

I fully support the idea that mental toughness in football is a lot more than what you do on the field. Of course, it has a lot to do with that but being able to reach your potential in football is affected by other aspects of your life, whether that is school for a developing player or work for older footballers. Coaches need to recognize this and strive to develop players' football and life skills.

Helping a developing player acquire an understanding of the game, how it is played, and the many

obstacles, challenges, and pressures that one is likely to encounter was another component of a coaching philosophy considered an integral process in the development of mental toughness by all coaches. One participant described the nature of this process in terms of encouraging players to understand that the better prepared they are, the better the outcome will be: "When a player knows they are fully prepared they are more confident, as they know that they have done everything possible to perform to the best of their ability". Another participant described the importance of this process in "helping developing players in acquiring an understanding of each pressure variable that can create self-doubt". Aside from specifically targeting the sport intelligence component of mental toughness described by Gucciardi et al. (2008), the coaches believed that an understanding of the game has several implications for the development of self-belief. Specifically, having a greater awareness and deeper understanding of such information was said to provide a platform of self-belief in terms of "anticipating these events in the future and being more confident in being able to deal with them because they are not surprised by these situations when confronted with them in the future".

*Training environment.* The training environment created and maintained by coaches at all levels of the game was articulated by several participants as an important means through which coaches contribute to the development of mental toughness. There was a consensus that by creating a challenging environment where every player was being challenged continuously, in terms of both on- and off-field issues, the importance of hard work, self-motivation, and physical toughness was communicated. As one coach remarked:

If training was made easy, then players would expect this during a competition ... and we all know that is certainly not the case. Instead, if we [coaches] create an environment that continuously pushes them [footballers] to their physical and mental limits during training sessions, then they will be better prepared for the rigours of competition.

Such challenging environments included "continuously challenging players to see where they are currently at in terms of physical and mental ability through various drills and weekly tasks" and "helping players develop the necessary skills to deal with these various challenges in the future". Other coaches highlighted the importance of "pushing players' limits of physical pain during training drills", while some described the benefits associated with

"simulating competition scenarios during training sessions so that players can develop the necessary skills to cope with pressure and anxiety during competition". Similarly, several coaches described the importance of exposing footballers to tough, adverse situations so that players gain experience with such adversity and can identify the best process(es) for dealing with and thriving in such conditions in the future.

*Specific strategies.* Aside from those strategies and techniques described in the preceding sections, the coaches further identified a specific number of strategies and techniques for developing mental toughness in their players. For example, the following techniques and strategies were discussed by several coaches with regard to helping players develop an awareness and understanding of the game: asking players why they are doing certain drills and the implications of the drill for competitive performances during training sessions; having players complete training diaries that include self-assessments of own and team performance; having one-to-one conversations with players during training sessions about aspects of the drill and their performance during such drills; and exposing players to a variety of events that replicate the experiences involved in competitive football (e.g. pressure simulations). The coaches also discussed a number of specific strategies and techniques for instilling self-belief and a strong work ethic among their players, which included: positive reinforcement and encouragement for poor and excellent performances and effort; praising positive behaviours in front of the whole team; encouraging mistakes as opportunities to learn from; and an "every player being equal" philosophy. Coach behaviours such as these were said to contribute to the development of mental toughness by modelling appropriate personal values (e.g. pride in performance, personal development) as well as enabling players to acquire specific mental skills associated with mental toughness (e.g. concentration/focus, handling pressure).

*Negative football experiences.* Participants' narratives supported the notion that coaches can hinder or even prevent the optimal development of mental toughness. Several specific strategies and processes were highlighted in this regard. One of the most commonly cited methods by the coaches in which this is perceived to occur was a coach letting his or her desire for player and therefore coach success overrule the need for individual player development, as reflected in the following extract: "Focusing on winning and success encourages us to set standards against the things we are not in control of ... we can control the athletic and personal development

of our players so these should be our benchmarks". The implication of this process was said to "emphasize inappropriate values and attitudes" and encourage coaches to "overlook the importance of developing mental and life skills".

The importance of establishing and maintaining training environments that continuously challenge players was again reinforced in the coaches' discussions on the ways in which coaches can hinder the mental toughness development process. In contrast to coaches who foster challenging environments, those coaches who create "an easy environment where players just do what is necessary and not above and beyond what is required" were said to fail in exposing their players to important experiences that are crucial for developing key facets of mental toughness, such as self-belief, sport intelligence, physical toughness, and handling pressure. Common processes to facilitate such "unchallenging" environments identified by the participants included: accepting excuses from players; not encouraging them to take responsibility for their own actions; coaches solving a player's problems for him or her; and failing to push players through physical and emotional pain boundaries.

Two specific processes were also highlighted by the coaches as means by which coaches negatively impact the development of key characteristics, such as self-belief, work ethic, self-motivation, and handling pressure. First, coaches who focus on and over-emphasize a player's weaknesses and fail to acknowledge and reinforce his or her strengths were commonly cited by the coaches. The following excerpt captures the essence of this theme:

I have found that when I focus on a player's deficits and weaknesses, it leaves [him or her] fixated on working on these aspects of [his or her] performance ... of course, we need to work on our weaknesses but I find now that when I balance an understanding of a player's weaknesses with [his or her] strengths, so much more is gained.

There was a general consensus that when coaches address a player's weaknesses while emphasizing his or her strengths, he or she is better equipped to deal with the many challenges, pressures, and adversities he or she experiences as opposed to merely coping with that situation. Another discussion point on the ways in which coaches hinder the development of mental toughness prevalent among the coaches' discourse related to footballer expectations. Specifically, imposing low and unrealistic expectations on footballers was highlighted as being extremely detrimental, as epitomized by one coach who stated that "low and unrealistic expectations have a way of attacking one's self-belief and motivation to achieve

one's goals ... and without this motivation and belief such standards become unattainable". Interestingly, several coaches drew on issues pertaining to a positive coach-athlete relationship when discussing their ability to identify realistic and appealing goals to set their group of players: "Viewing and knowing my players as both footballers and people certainly makes it easier for me to set standards and expectations that I know they can and will want to achieve".

## Discussion

The primary purpose of this study was to generate elite Australian football coaches' perceptions of the strategies and mechanism by which coaches' impact on the development of key mental toughness characteristics. Unlike previous research in the area (e.g. Bull et al., 2005; Connaughton et al., 2008), our aim was to elicit an understanding of the processes by which coaches cultivate and facilitate as well as hinder the development of those characteristics reported as underpinning mental toughness in Australian football (cf. Gucciardi et al., 2008). Although not a specific focus of the present study, participants recognized the crucial role that parents play in fostering childhood experiences in which a "generalized form" of mental toughness can be developed and transformed into a "sport-specific form" of mental toughness through coaching methods in the football context. As anticipated, the majority of strategies and mechanism reported here (e.g. encouragement, modelling, and motivational climate) are consistent with previous mental toughness (Connaughton et al., 2008) and talent development research (for a review, see Martindale, Collins, & Daubney, 2005).

The important influence of parents was said to continue through to an individual's entry into Australian football but slowly diminished during his or her early years of participation in football. It was during this time that participants believed coaches become the most influential source in the mental toughness development process. Indeed, this finding is reflective of the importance and nature of the coach-athlete relationship described by the coaches in the present study, consisting of both a professional and personal component. The importance of developing coach-athlete relationships has been previously highlighted as one of the most important elements for developing life skills (Petitpas, Cornelius, Van Raalte, & Jones, 2005). Research supports such theorizing, indicating that coach-athlete relationships involving both a professional and personal component promote the development of physical skills related to performance improvements, but also to the athlete's skills in

terms of psycho-social development (see Jowett & Poczwardowski, 2007).

Aside from developing and maintaining positive relationships with athletes, participants believed that coaches have the potential to shape the development of a sport-specific form of mental toughness through a variety of behaviours, specific strategies, and their coaching philosophy. Coaches who adopt a coaching philosophy emphasizing the “holistic” development of footballers in which they prioritize athletic and personal development over and above coaching success is consistent with award-winning coaches’ perspectives on the development of life skills (Gould, Collins, Lauer, & Chung, 2007). Several other strategies and mechanisms that coaches employ to positively and negatively impact on the development of key mental toughness characteristics are also consistent with previous research. They include, but are not limited to: setting clear standards and expectations (Gould, Dieffenbach, & Moffett, 2002; Gould et al., 2007; Martindale et al., 2005); providing encouragement and support (Gould et al., 2002); espousing a philosophy of winning but, at the same time, emphasizing learning, effort, and improvement (Martindale et al., 2005); modelling positive behaviours and attitudes (Gould et al., 2007); social support (Connaughton et al., 2008; Wolfenden & Holt, 2005); and coach leadership (Connaughton et al., 2008).

The general theme among the coaches’ discourse indicated that the aforementioned strategies and mechanisms enable them to create specific motivational climates in which the developing footballer is exposed to a greater variety and number of opportunities for personal development. The coaches recognized that through such socialization experiences during sport individuals can acquire or refine fundamental psychological characteristics pertinent to mental toughness in Australian football – that is, self-belief, work ethic, personal values, self-motivation, tough attitudes, concentration and focus, resilience, handling pressure, and emotional intelligence. In particular, the coaches described these nine key mental toughness characteristics as being highly transferable to other life contexts such as school and work (cf. Connaughton et al., 2008), which is consistent with the lifestyle component of Jones and colleagues’ (2002) definition of mental toughness. Previously, transferable skills developed within the sporting environment and which are applied in another facet of life or career have been associated with facilitating “smooth” transitions out of sport (e.g. Stephan, Bilard, Ninot, & Delignieres, 2003). It seems that cognitions associated with these different attitudes, values, and behaviours become more salient in contexts where they are modelled and reinforced, thus cueing individuals to behave and

respond in a manner that is congruent with those values, attitudes, and behaviours across different contexts (Bandura, 1977).

#### *Towards a grounded theory of the mental toughness development process in Australian football*

Figure 2, which represents the final theoretical integration of the findings from this study, captures a grounded explanation of how Australian football coaches can both facilitate and impede the development of mental toughness. Overall, it appears that coaches can both facilitate and impede the developmental process in which a “generalized form” of mental toughness acquired during one’s childhood experiences can be nurtured into a “sport-specific form” of mental toughness that is pertinent to Australian football. The preliminary theory presented here details the mechanisms and strategies employed by coaches in the sporting context; it does not adequately capture those childhood experiences that both facilitate and impede the development of mental toughness in its current form. Further research is required to explore this component of the theory.

Findings suggest that coaches can facilitate the development of mental toughness by: developing and maintaining positive coach–athlete relationships; adopting a coaching philosophy that focuses on personal and professional development rather than achieving success; creating training environments that continuously challenge and expose players to various challenges, pressures, and adversities; and employing specific techniques that include coaching behaviours and game awareness. In contrast, coaches can impede the development of mental toughness through negative influences and experiences, such as: prioritizing success over player development; focusing on players’ weaknesses as areas for improvement; having low and unrealistic expectations; and creating easy or unchallenging environments for players.

#### *Theoretical and practical implications*

The current study makes several important theoretical contributions to the literature on mental toughness in sport. It provides the first examination detailing information about the ways in which coaches both positively and negatively impact the mental toughness development process in Australian football. Just as an awareness and understanding of positive sources and methods of influence have implications for the development of mental toughness, so does an awareness and understanding of negative sources and methods of influence. Indeed, some models of talent development (e.g.

Abbott & Collins, 2004) have been criticized for focusing on the positive influences such influential sources have while disregarding the fact that such sources also work negatively (Tranckle & Cushion, 2006). A unique aspect of this study, therefore, was the generation of information on facilitative and debilitating strategies and mechanisms that were linked with the development of specific key mental toughness characteristics (see Table I). From a conceptual standpoint, understanding how mental toughness is both facilitated and hindered provides a basis from which we can better understand why Australian footballers may develop higher or lower levels of mental toughness.

The strategies and mechanisms by which coaches both positively and negatively influence the development process revealed here parallel many of those described previously in research on mental toughness (Connaughton et al., 2008) and talent development (for review, see Gagné, 2004; Martindale et al., 2005; Petitpas et al., 2005). Given that coaches' perceptions of the mental toughness development process have yet to be examined, such similarities are encouraging and strengthen our confidence in the validity of the interpretations on these important methods of influence generated previously with athletes (e.g. Connaughton et al., 2008). In addition to strengthening our confidence in such findings, the present results extend the findings to a sport not previously studied in terms of the development of desirable psychological characteristics. It also appears that the development of each key mental toughness characteristic requires a multitude of strategies and mechanisms. It was apparent throughout the participants' discourse that each strategy and mechanism was not considered a sole determinant of only one key characteristic but rather has an impact on several aspects of mental toughness. Taken together, these findings suggest that a coach's contribution to the development of mental toughness is a complex process that involves being exposed to a combination of important coach strategies and mechanisms.

Our results also have implications for guiding educators (i.e. coaches, sport psychologists) in their attempts to foster sporting environments that can facilitate the development of psychological characteristics associated with mental toughness. First, coaches can play a pivotal role in the development of mental toughness through sport; therefore, an increased awareness and acknowledgement of this role of coaches is underscored. Second, educating athletes about the mechanisms and strategies by which coaches facilitate and hinder the development of mental toughness characteristics and how these processes work would be essential. Information on both the facilitative and debilitating mechanisms and

strategies generated here will enhance such an endeavour. Third, given that coaches are the primary source of influence outside of the family environment, and control much of what is included in any sport programme, coach training programmes represent an exciting avenue of practice for developing mental toughness from an early age (cf. Conroy & Coatsworth, 2006). In addition to educating coaches about the ways in which they can facilitate and prevent detrimental mental toughness developmental processes using the information generated here, coach education programmes should also provide coaches with experiences that contribute to the development of coaching expertise by affording coaches mediated (e.g. coaching classes), unmediated (e.g. watching other coaches, mentoring), and internal (e.g. reflecting on their own coaching) learning contexts (Werthner & Trudel, 2006).

#### *Future research*

Findings from this investigation enhance our understanding of the ways in which coaches positively and negatively impact the development of mental toughness in Australian football. Nonetheless, two methodological limitations warrant further attention. Unlike previous research in the area, which has generated only positive impacts on the development process from athletes (Connaughton et al., 2008; see also Bull et al., 2005), we have provided the first data set solely from a coach perspective. While each participant had been exposed to "mental toughness development" as a player, coach, and parent (with children now playing junior football), the extent to which the data generated from just one viewpoint accurately captures the development process is questionable. Future research that samples parents, athletes, and sports science practitioners and which seeks to compare and integrate the views of these key stakeholders would permit a more rounded perspective of the phenomenon (i.e. triangulation of data capture) (cf. Gould et al., 2002). Sampling male and female participants from a range of other sports would also determine the degree to which the sport-specific data generated here is representative or not of other sporting populations. Research is also required to explore the ways in which the important sources of influences impact on the development of mental toughness during one's childhood upbringing.

A second limitation of this study, and mental toughness research in general, is the reliance on retrospective accounts of participants. Retrospective accounts are inherently limited by objective (e.g. win vs. loss) and subjective (e.g. enjoyment) performance outcomes that can influence an individual's recall of past experiences (Ross & Conway, 1986).

Consequently, it is important that future research includes alternative methods of data collection, such as prospective longitudinal studies including both qualitative and quantitative information gathered with inventories such as the AfMTI (Gucciardi et al., 2009b), and combines these data with those obtained through observational methods among cohorts of varying sporting backgrounds (e.g. experience, achievements, and elite vs. non-elite). Examinations with individuals currently involved in the development process, in particular, have important methodological implications as they are less susceptible to limitations of retrospective recall that are inherent with those athletes who have already reached a mature level of performance (Côté, 1999).

In conclusion, Australian football coaches' perspectives on how coaches can both facilitate and hinder the development of key mental toughness characteristics in the context of Australian football were explored in the present study. They linked specific strategies and mechanisms that cultivate and facilitate as well as hinder the development of the 11 keys to mental toughness in Australian football (Gucciardi et al., 2008). Specifically, the importance of coach–athlete relationships, the coaching philosophy, training environments, and specific strategies was highlighted. The theoretical and practical implications of this research should provide a foundation for the design of coach education programmes and hopefully stimulate further research on the mental toughness development process.

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### References

- Abbott, A., & Collins, D. (2004). Eliminating the dichotomy between theory and practice in talent identification and development: Considering the role of psychology. *Journal of Sports Sciences*, *22*, 395–408.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bull, S. J., Shambrook, C. J., James, W., & Brooks, J. E. (2005). Towards an understanding of mental toughness in elite English cricketers. *Journal of Applied Sport Psychology*, *17*, 209–227.
- Connaughton, D., & Hanton, S. (2009). Mental toughness in sport: Conceptual and practical issues. In S. D. Mellalieu & S. Hanton (Eds.), *Advances in applied sport psychology: A review* (pp. 317–346). London: Routledge.
- Connaughton, D., Wadey, R., Hanton, S., & Jones, G. (2008). The development and maintenance of mental toughness: Perceptions of elite performers. *Journal of Sports Sciences*, *26*, 83–95.
- Conroy, D. E., & Coatsworth, J. D. (2006). Coach training as a strategy for promoting youth social development. *The Sport Psychologist*, *20*, 128–144.
- Côté, J. (1999). The influence of the family in the development of talent in sport. *The Sport Psychologist*, *13*, 395–417.
- Fourie, S., & Potgieter, J. R. (2001). The nature of mental toughness in sport. *South African Journal for Research in Sport, Physical Education and Recreation*, *23*, 63–72.
- Gagné, F. (2004). Transforming gifts into talents: The DMGT as a developmental theory. *High Ability Studies*, *15*, 119–147.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago, IL: Aldine.
- Gould, D., Collins, K., Lauer, L., & Chung, Y. (2007). Coaching life skills through football: A study of award winning high school coaches. *Journal of Applied Sport Psychology*, *19*, 16–37.
- Gould, D., Dieffenbach, K., & Moffett, A. (2002). Psychological characteristics and the development of Olympic champions. *Journal of Applied Sport Psychology*, *14*, 172–204.
- Gucciardi, D. F., & Gordon, S. (in press). Development and preliminary validation of the Cricket Mental Toughness Inventory. *Journal of Sports Sciences*.
- Gucciardi, D. F., & Gordon, S. (2009). Construing the athlete and exerciser: Research and applied perspectives from personal construct psychology. *Journal of Applied Sport Psychology*, *21* (suppl. 1), S17–S33.
- Gucciardi, D. F., Gordon, S., & Dimmock, J. A. (2008). Towards an understanding of mental toughness in Australian football. *Journal of Applied Sport Psychology*, *20*, 261–281.
- Gucciardi, D. F., Gordon, S., & Dimmock, J. A. (2009a). Advancing mental toughness research and theory using personal construct psychology. *International Review of Sport and Exercise Psychology*, *2*, 54–72.
- Gucciardi, D. F., Gordon, S., & Dimmock, J. A. (2009b). Development and preliminary validation of a mental toughness inventory for Australian football. *Psychology of Sport and Exercise*, *10*, 201–209.
- Gucciardi, D. F., Gordon, S., & Dimmock, J. A. (2009c). Evaluation of a mental toughness training program for youth-aged Australian footballers: I. A quantitative analysis. *Journal of Applied Sport Psychology*, *21*, 307–323.
- Gucciardi, D. F., Gordon, S., & Dimmock, J. A. (2009d). Evaluation of a mental toughness training program for youth-aged Australian footballers: II. A qualitative analysis. *Journal of Applied Sport Psychology*, *21*, 324–339.
- Jones, G., Hanton, S., & Connaughton, D. (2002). What is this thing called mental toughness? An investigation of elite sport performers. *Journal of Applied Sport Psychology*, *14*, 205–218.
- Jones, G., Hanton, S., & Connaughton, D. (2007). A framework of mental toughness in the world's best performers. *The Sport Psychologist*, *21*, 243–264.
- Jowett, S., & Poczwardowski, A. (2007). Understanding the coach–athlete relationship. In S. Jowett & D. Lavallee (Eds.), *Social psychology in sport* (pp. 3–14). Champaign, IL: Human Kinetics.
- Kelly, G. A. (1991). *The psychology of personal constructs: A theory of personality*. (Vol. 1). London: Routledge (original work published 1955).
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Thousand Oaks, CA: Sage.
- Martindale, R. J. J., Collins, D., & Daubney, J. (2005). Talent development: A guide for practice and research within sport. *Quest*, *57*, 353–375.
- Patton, M. (2002). *Qualitative research and evaluation methods*. Newbury Park, CA: Sage.
- Petitpas, A. J., Cornelius, A. E., Van Raalte, J. L., & Jones, T. (2005). A framework for planning youth sport programs that foster psychosocial development. *The Sport Psychologist*, *19*, 63–80.

- Ross, M., & Conway, M. (1986). Remembering one's own past: The construction of personal histories. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behaviour* (pp. 122–144). New York: Guilford Press.
- Stephan, Y., Bilard, J., Ninot, G., & Delignieres, D. (2003). Repercussions of transition out of elite sport on subjective well-being: A one-year study. *Journal of Applied Sport Psychology, 15*, 354–371.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd edn.). Newbury Park, CA: Sage.
- Thelwell, R., Weston, N., & Greenlees, I. (2005). Defining and understanding mental toughness within soccer. *Journal of Applied Sport Psychology, 17*, 326–332.
- Tranckle, P., & Cushion, C. J. (2006). Rethinking giftedness and talent in sport. *Quest, 58*, 265–282.
- Werthner, P., & Trudel, P. (2006). A new theoretical perspective for understanding how coaches learn to coach. *The Sport Psychologist, 20*, 198–212.
- Wiersma, L. D., & Sherman, C. P. (2005). Volunteer youth sport coaches' perspectives of coaching education/certification and parental codes of conduct. *Research Quarterly for Exercise and Sport, 76*, 324–338.
- Wolfenden, L. E., & Holt, N. L. (2005). Talent development in elite junior tennis: Perceptions of players, parents, and coaches. *Journal of Applied Sport Psychology, 17*, 108–126.
- Wyllemann, P., & Lavallee, D. (2004). A developmental perspective on transitions faced by athletes. In M. Weiss (Ed.), *Developmental sport and exercise psychology: A lifespan perspective* (pp. 507–527). Morgantown, WV: Fitness Information Technology.