12 Training a Coach to be Autonomy-Supportive: An Avenue for Nurturing Mental Toughness

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FPO

LEARNING OBJECTIVES

AFTER READING THIS CHAPTER YOU SHOULD BE ABLE TO HAVE:

1. An understanding of mental toughness and factors that lead to its development.
2. An understanding of self-determination theory.
3. The ability to recognize coaching behaviours that support or thwart psychological needs.
4. Awareness about how to implement coaching behaviours that support individuals' psychological needs with the intention of enhancing mental toughness.

AREAS TO CONSIDER WHEN READING THE CHAPTER:

1. What is mental toughness?
2. How would you assess an athlete's mental toughness?
3. You've been asked by a sport organization to create an intervention or programme aimed at developing mental toughness in athletes. How would you approach this request for developing mental toughness (e.g., content, structure)?
4. What role do coaches play in the development of mental toughness?
5. Which coaching behaviours foster or forestall mental toughness development?

INTRODUCTION

Attaining and sustaining high performance is a defining characteristic of athletic pursuits. Although the formula for reaching such standards is open to considerable debate, most athletes and coaches would agree that physical, technical, tactical, and psychological skills are key ingredients to the recipe. Recently, researchers have sought to conceptualize key psychological characteristics under a single banner, namely *mental toughness*. For over a decade, researchers (e.g., Jones, Hanton, & Connaughton, 2002) have invested considerable effort towards defining and conceptualizing mental toughness and, even more recently (e.g., Connaughton, Wadey, Hanton, & Jones, 2008), determining the factors that contribute to its development. Despite this growing knowledge base, little effort has been made to translate this research into practice. Indeed, to our knowledge, there are only two published experimental trials (Bell, Hardy, & Beattie, 2013; Gucciardi, Gordon, & Dimmock, 2009) in which scholars have evaluated interventions aimed at developing mental toughness. These two studies are noteworthy examples of athlete-centred programmes delivered by a practitioner directly to athletes (Gucciardi et al., 2009) or indirectly by altering the training environment by a multidisciplinary team including coaches, ex-players, psychologists, medical staff and administrators (Bell et al., 2013). Aligned with these recent efforts, we contest that mental toughness can also be developed through the provision of particular coach-mediated learning environments. These claims are founded on previous research which has supported the important role of coaches in mental toughness development (Connaughton et al., 2008; Gucciardi, Gordon, Dimmock, & Mallett, 2009), as well as theory and research from broader fields of psychological enquiry that are consistent with this point of view (e.g., Mageau & Vallerand, 2003; Mahoney, Gucciardi, Ntoumanis, & Mallett, 2014). Thus, the purpose of this chapter is to introduce readers to a coach-centred intervention for enhancing mental toughness and to highlight the theoretical underpinnings and implementation of our proposed intervention through a case study example.

CLIENT AND BACKGROUND

Roger (pseudonym), the 51-year-old head coach of a women's crew at an English-based rowing club, approached the lead author with regard to sport psychology support. Roger coached ten female rowers of varying ages (M = 23.90 years, range = 17–38 years) and experiences (M = 4 years' rowing experience, range = 2–9 years); several of whom had achieved representative honours during their career. Specifically, four rowers had competed at a regional level and two had competed at a national level. However, except for one national representative, the rowers were competing solely at a club level when Roger sought psychological support.

Roger had sought psychological support for the crew for two main reasons. The first of these reasons related to recent changes within the crew. A number of rowers had been recruited to the squad after graduating from the club's junior programme and, as such, Roger perceived this occasion as an opportunity to introduce new training initiatives. The second reason Roger sought support stemmed from his desire to involve expert practitioners and leverage off their expertise to enhance the crew's performances. Roger had already employed a sport nutritionist and exercise physiologist, and believed a psychologist was also central to his objectives. Although interested in employing a psychologist, Roger had not contemplated a specific topic for intervention. As such, Roger and the psychologist (henceforth, the practitioner) discussed and explored possible avenues for intervention.

Roger identified that the crew had under-achieved at a number of recent regattas and, based on their track-record as individuals (e.g., regional and national representation), they were capable of better performances. He explained that occasionally the crew would perform to their abilities, but that they were often unable to repeat such performances; thus, performance consistency was a key consideration. Roger illustrated this point by recounting the crew's previous eight competition times and placings. The crew had achieved two second-place finishes in their previous eight races, but had also finished second last on three occasions (all races were against the same group of six opposition crews). Their race times were equally inconsistent; however, variances in course and weather conditions mean that race times are often poor indicators of performance in rowing, so Roger preferred to compare placings because crews typically competed against the same opposition. Based on this discussion and the evidence provided by Roger, the concept of mental toughness was introduced and suggested as a possible intervention topic.

A BRIEF DEFINITION AND CONCEPTUALIZATION OF MENTAL TOUGHNESS

Mental toughness has been defined as a personal capacity to produce consistently high levels of subjective (e.g., personal goal achievement) or objective (e.g., race times) performance despite everyday challenges and stressors as well as significant adversities (Gucciardi, Hanton, Gordon, Mallett, & Temby, 2015). A recent synthesis of the literature identified that researchers commonly conceptualize mental toughness as comprising eight personal characteristics: optimistic thinking, resilience, self-belief, handle challenge, winning mentality, context intelligence, attentional control, and emotional awareness, and regulation (Gucciardi, Mallett, Hanrahan, & Gordon, 2011). This definition resonated with Roger's description of the crew's experiences and the conceptualization served as a means to operationalize and measure the rowers' levels of mental toughness. Indeed, performance (in)consistency was central to Roger's overall assessment of his squad. Roger expressed great interest in mental toughness as a focus for intervention following the presentation of this definition and conceptualization.

Researchers have suggested that a number of factors contribute to mental toughness development. For example, in a study by Connaughton et al. (2008), mental toughness development was suggested to be contingent on factors such as competitive experiences, mental preparation, physical preparation, social support, vicarious experiences, mastery experiences, enjoyment, critical incidents (e.g., overcoming adversities), psychological skills (e.g., imagery), pre-performance routines, simulation training, and parental focus. Other researchers (Thelwell, Such, Weston, Such, & Greenlees, 2010; Weinberg, Butt, & Culp, 2011) have recorded similar lists, however, with such a diverse and exhaustive range of factors, it is difficult to conceive a parsimonious intervention for the development of mental toughness. A possible alternative to an intervention that encompasses all or many of these factors is one that focuses on a unifying concept that is prevalent in the literature, but also encapsulates a number of other factors. We believe one such factor is the coach-mediated learning environment.

Coach-mediated learning environments have been discussed in all previous studies that have identified the factors that contribute to mental toughness development. Further, coach-mediated learning environments can also encompass and/or influence a number of other factors identified in mental toughness research including the provision of competitive, vicarious, mastery, critical, and simulated experiences, as

well as athlete enjoyment, pre-performance preparation, and social support. With this knowledge in mind, the practitioner suggested that Roger undertake a coach-centred intervention that sought to enhance his knowledge of, and abilities to, implement the learning environments that promoted mental toughness.

INITIAL NEEDS ASSESSMENT

To form a clear understanding of the coaching environment and to identify the appropriateness of a coach-centred intervention for mental toughness development, Roger and the rowers were first asked to complete a battery of questionnaires (see Table 12.1). The primary goal with this initial assessment was to gather an understanding of the different types of pressures that may influence Roger's coaching practice. Broadly speaking, these pressures can occur from above (i.e., culture of the rowing context), within (i.e., Roger's own personal attributes or dispositions), and below (i.e., perceptions of the rowers, such as their attitudes, beliefs and motivations; Reeve, 2009). As the practitioner could have little influence over organizational issues that may be created from pressure from above (e.g., expectations of club administrators), the initial needs assessment process targeted pressures from within and below.

In order to determine the appropriateness of a coach-centred intervention, as well as help evaluate the effectiveness of such an intervention, Roger was asked to complete a series of questions pertaining to his typical motivational orientations. The General Causality Orientations Scale captures the relatively enduring features of people's understanding of what causes the initiation and sustainment of behaviour, and reflect three categories of individual differences in the degree to which the sources of behaviour are interpreted as self-determined or not (Deci & Ryan, 1985a). Controlled orientations refers to the tendency to experience behaviour as originating from internal or external pressures (e.g., threats, rewards, expectations), and is therefore a low degree of internalization. The propensity towards a high degree of internalization is referred to as autonomy orientations, whereby behaviour is driven by a sense of volition and choice, and an awareness of personal values or interests. Impersonal orientations refers to the tendency to interpret the causes of behaviour as largely unknown to the individual or being beyond one's intentional control. Controlled (rather than autonomous) orientations may create pressure from within, and therefore lead to the adoption of controlling coaching behaviours (Reeve, 1998) such as intimidation, negative conditional regard, and excessive personal control (Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2009).

Roger's responses suggested that he was predominately oriented towards intrinsically motivating environments (60 out of 84, where higher scores reflect stronger autonomy orientations), indicating that he preferred to engage in novel and personally interesting activities. In comparison, Roger scored low on controlling orientations (40 out of 84, where higher scores reflect stronger orientations towards controlling motivational environments) and lowest on impersonal orientations (24 out of 84, where higher scores reflect stronger orientations towards impersonal motivational environments), suggesting that he was generally less inclined to place importance on extrinsic factors (e.g., winning, fame) or believe that his and others' actions were ineffectual. These self-perceptions were promising findings with regards to implementing a coach-centred intervention as they suggested that Roger would willingly engage in a programme directed at his personal development. The rowers also completed a battery of questionnaires to provide an insight into possible pressures from below. Broadly speaking, this aspect of the needs assessment focused on the perceived quality of Roger's interpersonal style on a continuum ranging from supportive to controlling, as well as a personal quality of the

Table 12.1 *Descriptions, examples, and results of the coach and athlete questionnaires.*

Measure	*Aim*	*# of items*	*Example item*	*Scale*	*M (SD)*
General Causality Orientation Scale (Deci & Ryan, 1985a)	Measure of three motivational orientations (autonomous, controlling, impersonal) in coaches	36	*You are embarking on a new career. The most important consideration is likely to be: how interested you are in that kind of work.*	1 (*Very unlikely*) – 7 (*Very likely*)	N/A
Sport Climate Questionnaire – Short Form (adapted from Williams & Deci, 1996)	Measure of perceptions of autonomy support in sport environments	6	*I feel understood by my coach*	1 (*Strongly disagree*) – 7 (*Strongly agree*)	4.51 (1.31)
Controlling Coach Behaviour Scale (Bartholomew et al., 2010)	Measure of athletes' perceptions of sport coaches' controlling interpersonal styles	15	*My coach only rewards/praises me to make me train harder*	1 (*Strongly disagree*) – 7 (*Strongly agree*)	2.82 (0.70)
Basic Needs Satisfaction in Sport Scale (Ng, Lonsdale, & Hodge, 2011)	Measure of athletes' perceptions of autonomy, competence, and relatedness in sport	14	*I am skilled at my sport*	1 (*Not at all true*) – 7 (*Very true*)	5.00 (0.90)
Psychological Needs Thwarting Scale (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011)	Measure of athletes' perceptions of needs thwarting	12	*I feel pushed to behave in certain ways*	1 (*Strongly disagree*) – 7 (*Strongly agree*)	3.01 (1.42)
Mental Toughness Index (Gucciardi et al., 2015)	Measure of the eight personal characteristics of mental toughness proposed by Gucciardi et al. (2011)	8	*I bounce back from adversity*	1 (*False 100% of the time*) – 7 (*True 100% of the time*)	4.66 (1.09)

rowers that may potentially influence Roger's coaching behaviours. To achieve this aim, rowers completed questionnaires that pertained to their perceptions of Roger's coaching behaviours, satisfaction of their psychological needs (this notion is discussed in greater detail later, Deci & Ryan, 1985b; Deci & Ryan, 2000), and perceived levels of their mental toughness. When social contexts undermine or thwart peoples' psychological needs to feel autonomous, competent, and related to others, such conditions can result in feelings of alienation, burnout, and disengagement (Deci & Ryan, 2000), which in turn can create pressure for leaders to adopt a controlling style to manage these individuals (Sarrazin, Tessier, Pelletier, Trouilloud, & Chanal, 2006). Aside from the being the primary outcome variable for this intervention, it was also considered important to gauge the rowers' mental toughness as some coaches believe a controlling style (e.g., yelling, criticism) is required to develop this personal quality in their athletes (Kerr & Stirling, 2012).

The results of this initial assessment identified that Roger was perceived as demonstrating a mixture of coaching behaviours that supported or thwarted individuals' psychological needs. Further, rowers' results suggested that their psychological needs were moderately satisfied, as well as thwarted, and that they perceived themselves as possessing moderate levels of mental toughness (for a summary of results, see Table 12.1). Collectively, the rowers' perceptions of their coach, the satisfaction of their psychological needs, and their mental toughness levels appeared worthy of attention.

FRAMEWORK AND INTERVENTION

To the best of our knowledge only two studies to date have evaluated mental toughness programmes. Gucciardi, Gordon, and Dimmock (2009) developed an athlete-centred mental toughness programme and evaluated its effectiveness against a traditional psychological skills training programme. These researchers' found that both the mental toughness and the traditional psychological skills programme were equally effective in enhancing athletes' perceptions of mental toughness. Although their work represented a useful starting point for intervention-based research, the content of both programmes overlapped considerably, meaning that it is difficult to identify the benefits of the mental toughness programme over other approaches or narrow in on the effectual components of the intervention. Bell et al. (2013) also evaluated a mental toughness programme and unlike Gucciardi and colleagues. They designed a programme informed by personality theory and stress inoculation research. Athletes were exposed to pressurized performance environments with the intention of enhancing their abilities to overcome obstacles and re-engage with performance-related tasks. This performance environment was moulded by a multidisciplinary team of coaches, ex-players, psychologists, medical staff, and administrators. Compared to a control group, athletes in the mental toughness programme demonstrated a significant improvement in performance. Although a novel approach, Bell et al.'s mental toughness programme was largely founded on the use of extrinsic punishments and controlling sanctions. Environments that are extrinsically regulated and undermine individuals' perceptions of internal control have been associated with a number of negative outcomes such as burnout, dropout, disengagement, and resignation of effortful action (for a review, see Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2009). As such, Bell et al.'s proposed programme might produce positive performance-related results in the short-term, but have far-reaching negative emotional, behavioural, and performance consequences in the long-term.

In light of Bell et al.'s (2013) findings, there is impetus to investigate whether or not an intervention designed to develop mental toughness can improve performance and performance consistency, whilst also preserving (or enhancing) individuals' psychological functioning (e.g., psychological wellbeing,

vitality). We believe that, contrary to Bell et al.'s intervention, training environments can be designed as supportive and nurturing contexts for the development of mental toughness. In support of this contention, researchers (Gucciardi, Gordon, Dimmock et al., 2009) have shown that coaches believe that they are likely to facilitate mental toughness through supportive and nurturing training environments. In particular, coaches believe that establishing trusting and respectful relationships with athletes, constructing challenging and novel training environments, subscribing to athlete-centred philosophies, and encouraging athletes to be involved in learning and development contribute to mental toughness development. Contrary to Bell et al.'s protocols, Gucciardi and colleagues also found that coaches believed they could inhibit mental toughness development by prioritizing success over athlete development, setting low or unrealistically high expectations, and prescribing to a weakness-focused, as opposed to strengths-focused approach (i.e., conditions that externally regulate behaviour). Interestingly, coaches' perceptions of mental toughness development appear to resonate closely with theory and research from other areas of established psychological enquiry. In particular, the coaching behaviours, process, and strategies identified by Gucciardi and colleagues complement self-determination theory (Deci & Ryan, 1985b, 2000) literature. Below we detail self-determination theory and highlight how we employed knowledge from this field to inform our coach-centred mental toughness intervention.

Self-determination theory in a nutshell

According to self-determination theory (SDT), human functioning and psychological health is predicated by the satisfaction of individuals' psychological needs for *autonomy* (i.e., the perception that one's actions and decisions are volitional), *competence* (i.e., the perception that one's actions are efficacious), and *relatedness* (i.e., the perception that ones' actions and roles are valued by wider social networks). When individuals' *psychological needs* are satisfied, they are more likely to perceive an internal locus of control. That is, they believe that they are able to personally influence the events in their lives. When individuals hold such perceptions they engage in behaviours that are energizing, interesting, engaging, and reaffirming (Deci & Ryan, 2000). In support of these contentions, researchers have reported that psychological needs satisfaction is associated with greater levels of task engagement, more effortful actions, task persistence, deeper levels of cognitive processing, and greater levels of concentration (Amoit, Gaudreau, & Blanchard, 2004; Boggiano, Flink, Shields, Seelbach, & Barrett, 1993; Boiché, Sarrazin, Grouzet, Pelletier, & Chanal, 2008; Ryan & Deci, 2000). In comparison, when individuals' psychological needs are thwarted they are more likely to perceive that others or circumstances out of their control influence the events in their lives. A lack of perceived personal control commonly results in feelings of disinterest, anxiety, and hopelessness (Bartholomew et al., 2009). In addition, researchers have reported that psychological needs thwarting is associated with burnout, dropout, emotional upheaval, and, in extreme cases, psychopathology (Adie, Duda, & Ntoumanis, 2012; Deci & Ryan, 2000; Quested & Duda, 2011). Importantly, the conditions that support or thwart psychological needs are consistent with Gucciardi, Gordon, and Dimmock's (2009) interviews with coaches and, as such, form the foundations of the programme employed with Roger.

The conditions that enhance and inhibit psychological needs satisfaction are outlined within a micro-theory of SDT, namely, *basic psychological needs theory* (BPNT, Deci & Ryan, 2002). According to BPNT, psychological needs satisfaction is determined by the provision of environments that support perceptions of autonomy, competence, and relatedness. In a meta-analysis by Su and Reeve (2011), five conditions were found to enhance individuals' perceptions of psychological needs satisfaction: offering choices, providing meaningful rationales, acknowledging negative feelings, using non-controlling language, and nurturing inner motivational resources. These five behaviours are consistent with

previous research (Gucciardi, Gordon, Dimmock, et al., 2009) on coaching behaviours that promote mental toughness and, as such, provide a conceptual bridge that helps inform our coach-centred intervention.

Further, Bartholomew and colleagues (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011; Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2010) have explored the conditions that result in psychological needs thwarting. They reported that controlling use of rewards (e.g., promising and awarding prizes for desired actions), negative conditional regard (e.g., withholding of attention when athletes do not display desired behaviours), intimidation (e.g., threatening athletes with physical punishment if they do not meet expectations), and excessive personal control (e.g., interfering with athletes' lives outside sport) were likely to undermine individuals' psychological needs. These behaviours are also consistent with Gucciardi, Gordon, Dimmock et al.'s (2009) findings regarding coaching behaviours that undermine mental toughness development. Comparable findings in SDT and mental toughness research informed the design of the present intervention and the objective of enhancing Roger's awareness of environment conditions that facilitate both psychological needs satisfaction and mental toughness development.

A coach-centred intervention for developing mental toughness

Roger and the practitioner met on four occasions over a two-month period (approximately one-hour meetings). During these meetings, Roger and the practitioner discussed theory and research from SDT, the conditions that satisfy and thwart psychological needs satisfaction, and the application of autonomy-supportive coaching behaviours to Roger's coaching. The practitioner's consultations with Roger were underpinned by principles consistent with a humanistic model. Consistent with a humanistic approach, the practitioner was guided by the belief that individuals (in this instance, both Roger and the athlete group) continue to develop across all stages of life, and that personal worth and dignity are central to this development (for detail about humanistic philosophies see, Jacobsen, 2007). Below is a detailed description of each session.

Session 1. Following the initial needs assessment, this session commenced by feeding back the findings of the coach and athlete questionnaires to Roger including a description of each variable. Roger agreed with the results (i.e., highest on autonomous, low on controlling, and lowest on impersonal motivational orientations) and expressed his contentment with what they likely meant for the intervention. Roger was then presented with the findings of the athlete questionnaires. In summarizing the athletes' responses, Roger was informed that he exhibited facilitative coaching behaviours, but that there were areas where he could improve his coaching to promote the development of mental toughness in the rowers.

At this stage, the practitioner presented Roger with a lay introduction to SDT and how the provision of particular coaching behaviours could promote athletes' perceptions of psychological needs satisfaction. In an attempt to introduce these topics, Roger was asked to consider two athletes – one 'mentally tough' and one 'mentally weak' – and to contemplate how a coach might have contributed to each athletes' development. The intention of this activity was to encourage thoughts about coaching behaviours – particularly those consistent with self-determination theory research – that either promote or inhibit mental toughness development. To reinforce these ideas, a list of the behaviours identified by researchers (Bartholomew et al., 2009; Gucciardi, Gordon, Dimmock et al., 2009; Su & Reeve, 2011) were presented and discussed (see Table 12.2). These behaviours formed the basis of discussions for the current and subsequent sessions.

Table 12.2 *Types, descriptions, and examples of coaching behaviours/philosophies that support athletes' psychological needs.*

Behaviour/Philosophy	*Description*	*Example*
Providing meaningful rationales [A]	Explaining the purpose for a task in a way that connects with individuals' personal values/goals	'We're going to work on this skill today because it is related to your performance goals.'
Acknowledging negative feelings [R]	Expressions that demonstrate an understanding of, and legitimize, individuals' perspectives	'I understand what you're saying. You don't want to do this drill because it's difficult. I agree, it is difficult.'
Use of non-controlling language [A,C]	Avoiding language that induces pressure (e.g., should, must, have to) and using language that conveys choice and flexibility.	'What have you learnt that you could use in this situation?'
Offering choice [A]	Providing options and encouraging choice-making	'Which of the following tasks would you like to complete today?'
Nurture inner motivation resources [A,C,R]	Attending to individuals' psychological needs during task engagement	Creating choice-filled, challenging, and purposeful activities
Weekly challenging tasks [C]	Set challenging, performance-related tasks for athletes to complete over a short period of time (i.e., 1 week). Tasks should target the upper limit of athletes' abilities and not over or under challenge them	A team or squad could be challenged to complete a set amount of time or distance completing a difficult task (e.g., fitness, advanced skills)
Simulated performance experiences [C]	Create training environments that simulate pressure-filled performance experiences and clearly identify performance-related goals	One group of athletes, outnumbered by another group of athletes, has to maintain a lead whilst their opposition has to come from behind to win
Relate positively with athletes [R]	Establish and maintain positive relationships by opening lines of communication and offering both informational and emotional support	Approach athletes individually to gauge their perceptions about their sport participation. Ask about their enjoyment and pleasure in sport, but also the obstacles and challenges they are facing
Prioritize athlete development over coaching success [A,R]	Construct holistic athlete development plans that attend to athletes' sporting and personal goals, while avoiding placing too strong an emphasis on performance outcomes	Demonstrate an interest in athletes' lives outside sport and make concessions where necessary to allow athletes to pursue goals across a number of contexts

Note. A = behaviour/philosophy addressing autonomy; C = behaviour/philosophy addressing competence; R = behaviour/philosophy addressing relatedness.

In the interest of time and to simplify content, only coaching behaviours that have been shown to support perceptions of autonomy were presented during this first session. Coaching behaviours that support perceptions of competence, relatedness, and need thwarting behaviours, formed the topics of discussion during the subsequent three sessions respectively. Roger was first presented with a description and examples of autonomy. Autonomy was described as the view that one is self-directing, makes his/her own decisions, and chooses his/her own actions (Deci & Ryan, 2000). Two examples of autonomy presented to Roger included a rower who plans her race tactics (e.g., when she will increase her stroke rating) and a rower who chooses her warm-up routine. Following this introduction, Roger was asked to consider why being autonomous would promote mentally tough actions such as effort and persistence. The objective of this discussion was to help Roger understand how self-direction increases individuals' perceptions of internal control, which, in turn, promotes engagement in energizing, interesting, engaging, and reaffirming actions and tasks (Mahoney et al., 2014). It is this explanation that forms the fundamental link between SDT and mental toughness. With this knowledge, Roger was then asked to design a training programme to be completed before the next session that integrated notions of autonomy. To facilitate this training programme, Roger was asked to illustrate how he would introduce, coach, and debrief the training session using the training course layout (see Figure 12.1). Finally, Roger was asked to offer a summary of the session to demonstrate his learning, as well as highlight his intentions to implement his knowledge.

Session 2. The second session began by debriefing the training programme Roger had planned and administered following Session 1. He had intended to allow the crew to select between three skill-based options at the start and mid-point of training. In discussing this strategy, Roger noted that some rowers disagreed with the training choices of their peers. He further noted his concern that the strategy he used might undermine some rowers' perceptions of autonomy. In response, Roger was encouraged to allow different rowers or groups of rowers to select training programmes on different occasions. For example, if future disagreements arise among the rowers, Roger could allow one group to decide on one training activity and then allow another group to decide the subsequent activity. In addition, Roger was encouraged to communicate the value of tasks to individuals who disagreed with the selected training programme and to encourage rowers who chose training tasks to provide rationales for their selections over other options. For example, when rowers were not able to decide on the training task, Roger could have stressed, 'the drill is important to helping you balance the boat, which helps with momentum and increases your speed. If you can improve balance, you're more likely to reach your goal of moving the boat faster'. If the provision of choices is unachievable, coaches can still encourage athletes to engage with effort on tasks by providing a rationale for their involvement that is consistent with their personal values (Hagger & Chatzisarantis, 2007).

Following this introduction, the practitioner directed the discussion to the primary topic of the session, namely, coaching behaviours that enhance perceptions of competence. As an introduction to this topic, Roger was presented with the following description of competence: the view that one can bring about desired outcomes with his/her actions (Deci & Ryan, 2000). Examples of competence were also presented including a rower who achieved a self-set performance goal (e.g., reducing her 2 km ergometer time by 3 seconds over a 10-week period) and a rower who mastered a new skill or process goal (e.g., learning to engage her legs before her arms through the *drive* phase of the stroke). As with discussions from the first session, Roger was asked to contemplate why perceiving oneself as competent would promote mental toughness. The intention of this discussion was for Roger to acknowledge that competence, like autonomy, fosters perceptions of internal control, which, in turn, promotes effortful action, as well as task engagement and persistence (Mahoney et al., 2014). Gucciardi, Gordon, Dimmock et al.'s (2009) strategies for creating challenging training environments were presented in order to illustrate how Roger might enhance perceptions of competence among the crew. Specifically, the practitioner presented ideas about challenging athletes' limits (e.g.,

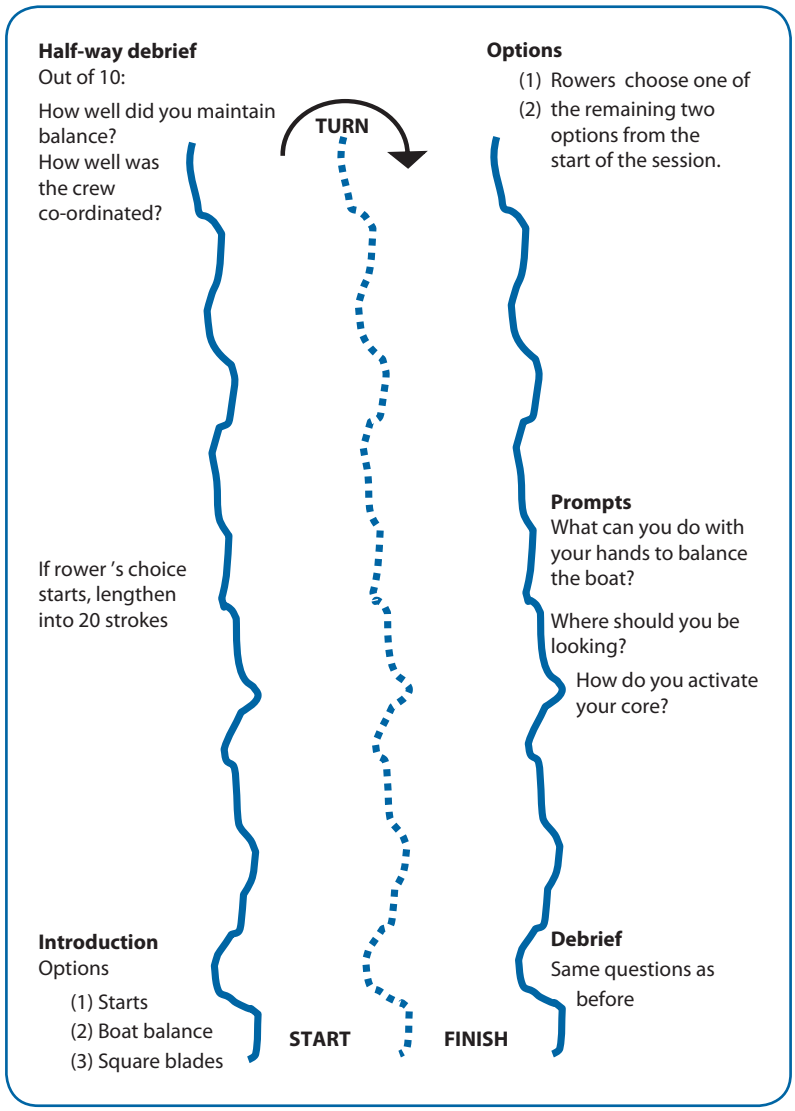

FIGURE 12.1 *Roger's proposed plan for implementing coaching behaviours that support athletes' need for autonomy.*

encouraging them to row a moment longer than initially planned when exhausted), setting weekly tasks and challenges (e.g., completing a set time or distance in training), and architecting pressure-filled training environments (see Table 12.2). The latter was discussed in light of Bell et al.'s (2013) intervention and Roger was encouraged to minimize pressure-filled tasks that undermined athletes' psychological needs. Roger was again encouraged to incorporate these strategies (along with those learnt in Session 1) into a training plan to be conducted before the subsequent session. An illustration of Roger's proposed training programme is presented in Figure 12.2. To end the discussion, Roger was again asked to provide a summary of the session and detail his intentions to implement his knowledge.

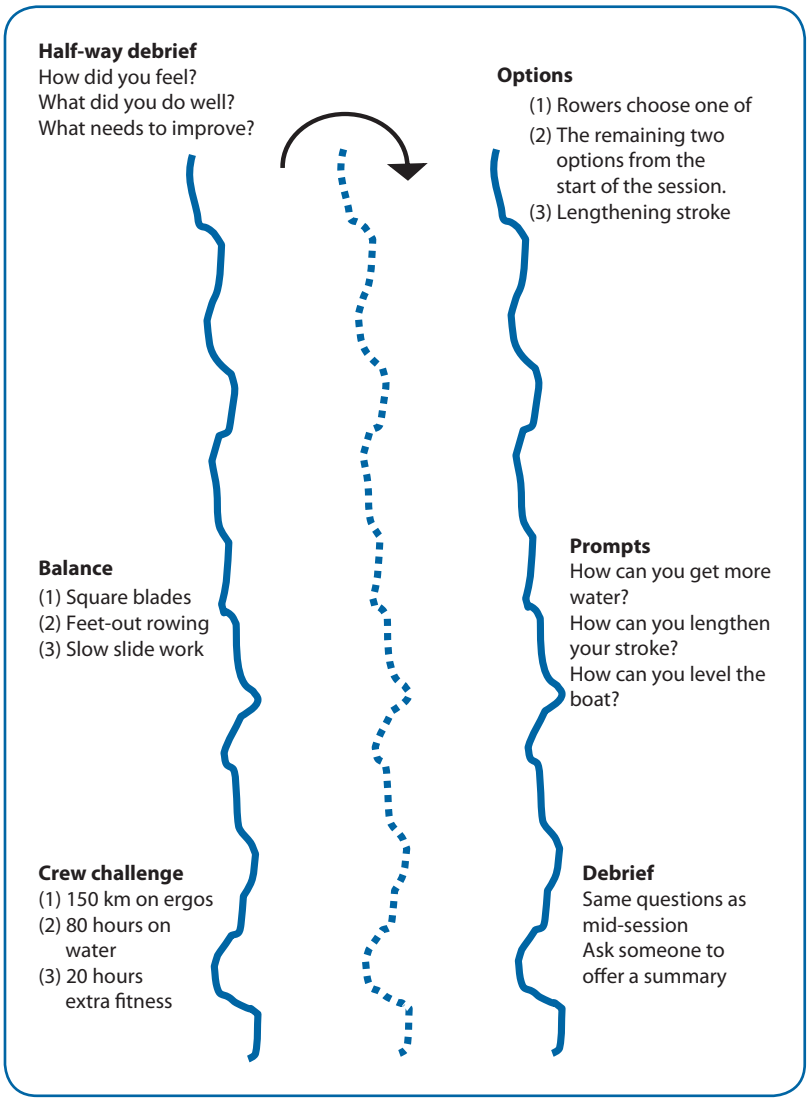

FIGURE 12.2 *Roger's proposed plan for implementing coaching behaviours that support athletes' need for autonomy and competence*

Session 3. The third session began with a discussion about the implementation of Roger's proposed training programme. Compared to the previous training programme, Roger perceived a relative amount of ease implementing his intended strategies. He expressed that the rowers appeared more engaged with the decision-making opportunities afforded to them and more willing to discuss their perceptions of their performances following training tasks. Roger also identified that he allowed different individuals and groups from the previous week to make decisions, as well as provided rationales for training drills, especially for athletes who disagreed with the drill selected.

Following this introduction, the practitioner directed discussions to coaching behaviours that enhance perceptions of relatedness. Relatedness was described as the view that one is connected to a wider social network and holds personally valued roles within such groups (Deci & Ryan, 2000).

A cohesive crew that demonstrates camaraderie towards each other (e.g., encouraging each other after mistakes, congratulating each other after successes) and a crew captain who fulfils her leadership responsibilities (e.g., empathizes with others during times of uncertainty) were provided as examples consistent with notions of relatedness. Roger was asked to contemplate why enhanced perceptions of relatedness would promote higher levels of mental toughness. The intention of this discussion was to help Roger identify two points: first, that a sense of belonging fosters individuals' perceptions that they are needed, and are responsible and accountable for their actions; and second, that role identification promotes beliefs that individuals contribute meaningfully to the pursuits and achievements of groups to which they belong (Mahoney et al., 2014).

Subsequent to these discussions, Roger was presented with ideas about how to enhance perceptions of relatedness among the rowers (see Table 12.2). Drawing again from Gucciardi, Gordon, Dimmock, et al. (2009), creating an open line of communication with and between rowers (e.g., asking athletes if they have any questions or comments, approaching athletes individually to discuss obstacles to performance), as well as offering and providing informational (e.g., advice about technique) and emotional (e.g., acknowledge negative emotional states and that the coach is there to help) support were proposed as possible ideas for enhancing rowers' perceptions of relatedness. In addition to these recommendations, and consistent with SDT, role identification was detailed as an approach that formally and explicitly singles out meaningful contributions individuals make within a group. This approach involves sport-specific role identification such as the specific contributions different sporting positions make to performance (e.g., the *stroke* seat in rowing) and sport-general role identification such as the delegation of leadership responsibilities (e.g., coxswains in rowing).

The practitioner suggested that Roger might incorporate these ideas by concluding training sessions with a brief team meeting. Team meetings were suggested because they are useful platforms for enhancing perceptions of relatedness as they offer an open forum within which individuals are afforded opportunities to build strong collegiate bonds and identify the meaningful contributions they make to the wider group. Based on the practitioner's suggestions, Roger decided to reserve the final 15 minutes of each training session for crew discussions.

Session 4. The final session began by inviting Roger to discuss his experiences of implementing coaching behaviours intended to enhance athletes' perceptions of relatedness. Prior to this session, Roger had implemented his team meeting strategy on two occasions. On reflection, Roger believed that the discussions had been successful in enhancing the rowers' perceptions of belonging. He noted that the time spent formally acknowledging the insights of the rowers, and explicitly detailing his beliefs about the roles of particular athletes helped to clarify the responsibilities of individuals and the shared direction of the crew.

To conclude the coach-centred intervention, the practitioner presented a number of coaching behaviours that were associated with psychological needs thwarting. Consistent with the literature (Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011), these behaviours are typically referred to as controlling coach behaviours. This topic was presented last so that Roger had time to develop a number of new, more effective coaching behaviours to replace these other behaviours. Consistent with Bartholomew and colleagues (Bartholomew, Ntoumanis, Ryan, & Thøgersen-Ntoumani, 2011; Bartholomew et al., 2009), Roger was informed that coaches can thwart athletes' psychological needs by using rewards to control behaviours (e.g., promising rewards for correct stoke technique), communicating negative conditional regard (e.g., ignoring rowers until they execute correct stroke technique), using intimidation (e.g., yelling at rowers who fail to execute correct stroke technique), and excessively controlling individuals' personal lives (e.g., demanding that rowers practise their stroke technique during their discretionary time). When presented with these ideas, Roger identified that it was common practice for rowing coaches to threaten athletes with physically demanding training sessions if they lacked effort or did not perform to expectations,

and dictate what athletes should eat and drink, as well as how much they should sleep for recovery. Indeed, Roger confessed employing several of these controlling coach behaviours previously in his practices.

Roger's confessions prompted a discussion about why coaches might employ controlling coach behaviours. The practitioner acknowledged that there are a number of personal and contextual factors that led to the use of coaching behaviours that thwart psychological needs (see, Mageau & Vallerand, 2003). Considering Roger scored low on controlling and lowest on impersonal motivational orientations, it is more likely that contextual factors such as expectations of athletes and management, constraints on training times, Roger's own experiences as an athlete, and delinquent athlete behaviour might better explain his use of such behaviour. These topics formed the basis of the discussions between Roger and the practitioner.

Discussions around reasons why coaches typically engage in behaviours that thwart individuals' psychological needs provided Roger with the opportunity to reflect on his coaching practices and the reasons why he engaged in certain behaviours. The practitioner made a point of emphasizing that coaches who engage in controlling coach behaviours are likely to undermine mental toughness development because individuals' perceptions of control and meaning are forestalled. As a result, athletes are less likely to be effortful and persistent in their goal pursuits, and may withdraw their participations with time (Mahoney et al., 2014). These discussions offered an appropriate summary to the coach-centred intervention and afforded Roger an opportunity to contemplate how he could continue to pursue coaching behaviours that support others' psychological needs, whilst avoiding those behaviours that thwart them. As this session ended the intervention programme, the practitioner encouraged Roger to summarize his knowledge and competencies across the entire coach-centred intervention.

REFLECTIONS

The coach-centred intervention described above is a novel approach to developing mental toughness in athletes and the selection of a coach-centred intervention extends previous research in this area, which has identified the key role of coaches in mental toughness development (Connaughton et al., 2008; Gucciardi, Gordon, Dimmock et al., 2009). More importantly, the intervention complemented the needs of the client and married well with Roger's personal orientations. Nevertheless, although the selection of a coach-centred intervention appeared appropriate, it is necessary to reflect on the sessions, the dialogue with Roger, and the practitioner's perceptions of the therapeutic process in order to inform future practice and refine coach-centred interventions for the development of mental toughness. Largely, the reflections below are based on the practitioner's self-reflections, as well as some discussions with an informed colleague (the last author). The process of self-reflection involves observing and interpreting one's own actions. As such, self-reflections are useful for uncovering knowledge and critically contemplating one's motives and thoughts (Von Wright, 1992). In this instance, we took a phenomenographic approach to self-reflection, meaning we attempted to characterize different events according to theoretically similar conceptions (Storey, 2007). To facilitate this phenomenographic approach, we decided to follow a *good*, *better*, *how* structure, where *good* refers to the notable positive experiences from the intervention, *better* to the areas that could be addressed in future interventions, and *how* to our recommendations about how practitioners and coaches could improve on our approaches (Nilsson & Marriott, 2005).

Good

On reflection, the primary strength of the intervention was Roger's engagement both during each session and with the take-home activities. There appeared to be two primary reasons why Roger engaged so willingly with the intervention. First, are Roger's motivational orientations. Across all areas of psychological practice, it is necessary to match the selected intervention with the values, personal principles, and general orientations of the client (Beutler & Consoli, 1993). Incongruence between the intervention and the client can jeopardize the likelihood that intended positive outcomes will follow. Roger's responses to the General Causality Orientation Scale were a useful indication that an intervention of the nature detailed above would be warmly received. Indeed it was. Roger engaged in discussions, prepared materials voluntarily, completed take-home tasks, and integrated information competently. We acknowledge that not all coaches will approach interventions as Roger did; it is more likely that Roger is an exception to the rule. If Roger had been less likely to respond to a autonomy-supportive coach-centred intervention, it is more likely that we may have pursued an athlete-centred intervention.

We believe that the simplicity of the guiding theoretical framework (i.e., SDT) and its practicality supported Roger's learning and engagement. Roger quickly formed a clear understanding of the three basic psychological needs. For example, he was able to quickly determine how to integrate coaching behaviours that supported both autonomy and competence following Session 2. He also recognized the central outcomes associated with needs satisfaction (i.e., effort, persistence, psychological functioning). The simplicity of the SDT framework allowed for clear coaching behaviours to be identified, defined, and implemented. Further, the link to SDT principles meant that the majority of time in the sessions was spent discussing how Roger could implement specific coaching strategies as opposed to detailing theoretical concepts. The simplicity and direct link of SDT principles to practice is an improvement on other mental toughness programmes (e.g., Gucciardi, Gordon, & Dimmock, 2009) that have included a variety of concepts and behaviours that, arguably, are likely to overwhelm some individuals and only scratch at the surface rather than provide a detailed insight in the concepts and applications.

Finally, there was evidence to suggest that the coach-centred intervention successfully enhanced rowers' perceptions of psychological needs satisfaction and facilitated mental toughness development. Although not a complete representation of the crew, four rowers completed the athlete battery of questionnaires four weeks following the completion of the intervention and again eight weeks later (the remaining six rowers were not present during all three data collection points). Their results, including their original questionnaire scores, are illustrated in Figures 12.3 to 12.7. All four rowers reported initial increases in perceptions of autonomy-supportive coaching environments, psychological needs satisfaction, and mental toughness. Three of the rowers also reported initial decreases in perceptions of controlling coaching environments and psychological needs thwarting. Additionally, these four rowers' responses indicated the successes of the programme were, to some extent, maintained across time. In particular, there was evidence to suggest that autonomy-supportive environments and mental toughness levels were maintained 12-weeks after the completion of the coach-centred intervention. Although appearing to support the implementation of a coach-centred intervention, several other findings call into question the success of the programme and prompt recommendations for future practice.

Better and how

We have collapsed the *better* and *how* sections of our reflection in order to simultaneously identify aspects of the intervention that could be improved and suggest recommendations for practitioners to

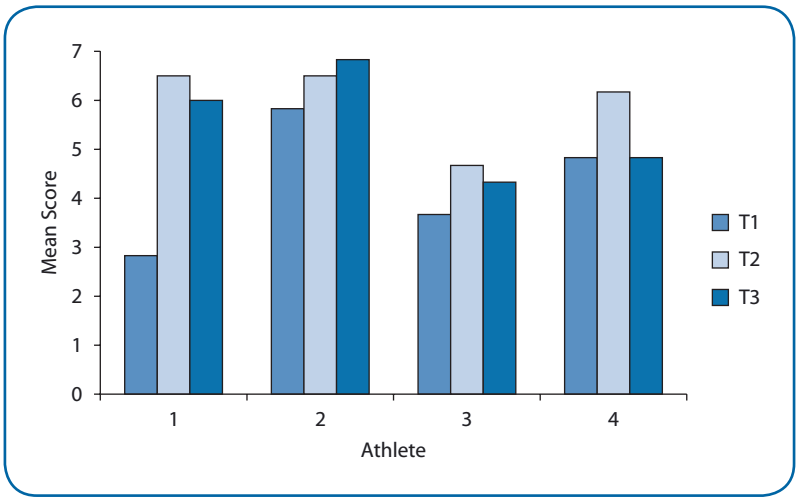

FIGURE 12.3 *Athletes' perceptions of needs-supportive coaching environments over time.*

heed in the future. A primary limitation of our intervention was the lack of in situ training undertaken with Roger. On reflection, we believe that greater learning might have occurred if the practitioner had consulted Roger during training. For example, the practitioner could have provided feedback, insight, and suggestions to Roger following interactions with the crew over the course of each training session. In attending to this suggestion, practitioners could use a number of practices that support reflection during action, such as revising coaching behaviours after audio- and/or video-recording training sessions. Approaches such as reflective practice (Cropley, Miles, & Nichols, 2015) could have augmented Roger's learning, as well as assisted him overcome barriers to implementing particular coaching behaviours. For example, during Roger's debrief of his take-home task following Session 1,

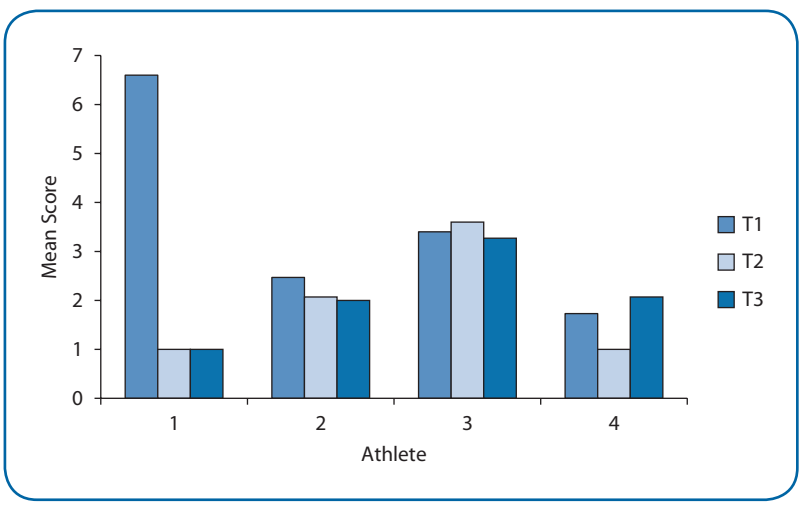

FIGURE 12.4 *Athletes' perceptions of needs-thwarting coaching environments over time.*

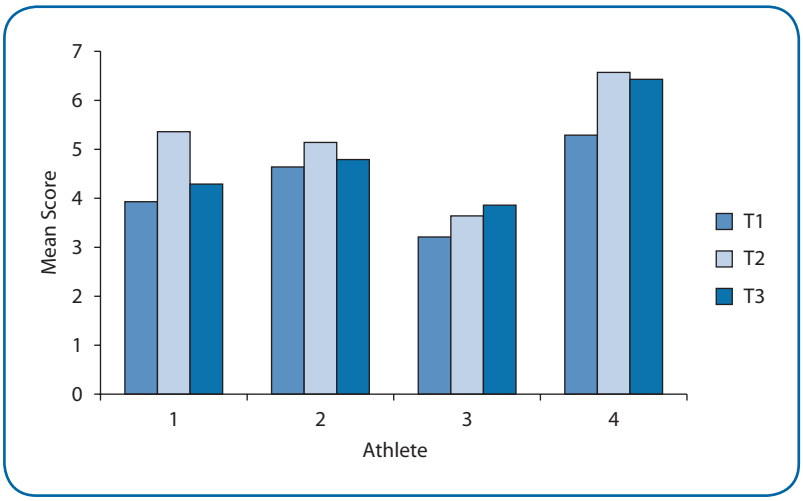

FIGURE 12.5 *Athletes' perceptions of psychological needs satisfaction over time*

he identified that he resorted to his previous coaching behaviours when he was unable to garner athletes' responses to his questions. Without being in the situation, it was difficult for the practitioner to determine what contributed to Roger's difficulties (e.g., poor questioning, distracted athletes, Roger's impatience). In the future, practitioners could follow-up information sessions and individual consultations with coaches by attending training sessions and acting as an advisor, as well as using innovative reflective techniques (e.g., audio- or video-recording training sessions).Interested readers are referred elsewhere for an introduction to the principles of reflective practice (Cropley et al., 2015).

A second issue that arose from the intervention concerns the sustainability of some of the changes observed following the intervention. As illustrated in Figures 12.3 to 12.7, some rowers'

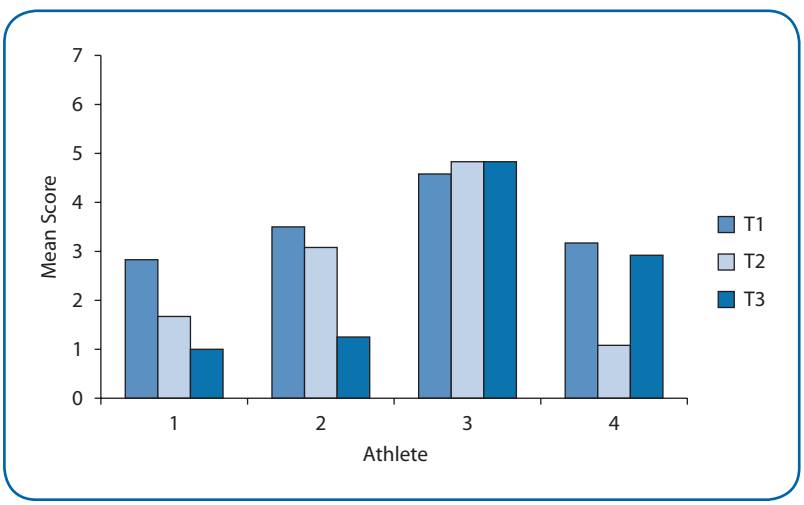

FIGURE 12.6 *Athletes' perceptions of psychological needs thwarting over time.*

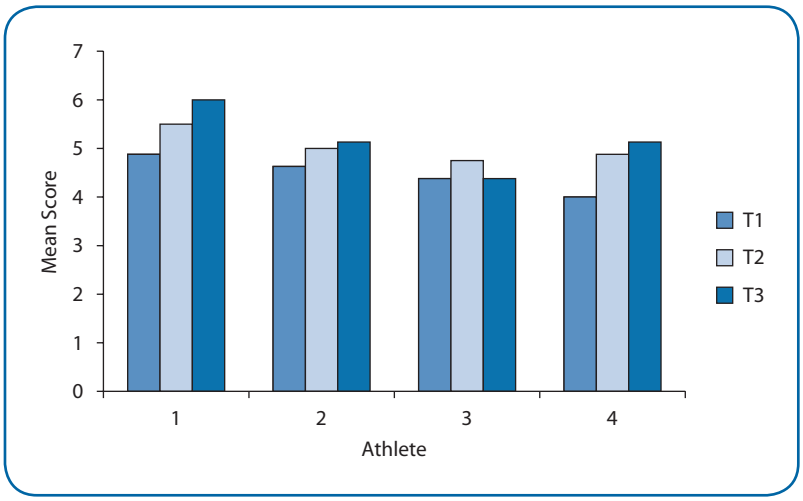

FIGURE 12.7 *Athletes' self-reported levels of mental toughness over time.*

perceptions of the coaching environments that thwart psychological needs, as well as the degree to which their psychological needs were being satisfied or thwarted, were not sustained over time. This discontinuity in the athletes' perceptions might be explained by changes in training content. Specifically, due to winter weather around the final data time point, the crew were predominately participating in indoor ergometer training sessions (compared to on-water training), which can be tedious, exhausting, and not enjoyable. Subsequently, the temporary changes in athletes' perceptions might be a reflection of the training content and context rather than the processes evident in the coaching environment alone. Face-to-face interviews could have been employed to investigate these assumptions. Nevertheless, coaches need to be aware of how certain training protocols might thwart athletes' psychological needs and how to implement strategies to overcome such issues. It would have been useful to have continued to consult with Roger during this transition in training content and to have advised him about how to create autonomy-supportive environments when faced with intuitively tedious, exhausting, and unenjoyable tasks. For example, Roger could have been encouraged to clearly detail the value of ergometer training to rowing performances (e.g., 'successes in ergometer training directly translate to improvements in on-water rowing performance bad help fulfil your performance goals'), set meaningful, enjoyable, and challenging weekly tasks for the crew (e.g., 'your challenge as a crew this week is to complete between 60–80 hours on the ergometers'), and build a cohesive social culture (e.g., the rowers had previously stated that they enjoy having social gatherings following training; Roger could have coordinated a social event following a testing ergometer training session). In the future, practitioners should be more vigilant in addressing the implementation of autonomy-supportive environments across a number of training and competitive contexts.

A final point is the potential for programmes such as the one detailed in this chapter to undermine the psychological needs of coaches. Essentially, the programme can be manipulated into a form of behaviour control. That is, practitioners can impose the knowledge detailed above in a way that is threatening, coercive, and intimidating. That is, practitioners can make coaches feel pressured into employing autonomy-supportive behaviours if they are manipulative in the manner in which they communicate the importance of these strategies. Practitioners, themselves, have to support the

psychological needs of coaches when communicating SDT principles. Specifically, as was attended to when working with Roger, practitioners need to provide choices about how coaches can engage in particular coaching behaviours (i.e., support autonomy), reinforce when coaches have demonstrated learning and effort (i.e., support competence), and form strong therapeutic relationships (i.e., support relatedness). By adhering to SDT principles in their own practices, it is more likely that practitioners will nurture coaches' psychological needs and promote their willingness and commitment to implementing worthy strategies.

SUMMARY

Our intentions in this chapter were to introduce the reader to a contemporary definition and conceptualization of mental toughness, and to illustrate how practitioners might develop mental toughness through a coach-centred intervention. The coach-centred intervention we detailed was founded on SDT principles and aimed to increase the use of behaviours that supported athletes' psychological needs for autonomy, competence, and relatedness, as well as decreased the use of behaviours that thwart these needs. In light of the points raised in the self-reflection above, as well as evidence from four rowers, the intervention appears an attractive means for developing aspects of mental toughness. Additionally, practitioners need to be aware of the shortcomings of our intervention, as identified in the *better and how* section, and to improve upon these in the future to better support the needs of coaches and athletes. By doing so, practitioners are more likely to effectively promote mental toughness development and, consequently, facilitate the consistent achievement of high performance standards in athletes.

FURTHER READING

Mahoney, J., Ntoumanis, N., Mallett, C., & Gucciardi, D. (2014). The motivational antecedents of the development of mental toughness: A self-determination theory perspective. *International Review of Sport & Exercise Psychology, 7,* 184–197. This conceptual paper ties together the principles that underscore self-determination theory and previous research on mental toughness. In particular, the authors argue that mental toughness can be conceptualized by notions of *striving, surviving,* and *thriving*, and that literature regarding self-determination theory is generative in understanding both the antecedents and consequences of these three notions.

Mahoney, J. W., Ntoumanis, N., Mallett, C. J., & Gucciardi, D. F. (2014). Mental toughness in sport: Motivational antecedents and associations with performance and psychological health. *Journal of Sport & Exercise Psychology, 36,* 281–292. This empirical study explored that associations between autonomy-supportive environments, psychological needs satisfaction, mental toughness, and related outcome variables (i.e., positive and negative affect; performance). The authors identified that psychological needs satisfaction (through the provision of autonomy-supportive environments) indirectly relates to adaptive outcomes through mental toughness.

Ntoumanis, N., & Mallet, C. (2014). Motivation in sport: A self-determination theory perspective. In A. Papaioannou & D. Hackfort (Eds.). Routledge companion to sport and exercise psychology: Global perspectives and fundamental concepts (pp. 67–82). Abingdon: Taylor & Francis. This chapter is a useful resource for individuals interested in further readings and information about how to change motivational environments from a SDT perspectives.

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