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# Managing Talent Development and Pressure in Sport



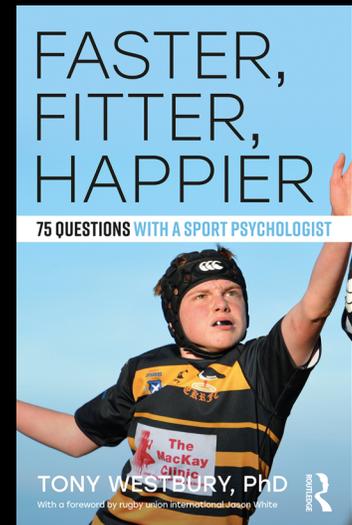
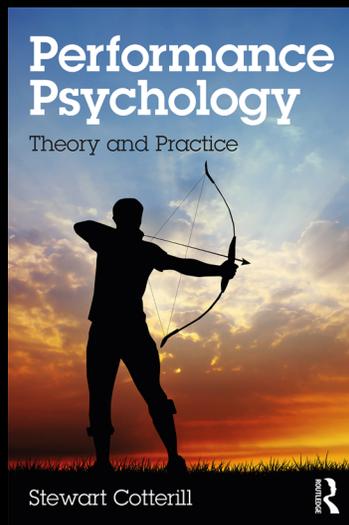
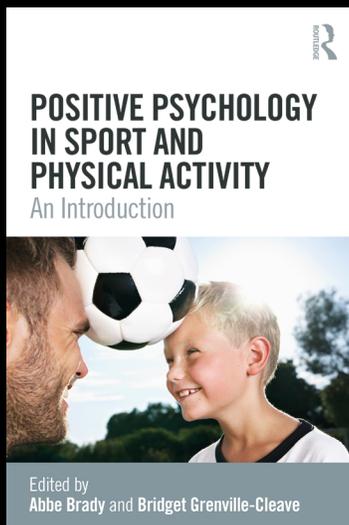
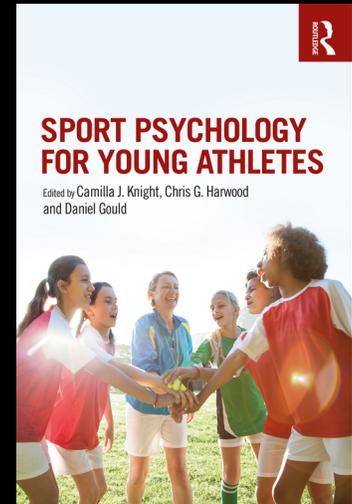
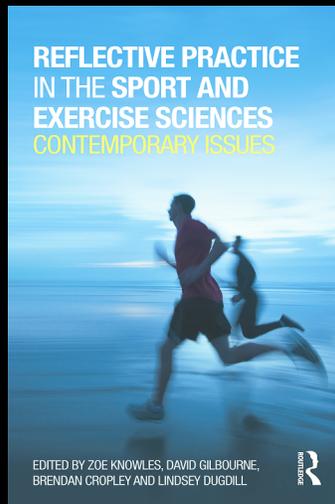
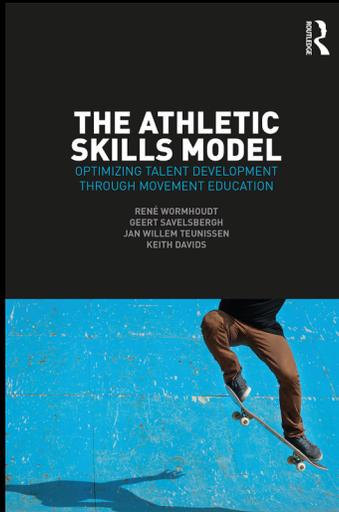


## TABLE OF CONTENTS

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-  Introduction
-  1 • Talent development
-  2 • Reflective practice in talent development: A narrative inquiry of a coaching psychology intervention
-  3 • Stress, coping and emotion in youth sport
-  4 • Psychological strategies to enhance performance under pressure
-  5 • Resilience and growth mindset in sport and physical activity
-  6 • Can sport psychology stop me being sick with nerves before I play?

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# Introduction

Welcome to the first FreeBook from the European Federation of Sport Psychology (FEPSAC)! An initiative developed in collaboration with Routledge, this FreeBook has been co-created for the conference co-organised with the British Association of Sport and Exercise Sciences (BASES) in Nottingham, UK, 28th-29th November 2017.

With *Managing Talent Development and Pressure in Sport*, FEPSAC aims to reach a wide range of colleagues, professionals and students across disciplines within the field of sport in general - and that of sport and exercise sciences and psychology in particular. We hope you will find this collection of existing chapters of interest, whether you are an academic, researcher, practitioner, coach, physiotherapist, athlete or student.

Please note that because this FreeBook is composed of excerpts from several Routledge books, you may see references to other books or chapters. To delve deeper into any of the ideas or concepts laid out in these chapters, use the discount code FEP21 to get 20% off your order at [www.routledge.com](http://www.routledge.com).

## Chapter 1

Excerpted from *The Athletic Skills Model: Optimizing Talent Development Through Movement Education*, Chapter 1 advocates for an athlete-centred (personal) approach when it comes to discussing talent development. Written by René Wormhoudt, Geert J.P. Savelsbergh, Jan Willem Teunissen and Keith Davids, it proposes a model that enhances the necessity of 'dexterity', and key issues such as enhanced functionality, problem-resolution capacity and adaptability are addressed.



# Introduction

## Chapter 2

Chapter 2 compares the authors theoretical foundation and concrete intentions for the coaching intervention with the experiences and reflections of the participants. Excerpted from *Reflective Practice in the Sport and Exercise Sciences: Contemporary Issues*, edited by Zoe Knowles, David Gilbourne, Brendan Cropley and Lindsey Dugdill, the author reflects through a narrative enquiry on coaching psychology interventions.

## Chapter 3

Excerpted from *Sport Psychology for Young Athletes*, edited by Camilla J. Knight, Chris G. Harwood and Daniel Gould, Chapter 3 provides an overview of the current knowledge and understanding of the importance of the stress, emotion and coping processes in adolescent athletes.

## Chapter 4

In Chapter 4 from *Performance Psychology: Theory and Practice* the author, Stewart Cotterill, explores what mental skills training is and considers the evidence supporting the development of techniques including imagery, cognitive restructuring, self-talk, relaxation and goal setting, as well as concentration/focusing strategies.

## Chapter 5

This chapter outlines key concepts associated with fixed and growth mindsets and the consequences of holding such beliefs on resilience. Excerpted from *Positive Psychology in Sport and Physical Activity: An Introduction*, edited by Abbe Brady and Bridget



# Introduction

Grenville-Cleave, it presents some considerations for practice. These are presented together with techniques and interventions to support the development of growth mindset and resilience.

## Chapter 6

In this final chapter from *Faster, Fitter, Happier: 75 questions with a Sport Psychologist*, Tony Westbury discusses how what we feel – feelings and emotions, whether positive or negative – can change individuals' behaviour.

**Dr Xavier Sanchez**  
**PhD, CPsychol, AFBPsS**  
**FEPSAC Vice-President**

## About FEPSAC

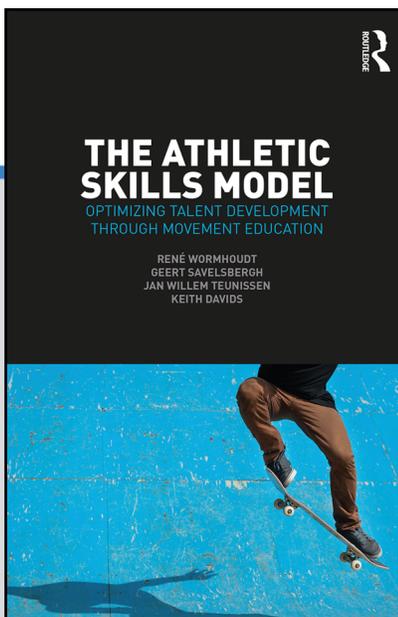
The European Federation of Sport Psychology (FEPSAC; [www.fepsac.com](http://www.fepsac.com)) aims at supporting the development of sport psychology in Europe by a) promoting scientific, educational and professional work; b) disseminating information and promoting cooperation; and c) maintaining social and scientific relations across groups working in sport and exercise psychology. Join the largest sport and exercise psychology organisation in Europe and contribute to the development and promotion of our field worldwide.



CHAPTER

1

# TALENT DEVELOPMENT



This chapter is excerpted from

*The Athletic Skills Model: Optimizing Talent Development Through Movement Education*

by René Wormhoudt, Geert J.P. Savelsbergh, Jan Willem Teunissen and Keith Davids

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# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

A well-known saying in popular sport-science literature is 'If you want to become an Olympic champion, you should select your parents carefully'. However, one needs more than just genetic tendency for acquiring expertise to reach the top in a sport. Characteristics such as perseverance, ability to concentrate, and trust can be critical for the development process of a talented child (Lykken, 1998). Genetic constraints on performance also have an indirect influence on the psychosocial qualities of an individual. The motor development of a good mover or talented person is not linear or unequivocal. Progression, regression, a phase of stagnation, or development that fails to appear can take place in different ways for different individuals. This individual course of development is, in general, not taken into account in athlete development programmes. For example, consider the weeding out of weak players in team sports like football: after all, there is always a 'better' 10-year-old player to be seen. Dutch gymnastics coach Dick Sol termed this the 'principle of delayed satisfaction':

I saw young girls who were so incredibly talented that it was only a question of time before they would reach the top! [...] Many of these girls stopped or they got different interests. All too often the girls who weren't best when they were younger, were the ones who grew into the top.

Personal communication with René Wormhoudt, 2012

The possibility to develop as a talent is dependent on a range of different variables, like genetic markers, important intrinsic motivation, the month in which you were born, your everyday living environment, the encouragement and support of your



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

parents, your friends, as well as 'luck' and the pedagogical and didactical qualities of your trainers. Tiger Woods (see Box 2.1) and Boudewijn Zenden (see Box 2.2) both reached the top, but through different routes.

## **BOX 2.1 TIGER WOODS, TALENT AND TRAINING ANIMAL**

Did Tiger Woods have the talent to become a brilliant golfer? Or did he become brilliant through spartan and specialized training? It is unclear how exactly he achieved so much, but it is clear that both factors played a role.

Tiger's father was a Vietnam veteran. Earl Woods learnt during the war to consider discipline to be of paramount importance. He wanted his one and only son to become an exceptional man. The chosen one, as he once said, like Gandhi or Buddha.

The boy whose father had Afro-American, Chinese and Indian roots and whose mother had Thai, Chinese and Dutch ancestors got the nickname Tiger (his real name is Eldrick). Maybe all these different blood lines are also important. Tiger Woods is much of everything; a repository of talent and perseverance.

As a 2-year-old toddler, Tiger got a golf club from his father. He grew up with it, playing with the golf club and a ball, whereas other toddlers played with trains, a teddy bear or a football. For little Tiger however, this golf club was more than a toy. He had to practise and his father wanted every drive and swing to be well considered. In the garage Tiger had to aim the ball at a net. At that age the dark curly head already showed his tricks on television in *The Mike Douglas Show*. Under the watchful eye of his father, and with millions of viewers, Tiger drove the ball from a tee on a mat in the studio. 'How old are you, Tiger?' Douglas asked. The boy mumbled an answer, but his father corrected



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

him: '2 years!'

This show was not his last: Tiger gave shows at every golf course in the world. Thanks to him, golf gained popularity and quality. At barely 20 years old, he won his first Major, the Masters, at the picturesque golf course of Augusta. Fourteen more Majors would follow. Tiger became the richest sportsman on earth and led the world for many years, until he became unable to cope with the stress burden and lost focus, with well-documented repercussions to his behaviour and his performance.

Tiger was a training animal. Whether he was talented or not, or whether he started playing golf at an early age or not, he trained every single day from early in the morning until late in the evening based on a fixed plan. He practised not only his techniques, but also his mentality, and he undertook power training and fitness training. Tiger was the first golfer in the gym: not simply using the bar-belts or running on the treadmill, but concentrating all his attention to develop those muscles that were necessary to bring his drive to perfection and to increase his endurance. He developed the senses in his hands, hips, legs and feet, and he conditioned his senses by means of visualization and reaction-time exercises. Tiger was an example for all golfers, for all sportsmen who wanted to reach the top. Talent alone was not sufficient. He honed his skills to perfection, first thanks to his father, and later thanks to specialized coaches and modernized training methods. He was an innovator. His book *How I Play Golf* is still one of the prescribed books for all golfers and sports people who want to get the best out of themselves.

As a result of the immense load, one of Tiger's knees got seriously injured. Considering that Tiger hits the ball faster and



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

more powerfully than baseball players hit the ball or than American football players run, it is no surprise that his body got worn out and torn. Yet he returned, although not as fanatic, passionate or hankering for glory and attention. He again started training hard and conscientiously, supervised by controlled coaches. Tiger Woods trusts his talent and he trusts all the skills he learnt when he was very young. These skills will never disappear. That is something he knows for sure. That is something that makes him so exceptional.

*Source:* Interviews with Guus van Holland, journalist, between June 2011 and November 2012.

## **BOX 2.2 BOUDEWIJN ZENDEN, FROM JUDOKA TO SOCCER PLAYER**

Boudewijn Zenden played for PSV, Barcelona, Chelsea, Liverpool, Olympique Marseille and Sunderland, and in 54 matches for the Dutch national team. He was a fast, diligent and skillful player, who excelled later as attacking defender and wandering midfielder. After a goal he often made a somersault to show his happiness. He could fall without pain, as if it did nothing to him. In his youth he was a judoka. Before he was discovered as a soccer talent, he got a black belt and became a champion.

As a pre-schooler, Boudewijn played soccer with Pieter van den Hoogenband, who gained many triumphs as a swimmer at the Olympic Games. They played together at Leonidas in Maastricht and their fathers were friends. Boudewijn's father Pierre was a former judoka, judo commentator for the television and owner of a gym and swimming school. Pieter's father Cees-Rein was a



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

surgeon and his mother was a former swim champion. Boudewijn and Pieter not only played soccer together when they were 6 years old, but they also practised judo before they became members of the soccer club. However, Pieter did not turn out to be a soccer talent or a judo expert: his body and motor system seemed to be more suitable for swimming. Swimming was the sport for which he was made, especially when it transpired that the shape of his body (his breast had the contour of a catamaran) was appropriate for swimming.

Zenden now realizes, two decades later, in the twilight of his career, that he benefited a lot from his judo classes: body coordination, balance, fall breaking, one-to-one fighting, holding each other to start or take over an attack (you cannot escape), face-to-face, within each other's smell and aura, but first and foremost showing respect for your opponent and the rules. Respect is exemplified by bowing before and after the fight. 'If you lose in judo, you and you alone is the one who loses. You did it. If you win, you win, you did it. You are responsible for what you are doing, no one else is', knows Zenden.

Judo teaches you to move and dodge fast; all muscles are developed, from hands to arms and from breast to legs. 'Thanks to judo you develop more muscle groups than you would develop with just soccer. The creative play teaches you to move easier and gives you fun and excitement in the sport', believes Zenden. Referring to children with a mental disability:

Children get self-confidence through the game and the inevitably, sort of necessary, physical contact. Contact is so important for those children. For all children, actually. Children develop faster through judo. They revive and come out of their shell of inferiority. Judo teaches you to regulate aggression.



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

There is no doubt that Zenden had talent for soccer. However, according to him, this talent would not have developed so quickly if he had not practised judo when he was young:

Children that practised judo, do automatically a forward roll when they fall off their bike, moped, or scooter, just as they learned with judo. Judo is always good for your development. However, a sportsman who starts with judo to improve his motor skills when he is 20 is actually too late. Automatisms should grind down at an early age. Sometimes I see soccer players who fight a duel without looking at the ball or the opponent. They are blind to the situation and sometimes even turn their head away. If they had practised judo, they would always look. With judo you have to focus on your opponent. In this way you can take over his attack and you have to look at him to make sure he is not taking over your attack. You can never turn your head away. And if you want to keep control on the situation, this is actually something you cannot do in soccer either.

This aspect of motor learning is important because it implies that developing athletes are learning to regulate their actions with information. This performance characteristic forms the basis of adaptive movement behaviours, and it is a requisite of skill acquisition.

Zenden is proud of his career and his body (still). When he looks into the mirror, he sees a healthy man with a well-muscle and sprightly body. This flatters his vanity:

I never did strength sports, but I took care of my body and trained it in the right way. All of this started with judo. Without that basis I wouldn't have been able to develop my soccer talent at a later age and I wouldn't have played



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

at so many top-class clubs. I am very proud of the latter, but I might be even more proud of the black belt I achieved with judo. I heard that Marco van Basten also played different sports, like ice hockey and platform diving. And is not he a good golf player too? I am sure that motor skills and talent go hand in hand with a broad basis.

*Source:* Interviews with Guus van Holland, journalist, between June 2011 and November 2012.

What these exemplar case studies show is a remarkable agreement with theoretical ideas in ecological dynamics. Talent should be continually stimulated and developed and there should be less of a focus on talent identification, which is almost impossible, given the nonlinear nature of expertise acquisition in sport (Phillips, Davids, Renshaw & Portus, 2010). Furthermore, the prediction of success is likely to be easier in more 'closed' rather than 'open' sports because movements are less affected by the environment and fewer components are likely to impact performance (Vaeyens, Lenoir, Williams & Philippaerts, 2008). Even when athletes have a good genetic platform for a specific sport and are provided with excellent facilities and equipment, they will still have to train. Trainers and coaches not only influence physical development, but also function as an extension of the parents with respect to educating and developing children. They have a lot of influence on the understanding and the fulfilment of norms and values such as respect, decorum, trust, and taking and getting responsibility. Trainers teach children to handle victory and loss and to take the abilities and inadequacies of their teammates into account. However, the influence of the social environment changes over time.



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

Many extensive research programmes in talent development over the past two decades have shown that, even when you are talented, you should spend many hours striving to reach a particular level in a sport or activity. Apparently, in addition to talent one needs time and opportunities to develop this talent. This is an important point that coaches need to fully appreciate. That is why the role of development coaches differs greatly from the role of performance coaches. Development coaches operate along medium to long-term timescales, continuously challenging children to improve and develop and change their performance behaviours for the better over periods of months and years. Performance coaches are much more caught up in the 'here and now' of driving athletes on to win games, avoid defeat and progress in competitions over periods of weeks, days and hours. Of course, this does not rule out some emphasis on development and learning at advanced performance levels. Expert athletes need to be challenged to continue adapting and refining their ways of achieving performance outcomes. Nevertheless, the timescales tend to differ greatly between development and performance coaches in sport. Is this crucial distinction well understood in elite sport organizations? Do development coaches really appreciate the value of defeat or a tough series of challenging games for young learners?

## The development of the brain

According to van Cranenburgh (2009), a skill develops because the brain forms and refines memory tracks both during and between the training sessions. There are many strategies to optimize this process. The choice for one particular learning strategy should be tailored to the individual: not everyone



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

benefits from verbal feedback, and not everyone is good at imitating. Every learning principle involves a specific brain system. Therefore, a trainer and child are inextricably bound up with their environment, in its broadest context. Sport performance cannot, therefore, be understood separately from the environment in which it occurs. Trainers and coaches need to have knowledge about the different developmental stages a child passes through. In practice, trainers switch from the F-juniors (7–8 years old; U7/U8) to the C-juniors (13–14 years; U13/U14). However, training 7 to 8-year-old children requires a different approach to training 13- to 14-year-olds. Not only with regards to the level of training, but also on the level of coach behaviours in dealing and communicating with children of different ages. Coaches of children are faced with many relevant questions. Do you play an 'adult' game with children? Or do you make changes to field areas, size of the ball, specific 'rules' of a game, and the number of players involved in training games? (Chow, Davids, Renshaw & Button, 2013). Knowledge about the development of the whole child plays an important role in deciding which changes should or should not be implemented, and when. This knowledge is important in order to empathize with a particular age group and to guide the learning process in a functional way. Consider, for example, the role of cortical development in children and youth.

## ***The prefrontal cortex***

Neuropsychological studies show that the brain of young persons can only handle a certain amount of independence. The maturation of the prefrontal cortex (see Figure 2.1) is complete around the age of 25 years. For this reason, adolescents cannot make difficult decisions, calculate consequences and balance



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

possibilities and perspectives. Therefore, adolescents need adults into their late twenties for motivation, inspiration, support and guidance. Young persons should discover the world and gain experience, but within a framework where parents, teachers and coaches guide them (Jolles, 2016).

Although almost all the neurons are present from birth, the brain develops and matures until the age of 25 years (Sowell, Thompson, Holmes, Batth, et al., 1999). In the brain, grey matter mainly consists of cell bodies and dendrites of neurons and white matter mainly contains the axons (offshoots) of the neurons. The axons connect different brain areas with grey matter and conduct the impulses between neurons. The white matter consists also of myelin. Myelin is the insulator of the axons and enables signals to be passed more efficiently. During the development of the brain in childhood and adolescence, there are many changes in the grey and white matter and in the speed of the connections. Nowadays, this phenomenon can be mapped with Functional Magnetic Resonance Imaging (fMRI) scans. We see increases in the amount of white matter in the brain (myelination). This shows that the brain is still developing after birth. A child's brain works less efficiently than an adult brain. For example, solving a simple sum takes longer for a 7-year-old compared to an adult because the brain areas that are needed to solve the sum work together more slowly. In diffusion tensor imaging (DTI) scans, an fMRI technique makes the white matter visible, and so the different strong fibre connections in the brain can be seen. The stronger the white matter connections, the faster the transfer of information between different brain regions.

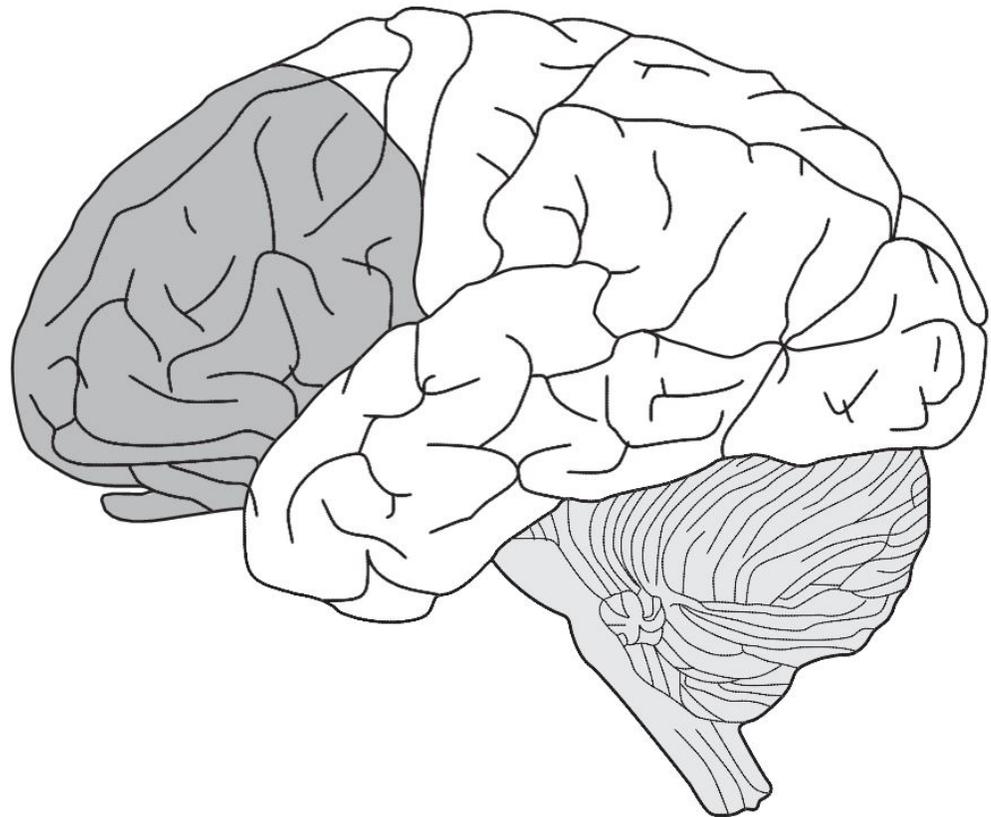
The prefrontal cortex is located at the front of the brain (see Figure 2.1), and it is this brain region that undergoes a relatively late but enormous development. The prefrontal cortex is mainly



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

involved in the higher cognitive functions, or executive functions (Tamnes, Østby, Walhovd, Westlye, et al., 2010).



**FIGURE 2.1** Location of the prefrontal cortex at the front of the brain

Examples of these functions are planning, flexible handling of information, selective attention, and inhibition (the ability to inhibit and stop impulses or behaviour). Young children often show impulsive behaviour and they only focus on the short-term consequences of their behaviour (Inhelder & Piaget, 1964; Zelazo, Craik & Booth, 2004). It is believed that this is related to the development of the prefrontal cortex: executive functions therefore develop with age. This starts around the age of 6 years,



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

but not all executive functions develop simultaneously (Anderson, 2002). This development can be illustrated with a test that measures inhibition, like a stop-signal task (Oosterlaan & Sergeant, 1998). In this task, children are asked to push a button as soon as they see an airplane on a computer screen. However, they cannot push the button if they see a red cross on the airplane. They have to repress the motor response (the task to react as fast as possible). Large differences can be seen in the performance on this task between 7 and 13-year-old children (van den Wildenberg & Crone, 2005). It thus seems that children become better able to suppress unwanted behaviour, which in turn makes them less impulsive.

Another example of changing patterns is goal-oriented behaviour. This develops at a later age: from the age of 7 years children learn to plan, but they do not have enough effective strategies. From the age of 12 years, children start to use goal-oriented behaviour, like taking initiatives or thinking about conceptual strategies (Anderson, 2001). For example, the sense for socially desired behaviour also develops from the age of 12 years. Children can make choices with respect to behaviour, clothes or language that will make them part of a group. Moreover, children start to see the long-term consequences of their own behaviour (Crone, Vendel & van der Molen, 2003). The provision of experiences for the functional development of executive function is thus very important for performance at school, social development and the ability to do things independently.

When we look at the development of a young athlete, we should not underestimate the importance of cognitive development. Even an athlete's ability to learn (that is, how quickly someone understands an exercise or learns technical skills) can be an indication for talent (Burgess & Naughton, 2010). Also for a



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

top-class athlete well-developed capacities to plan, reflect, self-regulate and self-evaluate are essential (Jonker, Elferink-Gemser & Visscher, 2010; see also Box 2.3). These cognitive processes can provide insights into how well a developing athlete can engage with a learning environment to improve his/her performance. This can reveal coachability.

## **BOX 2.3 THE EFFECT OF MOVEMENT ON COGNITIVE FUNCTIONS**

Although it is hard to investigate exactly how movement can lead to a better performance on cognitive functions like inhibition, planning and attention, different studies show that sport and physical activity releases growth hormones in the brain that are related to memory (Dishman, Berthoud, Booth, Cotman, et al., 2006). Moreover, there are indications that movement leads to the formation of new blood vessels and the creation of new neurons (angiogenesis and neurogenesis). There are also studies that reveal that, even after a period of short, moderate intensive physical activity there are improvements in inhibition and attention, which mainly seems to be related to an increased blood saturation in the brain (Kashihara, Maruyama, Murota & Nakahara, 2009).

Studies have shown that children who experienced more physical education at school, gained better marks for certain academic courses, could focus better and showed better behaviour in the classroom (Trudeau & Shephard, 2008). On the other hand, obesity and watching television seemed to be negatively related to school performance and cognitive function (Sharif & Sargent, 2006).

When we look at the behavioural profile of top-class sportspeople, we see that in general they have purpose, and



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

good abilities in reflection, self-evaluation and anticipation (Jonker, Elferink-Gemser & Visscher, 2011).

Brain development is crucial for learning motor skills in sports. When learning new motor skills, different brain regions are involved that are also important for learning other (non-motor) skills (Seidler, 2010). Moreover, learning a motor skill not only encompasses the learning process itself, but also the ability to use these skills at the right moment or in situations that are different from practice contexts. We call this transfer of learning (see Chapter 5). An example is a tennis player who can learn to play squash without too much training because the concept and coordination patterns of both sports are, at a general level, somewhat similar. Another example is a study from Seidler (2010), in which participants were asked to learn five different motor tasks. Three of them were almost the same and the others were not related at all. Results showed that participants demonstrated transfer of learning between the three similar tasks, but surprisingly they also learned the other two tasks much faster than a control group, which only learned the two separate tasks. It seems that the adaptability of the first group was increased. However, it is (still) unknown how this works on the level of the brain and the nervous system. This relationship between a learned movement pattern and a target movement pattern has been described with the terms 'near' (more similar) and 'far' (less similar) to help us understand which movement patterns are likely to transfer more and less effectively (Rosalie & Müller, 2012). Some have argued that this terminology is somewhat vague due to the relative nature of the descriptors 'near' and 'far'. After all, when does 'near' become 'far' on the scale of transferability? Rather more specific terminology may be considered in the



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

description of specificity and generality of transfer based on the nature of the information that is present in a practice environment (Davids, Güllich, Araújo & Shuttleworth, 2017). The more specifically that practice task information relates to a performance environment, the less general will be transfer of learning. As noted earlier, this is part of the crucial decision making of coaches when they plan practice task design including number of players, pitch areas to practise, rules of a practice task implemented and equipment changes.

## Models of motor (talent) development of children

Yvonne van Gennip, speed skater and Olympic champion in 1988, believes:

Without fun, no success!

*Personal communication with René Wormhoudt, 2017*

Through the years, important literature has been published in the area of talent development. In 1985 Benjamin Bloom wrote the book *Developing Talent in Young People*, in which he describes talented people from different disciplines. For these talents it is studied in retrospect what the effect of different variables had been on the development of their top career. Ericsson and colleagues (1993) also conducted a study of practice hours estimates among musicians and suggested that, on average, about 10,000 hours of practice would result in acquisition of expertise in musicians. However, data from both studies are not specific to top-level sport and their data need to be interpreted with caution. Côté (1999) developed a model that is similar to Bloom's model (1985), but now applied to sports. These studies confirmed that



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

even talented athletes in sport have to practise many hours, which is an idea that coaches and teachers understand well. Even if science were currently able to identify genetic profiles suitable for specific sports (it cannot, see Davids & Baker, 2007; West-Eberhard, 2003), genes and talent alone will not be enough to predict that an individual athlete will make it to the highest performance level. Such an approach may be considered deterministic in a 'gene-centric' way (West-Eberhard, 2003). Like Yvonne van Gennip's quote above, lots of environmental factors, such as fun, are also of great importance.

## ***The 10,000-hour 'rule'***

high levels of deliberate practice are necessary to attain expert level performance

*Ericsson, Krampe and Tesch-Römer, 1993: p.392*

Is this true in sport? Ericsson and colleagues (1993) stated in their retrospective estimate of practice hours among musicians that performers need, on average, around 10,000 hours of deliberate practice which is structured, dedicated training, with feedback, to achieve expert status (see Figure 2.2). Yet this account did not recognise the importance of talent and genetic profile. This number of hours is on average 20 hours per week, or 3 hours a day, of dedicated training for 50 weeks of the year. Ericsson and colleagues' early specialization model proposes that dedicated training is superior to other forms of training.

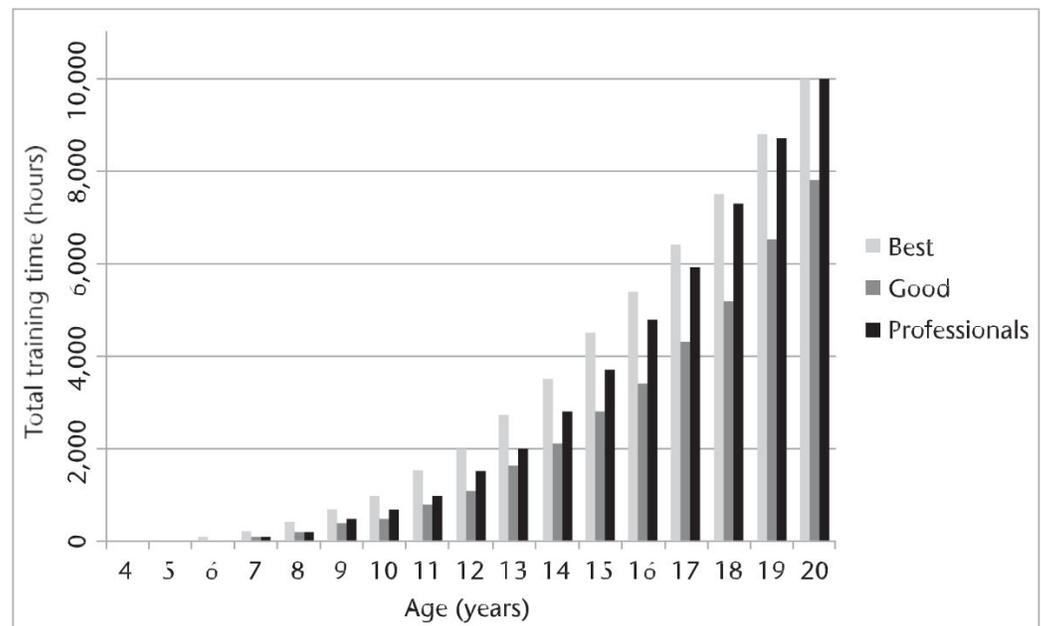
The tenets of deliberate practice are not harmonious with the key tenets of the Athletic Skill Model (ASM) due to the emphasis on overspecialization of practice at a very young age. Twenty hours



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

dedicated to specific training is quite monotonous for children; in this respect motivation seems to be more important than 'some kind of talent'. In order to reach an average of 10,000 hours in 10 years, an 8-year-old child should train for 20 hours a week, which is educationally unsupportable and a biologically dangerous level of intensity. Training for so many hours at an early age is a form of early specialization that does not seem useful: it could lead to many negative effects, including possibility of burnout and enhancing proneness to repetitive strain injuries.



**FIGURE 2.2** Total amount of practice hours, by age, for violinists of different expertise levels (adapted from Ericsson, Krampe & Tesch-Römer, 1993)

This 10,000-hour 'rule' (Gladwell, 2008) appears to not be a rule at all and has now been heavily criticised for lacking substantial evidence to support it (see Hambrick, McNamara, Campitelli, Ullen,



# TALENT DEVELOPMENT

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et al., 2016). A key criticism is that measures of variability in estimates of time spent practising show great inter-individual differences in response to deliberate practice. Due to the focus on an average value in these data, the figures are quite contentious. Indeed, Ericsson and colleagues (1993) found that 8,000 hours was more typical of expertise acquisition in some musicians. In chess players, this figure was 5,000 hours, but Tucker and Collins (2012) pointed out these reported practice time values had a huge range between different chess masters. A lot of variation is present in these types of data, making them difficult to interpret. What is far more important is the nature of the practice activities undertaken by developing athletes, rather than the time spent in practising, which seems to vary greatly (Hambrick, Oswald, Altmann, Mainz, et al., 2014).

**TABLE 2.1** Training hours for Canadian figure kating at national level

	<i>Training hours per week</i>	<i>Around the age of (years)</i>
Start	5.5	8
+2 years	7.8	10
+4 years	11.2	12
+6 years	14	14
+8 years	15.5	16
+10 years	20.3	18
+12 years	23.7	20
+14 years	22.7	22

*Source:* Starkes, Deakin, Allard, Hodges, et al. (1996).

For example, between 3,200 and 23,000 hours of practice has been reported by expert chess players (Campitelli, Connors, Bilalíc



# TALENT DEVELOPMENT

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& Hambrick, 2015; Hambrick, McNamara, Campitelli, Ullen, et al., 2016). The notion that deliberate practice for 10,000 hours is needed to reach a high performance level in sport has also been criticised by Jean Côté and colleagues (see Côté & Erickson, 2015, for an excellent review chapter).

## ***Prescribed practice time***

There is no doubt that the amount of specific training does need to increase step by step over the years during an athlete's development. Of course practice needs to be intense and focused but it also needs to include lots of fun and enjoyment. For these reasons, the ASM emphasises what is done during practice rather than how many hours are spent in practice. This will change according to the needs of different athletes at different stages of development. So, how can we fill these practice hours differently for different individuals? Table 2.1 describes practice, spread out over 14 years of training, for Canadian figure skating at national level (Starkes, Deakin, Allard, Hodges, et al., 1996).

The number of training hours varies for different sports. The average age at which field hockey talents start to play hockey is 7 years; ice skating is 9.6 years; table tennis is 7.9 years; swimming is 7.6 years; judo is 6.2 years; and cycling is 11.9 years. For a sport like gymnastics, talents start between ages 5 and 7 years. Around the age of 10 years, top-class gymnasts train 24 to 36 hours a week, all year round. Although training hours vary between sports, there is clearly an increase in the number of hours as an athlete matures and develops. Box 2.4 discusses the interpretation of these hours.

A study from Fransen and colleagues (2012) demonstrates that



# TALENT DEVELOPMENT

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the same performance outcome can be obtained by combining fewer training hours for different sports, as compared to many training hours for one sport.

## **BOX 2.4 DIVIDING THE HOURS DIFFERENTLY**

According to W. Lindner, former national coach in East Germany (GDR), the organization of hours of training per week for athletes was divided into four age phases:

1. Grundlagentraining (basic): 10–14 years;
2. Aufbautraining (build up to): 15–16 years;
3. Anschlussstraining (connect): 17–18 years; and
4. Hochleistungstraining (peak performance): 18–23 years.

It is interesting to see that the foundation is not laid early, but between the age of 10 and 14 years. The average peak for growth acceleration for boys is around 14 years old (see Chapter 3). This phase is then extended to the age of 18 years, to subsequently make a connection with the top. In the first 9 years (until 18 years old), the athletes trained for 4,490 hours. In the next 5 years, they trained for 5,410 hours.

This finding suggests something about the quality of what is learned: you seem to learn more if you experience different sports. Maybe even more important with the multisport approach is that you need less time to become more skillful in a target sport! In other words, by being involved in a variety of sports you can use the available training time more effectively to achieve a better performance outcome in the end. This approach also has important implications for countering the negative effects reported for early specialization in some developing athletes.



# TALENT DEVELOPMENT

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## ***Repetition without repetition***

Clearly, many hours spent training and practising is needed to develop talent. It is important not to get injured for a long period of time and/or often within this phase of acquiring expertise. Variation in exercises is an important way to prevent long-lasting imbalances and asymmetries. It also helps individuals to search for different information sources to regulate their actions (van der Kamp & Renshaw, 2015). As mentioned earlier, exploration for the most valuable information sources with which to regulate your actions is likely to enhance specificity of transfer. The experiential knowledge of many coaches leads them to highlight the value of 100,000 to 160,000 repetitions during practice (see Box 2.5).

However, these values should only be taken as a rough guideline and not be treated as a specific target towards which all learners should aspire. The number of practice trials necessary to learn a particular 'elite' skill lies somewhere in between these two numbers. Typically, one will need more than 3,000 practice trials to learn a new movement. At 20,000 trials you should have good coordinative movement patterns and at 100,000 trials movement patterns should become more stable under different circumstances. Being able to perform stable movement patterns is important in elite sport. The key issue concerns what is repeated. The ASM proposes that it is the search for and discovery of functional performance solutions in sport that is the subject of repetition, not a specific movement pattern (Araújo & Davids, 2011). Like the theory of ecological dynamics (e.g. Davids, 2015), the ASM conceptualises practice as a process of 'repetition without repetition' (Bernstein, 1967; see Box 2.5), which emphasizes each individual's search for functional coordination solutions, rather than the constant repetition of a single putative



# TALENT DEVELOPMENT

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ideal movement pattern during practice. With this conceptualization, large numbers of trials should be experienced during unstructured play in perceptual-motor workspaces available in a variety of performance environments, such as a bedroom or while playing outside in a street. Some children play field hockey, run around with stick and ball all day long, and even walk up stairs while keep a ball under control with head and feet!

## **BOX 2.5 NEVER EXACTLY THE SAME MOVEMENT**

An interesting phenomenon with respect to movement repetitions was discovered by the Russian neurophysiologist Bernstein (1967): everyone who hits a nail with a hammer 1,000 times will make a different movement every time he/she hits the nail. The way the nail is hit differs with every repetition. This is what he termed as 'repetition without repetition'.

However, even after many hours of practice, improvement is still possible. This was shown in a classic study from Crossman in 1959. He examined how long factory workers in Cuba needed to roll a cigar with one hand. After one million repetitions (about a year of work experience), people were still able to improve the time needed to roll a cigar. After 7 years, which is equal to rolling 10 million cigars, there was only a little room for improvement. This example illustrates that many repetitions have to be performed to reach an expert level of performance and that one can continue improving, even at an advanced level of performance (Crossman, 1959). In other words: you are never too old to learn, but the moment at which you learn remains important. Even in advanced athletes with a high level of expertise, the search for small refinements and advances should be the rationale for repetitions during practice and training. These small changes can provide distinct competitive



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

advantages allowing skilled performers to 're-invent' themselves as they exploit their enormous levels of experience in interacting with different performance environments and competitive situations.

Different performance solutions can be found in cyclic sports like cycling and ice skating, as well as non-cyclic sports like field hockey and tennis. Cyclic movements can be complex due to the different performance conditions experienced during running, race-walking and cycling, for example, and it is possible to reach the requisite high number of repetitions. Within a running or ice skating pattern, 100,000 repetitions can be achieved more quickly than 100,000 repetitions of taking a penalty corner with field hockey. Various sports require such a complex coordination that it has to be offered early and frequently to the developing athlete in order to experience the desired number of functional movement solutions needed to achieve top performances.

Thus, it seems important to emphasize the notion of deliberate play rather than deliberate practice, because the potential to vary task constraints to enhance a child's exploration of movements is offered in play. This objective could be achieved by adding basic forms of movement to a varied programme in which fun, play and pleasure are recognized as most important, and not the mere repetition of movement patterns. Children need coaches with the relevant understanding and skill to create these varied challenging situations in organized learning programmes (Côté, Baker & Abernethy, 2007).

In Brazilian society, kicking a football around a variety of 'playscapes' is known as la pelada or playing in a 'naked' landscape (Araújo, Fonseca, Davids, Garganta, et al., 2010). The



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

skills and the number of ball contacts can increase significantly in this way but, crucially, it will allow learners to adapt their movement behaviours to different environmental contexts, providing an adaptive capacity through experiencing 'repetition without repetition'. The young child can start practising skills by engaging with different performance environments, and will reach the zone of around 100,000 or 160,000 practice trials needed in finding functional performance solutions under different task constraints. Of course, this is not the same as specializing in one sport and engaging in many repetitions of the same movement pattern. Rather, the focus is on becoming a specialized athlete by improving skill at finding functional performance solutions under a variety of different performance conditions, providing a different way to interpret the value of between 10,000 and 100,000 performance repetitions. This idea is completely harmonious with the notion of deliberate play, proposed by Côté and colleagues (Côté, Baker & Abernethy, 2007; Côté & Erickson, 2015).

## ***Bloom's classic age phase model***

One of the most compelling pieces of literature in the domain of talent development comes from the pen of Bloom (1985). He examined in retrospect the role of the coach, parents and environment, and whether there are differences in these roles with respect to different periods in the life of a talent. The study focused mainly on musicians, scientists (mathematicians) and athletes (swimmers). Bloom confined the study to people who reached the top. In Bloom's description we see three different phases that each require a different role of the coach and the parents and where the facilities to practise are becoming



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

increasingly more important. Bloom indicates that these stages are not fixed points in time that start and end from one day to the other. Instead, they are characteristics of the different periods of a talented individual's life. Unlike Ericsson and colleagues (1993), Bloom recognized that talent existed as a concept. For Bloom, the development of talent is a continuous process during which elements change over time. The following features characterize the three complementary stages in his model.

## ***The young years***

The child starts taking classes, usually not by his/her own choice, but by a series of coincidences in the environment. For example, parents who take their child to the korfbal club when the mother has to play, which brings the child in contact with the sport. Paul van Ass, former field hockey player and Dutch national coach explains that in his youth all children who played hockey also played football and in the summer they played tennis and in the winter they all went skiing: judo, for example, did not fit within the culture of the parents.

The progression a child makes in that period of his life is enormous. Important here are the enthusiastic, competent coaches that children encounter, who make the game enjoyable and full of fun, and the parents who stimulate the child, enabling him/her to experience training routines. The influence of the peer group is also important, as is the recognition that the child receives from his/her family, networks and support systems. These factors contribute positively to the motivation of the talented individual to continue with sport or to train harder. The child gets pleasure out of the fact that he/she improves performance and thus learns. This phase is consistent with the



# TALENT DEVELOPMENT

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tenets of Self Determination Theory (SDT) (Ryan & Deci, 2000) which advocates the importance of acquiring competencies for the motivation of people.

In this phase coaches should not really try to identify talents, but rather pick out the children who really enjoy playing the game or participating in physical activities with enthusiasm and energy.

## ***The middle years***

In this phase training gets more serious, and the focus is on the accuracy of acting. Trainers are demanding and want the best out of every training session. Bloom (1985) even proposes that, if these people had been trainers in the younger years, many talented individuals would have stopped participating in a target activity. What this means is that the approach to coaching/teaching is very different at each stage of development and that there is actually no place for a coach with a strict training regime in the young years, when the key aim is to promote fun and enjoyment in children.

The role of the parents also changes. They have to allow their children to experience independence (another of the key drivers of motivation in SDT; see Ryan & Deci, 2000) and they should be less involved in their child's training to allow them to express their autonomy. The child takes more responsibility for his/her performances and acquires more advanced skills within a specific performance area. Still, the recognition from the social environment (peers, family and support networks) is a big source of motivation for the child, which in SDT is known as 'social relatedness'. At this stage, children enjoy practising and it is not uncommon to train between 10 and 20 hours per week in sport or



# TALENT DEVELOPMENT

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music.

## ***The later years***

In this phase one dots the i's and crosses the t's. The different ways of task execution are refined and the talented individual begins to create his/her own performance style. The trainer is more supportive and the individual mainly learns by exchanging ideas, using the trainer as a mentor. Strategies are being shared and techniques are being analysed. The trainer is not the tough trainer anymore who requires precision: now the focus is on personal guidance and analysis. For most of the day the talented developing athlete works at becoming immersed in functional professional practices and customs that come with a specific professional sport setting, what is known as the 'form of life' (Rietveld & Kiverstein, 2014). The 'form of life' is a concept originally promoted by the great philosopher Wittgenstein and it refers to typical patterns of behaviour and customs that are recognized as important in a particular area of expertise such as a team game or sport. In this phase it is common to train about 20 hours or more per week.

Bloom's classification may be familiar. At first, children can be extremely excited about their sport and want to play all the time. The trainer is a 'hero'. Later, training becomes normal and children experience more frustration when things do not work out the way they want. In this phase, the trainer can be seen as an ogre. In the later phase, the talented individual expresses more autonomy and has learned to make choices on his/her own, with less interference from the trainer or parents. This is all part of the developmental process and the creation of self-identity. It is an important part of motivation to work hard to gain expertise in a



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

target sport, after the ideas of Ryan and Deci (2000). However, this does not mean that the trainer/coach plays no further part in the athlete's progression, but that the role is different from previous developmental stages.

The stages are described very broadly and sketch a framework with identifying marks. There is thus no strict boundary between the different stages. For this reason it is hard to determine in which stage a child is, and when he/she develops further to the next stage. The most important point is that the role adopted by coaches and parents differs considerably as the child develops, which can be poorly understood in pedagogy since practitioners tend to act in the same way throughout the different phases.

## ***Application of Bloom's ideas to sport***

Jean Côté and colleagues have described a more age-specific approach to talent development. They provided a broad interpretation of Bloom's stages and translated them into age-specific stages for sport (Côté, Baker & Abernethy, 2007) (see Table 2.2). The three phases are similar to the division within a school system: primary education (4–12 years old), high school (12–18 years old) and vocational training (19 years old and over). For each phase, they look at the number of different sports that are performed and the changes that occur from phase to phase. The model they developed is called the Developmental Model of Sport Participation (DMSP) and comprises three phases that might lead to (top-class) performances within a specific branch of sport (Côté, Baker & Abernethy, 2003; Côté, 1999). To do this, they looked at both the physical and psychosocial aspects of development (Fraser-Thomas, Côté & Deakin, 2008a).



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

**TABLE 2.2** Total participation in sport and movement and the amount of other sports per age category

<i>Phase (age)</i>	<i>Deliberate play and other sport activities (% total participation)</i>	<i>Deliberate practice (% total participation)</i>	<i>Number of other sports</i>
Try-out phase (6–12 years)	80	20	3–4
Specialization phase (13–15 years)	50	50	2–3
Investment phase (16–22 years)	20	80	1–2

*Source:* Côté, Baker and Abernethy (2003), translated freely into an age-specific model.

## ***Age 6–12 years: the try-out phase***

This phase is characterized by sampling different sport activities in an informal and unconstrained participation environment, which is also called deliberate play. According to Côté and Erickson (2015), deliberate play is illustrated by getting appreciation from playing and having fun, and not by winning or specific performance improvement. The situation as a whole can lead to unconstrained learning. A relaxed atmosphere during training mainly characterizes this phase: the trainer is not playing a dominant role, but keeps a low profile and creates an environment that is necessary for children to play sports in a safe and enjoyable setting. The key matter of importance for the children is fun and pleasure. This, in turn, positively influences the intrinsic motivation of children. The emphasis is not on performance, but rather on the experiential process of participating in training and playing games.

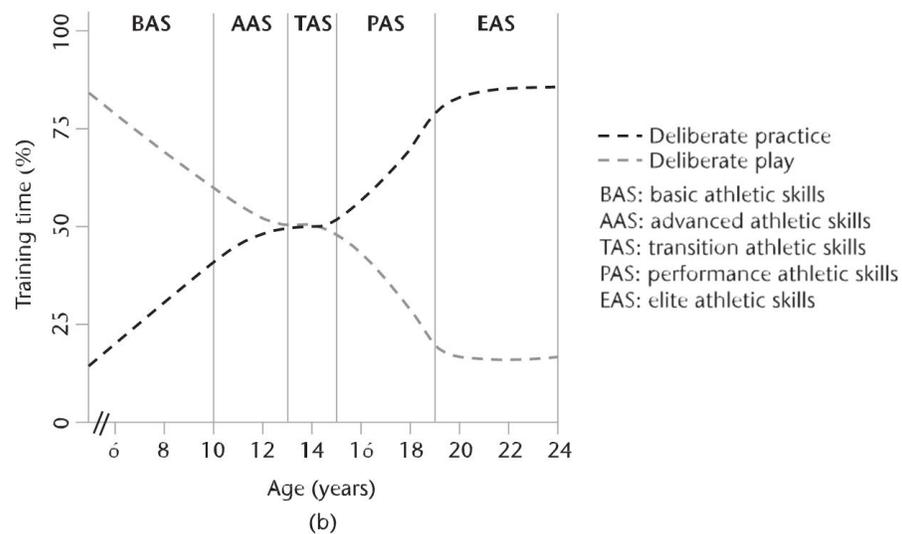
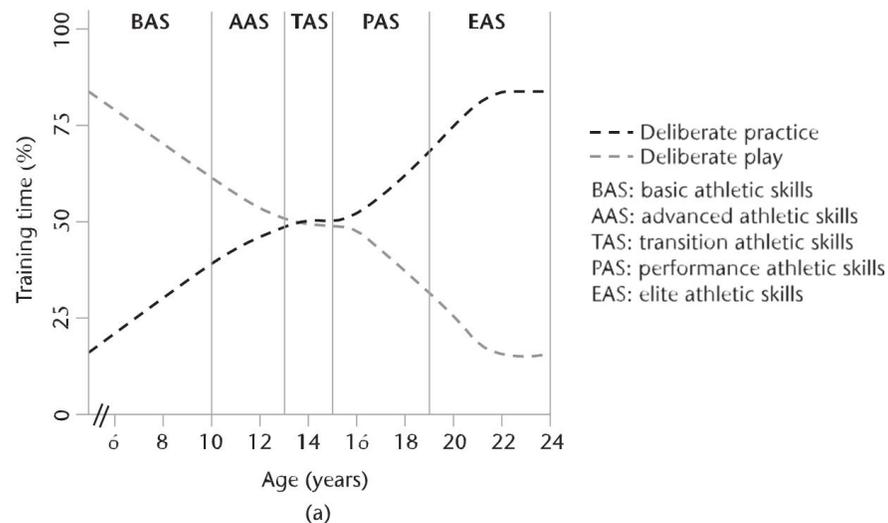


# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

## ***Age 13–15 years: the specialization phase***

From this age onwards the number of different sport activities experienced by the child is reduced and is thus more focused on gaining extensive experience in a specific sport. Practice becomes more intense, in line with ideas of Ericsson and colleagues (1993).





# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

The key idea is that practice has to be taken seriously and that achieving performance goals should be an important motivation for training.

In this phase, the ratio of intensive practice/deliberate play is 50/50 (see Figure 2.3). The focus is more on the dedicated sport that the child chooses, and during training the emphasis is on acquiring sport-specific skills. This phase could be called the 'transition phase': the phase in between playing and intensive training. It is important that the coach balances the ratio between play and more intense practice. This mix allows children to stay motivated and the trainer can teach them important specific movement skills that are essential for the continuation of a future career in sport.

## ***Age 16 years and over: the investment phase***

This phase is typified by a greater devotion to everything that is related to the target sport. The adolescent trains for long periods and trains intensively. The focus is more on performance outcomes. There is less deliberate play and the remaining deliberate play is supportive. The play component is used to relax, especially within a busy training schedule. For example, many top-class athletes play (reasonably good) golf or tennis to relax. From this phase onwards, intensive specific specialization, needed for adolescents to learn the tricks of the trade, are started. The basic skills of a sport are mastered. The trainer/coach is supportive, sharing experiences and listening to the athlete. There is also room to discuss strategy or technique. The coach no longer tells an athlete exactly what to do: the athlete is now acquiring the 'form of life' in a sport (Rietveld & Kiverstein, 2014); that is to



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

say, he/she is becoming immersed in important patterns of behaviour and culture (e.g. attitude, professionalism, motivation, dedication and focus) that are needed to succeed in high-level sports. Relevant skills in this phase are observational learning, attention to detail in practice and role modelling (for example, watching how elite athletes are continually trying to re-invent themselves to achieve key performance outcomes in different ways, due to changes in their personal constraints as they have aged, such as flexibility, speed and strength).

## ***Transfer between different motor skills***

Trying out many different sports, having fun and not 'working' on one specific aspect, but rather being engaged in playing different sports might allow an athlete to enhance performance levels. Côté, Baker and Abernethy (2007) suggested that there is a transfer effect between different sports and that the basic skills of different sports overlap, which in turn leads to the development of a broad foundation of motor skills. This transfer could take place through a platform of 'basic movement skills'. From the transfer point of view it is possible to improve in one sport by practising and playing other sports. Training different motor skills by participating in different sports will accelerate an individual's perceptual-motor development. As a result, less time could be needed to reach a high performance level. When learning all these different basic movement skills within different skills (sports), adaptability is encouraged, and this is one of the seven elements that compose the concept of coordination (see Chapter 6).



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

## ***The vision of 'broad' training***

The vision of giving children a broad basis upon which to build a specialization is supported by science. These studies mainly focus on the prevention of injuries, athletic capacity, the length of an athletic life, and the pleasure people have in sports while training so hard. Most of the studies are retrospective, with the main question to the athlete being: 'What brought you here?'

An example of this kind of study comes from the United States on the development of Olympic athletes (see also Box 1.3). In this report, it is stated that many of the athletes were involved in different sports when they were younger and started specialized training at a later age. Vaeyens and colleagues (2009) support this vision in their study on talent identification. They give the example of Yelena Isinbayeva (a gold medallist for pole vaulting at the 2004 and 2008 Olympic Games). She started pole vaulting when she was 15 years old: before that she did rhythmic gymnastics. Clara Hughes gained two bronze medals at the Olympic Games with cycling, but later in her career she would win medals at the Olympic Winter Games (2002 and 2006) for speed skating, one of which was a gold medal (Vaeyens, Gullich, Warr & Philippaerts, 2009).

More recently, Bruce and colleagues (2012) demonstrated the importance of a broad sporting involvement during the sampling and specialising years. They found that expert netball players invested significantly more hours in sports other than netball during these years in comparison to their non-expert counterparts. In other words, diversity assisted with the acquisition of fundamental motor skills that under-pinned the sport-specific skills needed to elicit an expert performance. In a similar way, Soberlak and Côté (2003) reported that expert ice



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

hockey players had participated in up to six different sports within the sampling years, which suggests again that a broad sporting diversification led to the acquisition of fundamental skills – and these skills underpin the development of sport-specific skills.

These examples show that it is possible to become an expert in a certain sport discipline with a foundation in a different sport. One could call these top-class athletes the exponents of a broad training. After all, they grew up in a different sport and started to train more specifically for the goal sport at a later age.

So can we say that the rule of broad training without specific training is the only route to success? There might be more roads that lead to success. Ford and colleagues (2009), among others, make a nuance between deliberate play and deliberate practice. They developed a model for young football players that is in between deliberate practice and deliberate play, the so-called early engagement hypothesis (Ford, Ward, Hodges & Williams, 2009). According to this hypothesis one should start early with goal-directed exercises that often improve the technical aspects of a sport. However, this should be done in a playful environment. According to Ford and colleagues (2009), the combination of deliberate practice and deliberate play contributes to the development of top football players. This is in line with recent research from Memmert and colleagues (2010), which shows that deliberate practice in the form of unstructured play activities has a crucial role in the development of creative behaviour in top players (see Box 2.6). These findings raise questions over the merits of using the term 'deliberate practice' at all. Practice should be intensive at times, should definitely incorporate fun and enjoyment, and should focus on adaptability and refinement of actions through repetition of achieving performance outcomes



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

in different ways, as performance conditions change.

## **BOX 2.6 THE ART OF CREATIVE PLAY**

Looking at creative sportspeople is a treat for the eye. They make the game exciting and surprising. The supporters of the New York Knicks are frequently standing on the benches for the Asian basketball player Jeremy Lin. Mart Smeets calls him phenomenal, Los Angeles Times talks about a legend, and Earvin 'Magic' Johnson is enthusiastic: there is a burst of 'Linsanity'. Creative sportspeople fire the imagination. They are the ones most often named and honoured. For coaches, sportspeople and fanatical supporters it is interesting to know what experiences led these creative players to these exceptional performances.

Memmert, Baker and Bertsch (2010) compared sport-related experiences acquired during the career of creative and less creative German professional players in basketball, soccer, field hockey and handball. Although creative intellectual capacity is probably an important component for making the right decisions, Memmert and colleagues (2010) make a distinction between expertise in making decisions and tactical creativity. Expertise in making decisions is related to finding the best tactical solution in a certain situation. Convergent thinking is important in this respect: finding the best solution for a given problem. Tactical creativity can be defined as the ability to make varying, original and flexible decisions in different game situations. A creative player is able to think divergently to see and make use of unusual, innovative and unique possibilities.

According to Memmert and colleagues (2010), tactical creativity can only occur in attacking game situations. Attackers initiate the action and create possibilities (divergent thinking) while



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

defenders have to react in an adequate way to these possibilities (convergent thinking). Creative quality stands out well in the forward line. However, this does not mean that a player has to excel in creativity in order to be a good attacker. Convergent thinking can also be of value when scoring goals. A good example in this respect is midfielder Michael Ballack, one of the top scorers in the history of the German national team.

## **Important experiences for the development of creative players**

For the study (Memmert, Baker & Bertsch, 2010), 16 trainers of national clubs or teams selected their three most creative attackers and their three less creative defenders. As an extra check, these selected players in basketball, soccer, field hockey and handball were independently assessed by a group of top trainers with much experience in the particular ball sport. Their assessment confirmed the earlier division between creative and less-creative players.

Subsequently the selected players filled out a questionnaire, which focused on the type and the number of sports experiences. A distinction was made between experiences acquired during training hours with the characteristics of deliberate practice and training hours with characteristics of deliberate play. In addition, a distinction was made between experiences acquired before the age of 14 years and experiences after this age. In order to test the reliability of the answers, the players were asked to fill out the same questionnaire 2 months later. Fortunately, the answers were highly comparable, and Table 2.3 shows a selection of the data. The most striking finding in this study is that highly creative players, compared to their less-creative peers, acquired more experiences during their career in situations with deliberate



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

play. This difference is present in both careers as a whole and in experiences acquired before the age of 14 years.

**TABLE 2.3** Sport-related experiences acquired during the career of highly creative and less-creative professional athletes

	<i>Highly creative players (average number)</i>	<i>Less-creative players (average number)</i>
Years active in the sport	17	16
Hours spent on the sport	6.843	5.455
Total training hours (deliberate play)	2.857	1.954
Total training hours (deliberate practice)	3.146	3.544
Training hours at <14 years (deliberate play)	1.341	842
Training hours at <14 years (deliberate practice)	977	888

*Source:* Memmert, Baker and Bertsch (2010).

## Practical implications

The findings of Memmert, Baker and Bertsch (2010) support the assumption that both deliberate practice and unstructured play activities play a crucial role in the development of creative behaviour in top players. The fact that highly creative players learnt through play both when they were young and throughout their career seems to underline the importance of deliberate play. The coach therefore needs to find a balance between unstructured play, which seems necessary for motivation and creativity, and goal-directed training to make targeted improvements in performance. Memmert and colleagues (2010) recommend incorporating rich game situations with information



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

and stimuli for the players (as opposed to simple game situations) in play activities. In this respect one can think about varying materials (such as different balls), rules and ways to perform techniques, so that players are challenged to make new, surprising actions.

*Source:* Kok, 2012.

## Why we need the ASM

The studies discussed in this chapter contribute to the foundation of the Athletic Skills Model (ASM). Since the model is broad and comprehensive, the authors chose to provide an extensive summary.

Psychologist Benjamin Bloom made the basis for models about development of top athletes in 1985. Bloom's research group selected multiple domains (music/art, tennis/swimming and maths/medicine), from which they interviewed the absolute top achievers about elements which, in hindsight, had been important for their career. Elements such as the amount of training/practice, the role of the parents, coach and friends, and the accessibility of facilities were considered. As mentioned earlier, three bigger phases can be distinguished: the younger years, the middle years and the later years. Although Bloom did not provide details on the exact ages for each stage, he did indicate that, in the development of a talent, different stages can be distinguished that should be taken into account.

It is beyond doubt that training and practising are important variables in becoming better at a discipline. Ericsson and colleagues (1993) have argued that one needs on average 10,000 hours of intensive training and practice in order to reach the



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

absolute top. However, this has been criticized because the figure has been calculated in retrospect for musicians and cannot be copied directly to each sport. Ericsson called the devoted training that is needed to reach the top 'deliberate practice'. This term implies that only structural devoted training has to be undertaken. This training does not have to be fun by definition, but has to focus on the development of one aspect to reach the goal. It also demands a lot of time. The nature of practice activities undertaken by different athletes during this period of time – what do I do when during practice? – has not been indicated by Ericsson. His only conclusion is that, on average, 10,000 hours of training are essential and that deliberate practice is the distinguishing factor when reaching the absolute top as a musician (Ericsson, 2003). The problem is that extant data suggest that this average value does not seem to fit most individuals (see Hambrick, Oswald, Altmann, Meinz, et al., 2014, for an analysis). It is worth noting that Bloom did not design his model of talent with top sport in mind either, but it was a part of his research.

Jean Côté (1999) is one of the scientists who developed Bloom's and Ericsson's models further, for top sport in particular. This led to the Developmental Model of Sport Participation. This model states that there might be a different route to success, other than the 10,000 hours of devoted training that is putatively required to reach an expert level of performance. In this model, based on Bloom's model, ages are coupled to developmental phases: the try-out phase (6–12 years old), the specialization phase (13–15 years old) and the investment phase (16 years old and over). The term 'deliberate practice' is coupled with the term 'deliberate play'; the latter is, according to Côté, mainly important in the try-out phase and partly also in the specialization phase.

The emphasis that Côté and colleagues (2007; 2015) provide is on



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

playing to be fun in the first sampling years, where it is undertaken in a semi-structured environment that has plenty of common ground with a target sport. The introduced structure is of crucial importance; it still concerns the learning environment. Play should rule the roost for younger children, but when children are older and develop further, the influence of playing should be reduced. In the teenage years and early adulthood, there is more intense practice than deliberate play.

When a football coach tells children: 'Make teams, make a field, here is a ball and make your own rules', this can be seen as a form of unstructured learning which is akin to deliberate play. It is football training, but with a different perception of the activity for the participating children. Trainers know from their experience that deliberate play is not experienced as a burden. A training programme during which children have to sprint five times ten meters is experienced differently from children playing tag, although they run the same distance in the same time.

To reduce the step from deliberate play to deliberate practice, Côté and colleagues (2007; 2015) presented an activity scale: (1) free play (< 5 years old), playing without structure; (2) deliberate play; (3) structured practice; and (4) deliberate practice. It can therefore be stated that for the development of children in a sports environment, a start with deliberate play is desirable, which continues into practice with increasing age. For the youngest children (6–12 years), Ford and colleagues (2009) developed a model for football players that compromises between deliberate practice and deliberate play, called the early engagement hypothesis. It is important, though, to start early with goal-directed exercises in a playful environment. According to Ford, both deliberate practice and deliberate play contribute to the development of top football players (Ford, Ward, Hodges &



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

Williams, 2009).

In conclusion, the ASM provides an overarching framework for the main ideas of Ericsson, Côté and Ford that can be integrated into a comprehensive model for the development of children in sport.

In general, trainers and scientists agree that children need a broad physical foundation to reach the top at a later age (see Box 2.7). A longitudinal study in the United States (see Box 1.3) concluded that Olympic medallists practised on average 3.4 sports per person at school and 3.1 sports outside school. This could mean that there is a relation between practising multiple sports and reaching the top in the goal sport. Vaeyens and colleagues (2009) support this theory. A large number of Olympic athletes changed from their goal sport at a later age (around 15 years old) and still they reached the absolute top (Vaeyens, Gullich, Warr & Philippaerts, 2009). This phenomenon is called 'talent crossover', but it cannot be achieved for every sport. The ASM calls this a 'transfer of learning'. It is assumed that this transfer of learning can move from one sport or sport element to the other through the basic movement skills (see Chapter 5). Balyi's Long-Term Athlete Development model (LTAD) (Balyi, Way & Higgs, 2013) is one of the most popular models on development to be used by many sport federations. The model overlaps with the human life. Many federations (for example, Gulbin, Weissensteiner, Oldenzel & Gagane, 2013) use this model because the different phases of child development are outlined clearly, providing a handle for trainers to set up their training programmes. The LTAD model uses seven stages that all have specific characteristics for the age phase (Ford, De Ste Croix, Lloyd, Meyers et al., 2011). Similar to the ASM, Balyi uses the Peak Height Velocity (PHV) and the Peak Weight Velocity (PWV) to distinguish biological age from calendar age for children (see Chapter 3). In addition, Balyi emphasized



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

broad education by being the first practitioner to add an overview with a structure. He made a distinction between sports with an early specialization (e.g. gymnastics, figure skating and tennis) and sports with a late specialization (e.g. football, basketball, other team sports and athletics) (Balyi, Way & Higgs, 2013). However, Ford and colleagues (2011) claim that there is no scientific foundation for the LTAD model because the information is gained mostly from practice and does not focus on individualization.

## **BOX 2.7 THE VIEW OF SWIM COACH JACCO VERHAEREN**

At the Royal Dutch Swimming Federation we developed the long-range plan for the education of swimmers. This states the ideas we propagate: until the age of 13 or 14 years you should participate in another sport next to swimming. It is no problem if this is at the expense of the swim training. More than that, we actually encourage it. Do something else than swimming like judo, soccer, field hockey, or tennis. It doesn't really matter what other sport. What we want is that the children get an all-round development. Even more important, children at that age should do what they like. If you ask me what is complementary, I think judo for example is a highly complete training and you also learn to deal with an opponent. Moreover, you learn balance, respect and resistance, which also plays an important role in the future of the children. For this reason I would say: swimming and judo is a perfect combination.

The ones who reach the top in swimming were all good when they were young. You then talk about the Olympic champions, you see those people already around the age of 10 or 11 years. This doesn't mean however that they all reach the top, but the Olympic champions we had, all swam national records when



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

they were 9 or 10 years old.

*Source:* Personal communication with René Wormhoudt, 2011

The models discussed (and summarized in Table 2.4) have at least one thing in common: they do not offer fixed exercises that arise from their vision. The above-mentioned models and theories are combined into the ASM, which reveals its encompassing value and importance on different levels. The ASM is holistic by nature and has a foundation based on best practice (experiential knowledge) and science. The latter is based on studies of skilled and expert individuals who have reached the top of their performance, inside as well as outside sports. A broad physical foundation is important to prepare for a career in elite sport. Training and moving in general, based on the ASM vision, can also help to anticipate the potential for social lifestyle problems during development.

**TABLE 2.4** Talent development models: a summary of the main characteristics

<i>Author</i>	<i>Year</i>	<i>Vision</i>	<i>Characteristics</i>
Bloom	1985	Three-phase model: younger years; middle years; and later years.	Retrospective analysis of absolute top players in different disciplines.
Ericsson, et al.	1993	10,000-hour model of deliberate practice.	Retrospective analysis of musicians. Train much and train hard. Not necessarily enjoyable. Early specialization is essential.
<u>Côté</u>	1999	Three-phase model of deliberate play: sampling years; specializing years; and investment years.	Model focused on sports. Goal-directed and structured training in a playful environment. Shift from play to practice. No exercises.
Ford, et al.	2009	The ideas lie in between Ericsson's and <u>Côté's</u> theories. Model of early engagement.	Goal-directed and hard training in a playful environment. Early engagement in superior technique. No exercises.



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

<u>Balyi, et al.</u>	2004	Long-Term Athlete Development seven-phase model: active start; <u>FUNDamental</u> ; learn to train; training to train; training to compete; training to win; and active for life.	Theoretical model. Makes use of windows of opportunity. Biological age (PHV) is essential. Less focused on individualization (Ford et al., 2011). No exercises.
<u>Gulbin, et al.</u>	2013	Australian MEETTTTFFF model: F1 (Foundation): Begin F2: Extend F3: Compete T1 (Talent): Express T2: Confirm T3: Commit T4: Achieve E1 (Elite): Perform E2: Win E3: Dominate	Extended in more details of the LTAD model. Added separate phases.
<u>Wormhoudt, et al.</u>	2012	Athletic Skills Model: basic athletic skills (6–9 years); advanced athletic skills (10–12 years); transition athletic skills (13–14 years); performance athletic skills (15–18 years); and elite athletic skills (19–24 years).	Holistic model. Combination of science and practice. Mix of early engagement, deliberate play and practice. Biological age (PHV) and sensitive periods are important. Age phases are linked to exercises and motor-learning theories. Transfers of learning by donor sport, multisport and sport adaptive.
Lloyd & Oliver	2012	Youth Physical Development four-phase model: early childhood; middle childhood; adolescent; and adulthood.	Combination of science and practice. Based on strength and conditioning. Biological age (PHV) is important.

## Summary

Recent literature on athlete development in sport programmes proposes the need for a more holistic approach, which has a



# TALENT DEVELOPMENT

Excerpted from *The Athletic Skills Model*

greater focus on personal development. This chapter put forward a case for an athlete-centred approach, with the principles of the ASM. We proposed a model that enhances the necessity of 'dexterity', with key issues such as enhanced functionality, problem-resolution capacity and adaptability.



CHAPTER

2

# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT

## A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

REFLECTIVE PRACTICE  
IN THE SPORT AND  
EXERCISE SCIENCES  
CONTEMPORARY ISSUES



EDITED BY ZOE KNOWLES, DAVID GILBOURNE,  
BRENDAN CROPLEY AND LINDSEY DUGDILL



This chapter is excerpted from

*Reflective Practice in the Sport and Exercise Sciences:  
Contemporary Issues*

Edited by Zoe Knowles, David Gilbourne, Brendan  
Cropley and Lindsey Dugdill.

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# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

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## Introduction

This chapter is based around my development of a form of intervention that is new and unusual in a sport psychology context. The coaching psychology and group-based intervention had a focus on career development, self-reflection and the personal growth of young sports talents with the intention to integrate demands and challenges from their sports career, their school education and their private lives. Via stimulating co-creative reflective practice and mutual engagement of the participants, the coach presented here aimed to create an environment where all participants could unfold their resources, develop a reflective space and share and discover new perspectives for common or individual challenges. In terms of structure and progression I initially provide a description of the intervention – based on narrative-collaborative theory and practice – before placing emphasis on the narrative and qualitative analysis of the reflections of the young talents and their involvement in the group coaching process. The experienced effect of the coaching process is documented through the analysis of selected participants' reflections, both directly after the end of the intervention and half a year later, and these analyses are presented in narrative form. I conclude the chapter by reflecting on my own practice, comparing the aims and process of the intervention to the experience and understanding of the participants. In this way, the practitioner's reflective path will end with some personal thoughts and the possibility for new insights, also in regard to the usefulness of the approach in other settings.

In a sporting context, coaching psychology (see Palmer & Whybrow, 2007) can be regarded as a new type of intervention and also a supplementation of the repertoire of approaches in



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

applied sport psychology. In this example the novelty of the intervention is even greater, because the intervention is not only directed at individuals, but at groups of young talented athletes involved in different kinds of sports. The intervention aims towards the athlete as a whole person by integrating a broad focus on the athletes' careers, their school education and their private lives as adolescents. In that sense, the athletes' identities, their learning and personal growth in different contexts of their lives is the main developmental objective of the intervention.

With reference to Jarvis (1999) and Lane and Corrie (2006), the inspiration for the development of my own reflective practice has been based on two sources of knowledge: (1) knowledge founded in evidence-based research and academic theory, and (2) knowledge evolved as a kind of subjective theory generated from reflective practice. As a reflective practitioner, I am constantly engaged in improving my practice; as a reflective practitioner researcher I am not only interested in improving my practice, but also in understanding possible effects. From these perspectives, the objective of this chapter allows me the space to compare my theoretical foundation and concrete intentions for the coaching intervention with the experiences and reflections of the participants, and with the intention of drawing further conclusions in regard to understanding and developing my practice.

## **The theoretical foundation and its application in a group-coaching intervention**

First the theoretical foundation and some basic guidelines for the application of the intervention are presented. The intervention/interaction is based on a narrative-collaborative



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

approach and is built on the theoretical pillars described briefly in a schematic way (see Figure 16.1); these pillars can be seen as the integrated foundation of intervention methodology (see Stelter, 2014; Stelter, 2010; Stelter & Law, 2010)

A central claim of the narrative-collaborative group coach is to unfold and further develop the coachees' social and personal identity. Identity development can be seen as the pivotal point in all five theoretical pillars, although differently approached by each of them. Developing identity is initiated by the coach in three ways:

1. By focusing on and reflecting about values

The coachees are encouraged to reflect on values inherent in their intentions, wishes, aspirations, etc. as guiding markers to help them organize their careers, education and private lives. These values are no longer timeless and universal, but rather are grounded in the practices and events of local communities and the specific setting. The ultimate aim in the context of the studied coaching intervention was to facilitate the participants' understanding of their involvement in an elite sports career and help them to understand *the why* and *how* of their involvement. This was not necessarily by focusing on specific goals, but by reflecting on key values as a feature of their lived conditions in the three central domains: career, education and private life. This focus on values should give the coachees a better sense of how specific actions and ways of thinking and feeling are connected to their selves and their identities. White (2007) spoke about *landscapes of consciousness*. I prefer to speak about *landscapes of identity*. During the coaching dialogue, the values drawn from intentions, wishes, aspirations, etc. are related to former, present



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

and possible future actions. Here, White (2007) spoke about the unfolding of *landscapes of action*

## 2. By providing opportunities in meaning-making

Meaning-making is considered to be one of the main purposes of facilitating the coaching dialogue (Cavanagh, 2006; Stelter, 2007). Meaning is fundamental, because the young talents ascribe specific values to their experiences, actions and to their interplay with others in their three life domains (career, education and private life). Things become meaningful to individuals when they understand their own way of sensing, thinking and acting. This can be achieved by telling certain stories about themselves and significant events they are involved in, or plan to be in. Meaning-making is based on past and present experiences as well as future expectations, and the way coachees relate to the world is holistically incorporated in this timeline.

Meaning evolves from the interplay between acting, sensing, reflecting and speaking. In the process of meaning-making, two dimensions should be highlighted: first, the *personal process of meaning-making* formed through the actual experiences and (implicit) knowledge that an individual acquires in various life contexts; and second, the *social process of meaning-making* shaped through social negotiation and narratives that describe the coachees' involvement in and interplay with different settings and practices. These two dimensions are interwoven.

## 3. By giving space for the unfolding of narratives

Telling stories to one another and developing and sharing narratives and accounts, either in a coach–coachee relationship or in the group-coaching context, is fundamental to the process of social meaning-making. Narratives serve to structure events and to join them together in timelines and storylines. Narratives bring



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

Narrative collaborative group coaching Theoretical pillars for an intervention methodology				
<p><b>Social constructionism</b></p> <p>It is not the individual with specific traits upon whom the intervention will focus. The social reality of individuals and groups is understood as being shaped in <i>relationships</i> between different individuals and through specific contexts (Gergen, 2009).</p>	<p><b>Appreciative inquiry and solution-focused approach</b></p> <p>The coach puts focus on aspects of success, strengths and possible solutions that the coachee has, has had or will find in specific situations and events (Cooperrider &amp; Sekerka, 2003; Orem, Binkert &amp; Clancy, 2007; De Jong &amp; Berg, 1998).</p>	<p><b>Positive psychology</b></p> <p>Highlight positive human behaviour that leads to thriving individuals and communities (Seligman &amp; Csikszentmihalyi, 2000). Help the coachee focus on specific strengths and virtues and work towards psychological well-being and moments of happiness (Biswas-Diener, 2010; Seligman &amp; Csikszentmihalyi, 2000).</p>	<p><b>Narrative approach</b></p> <p>Through forming alternative, more uplifting stories about events and situations, new connections between the coachee's self-understanding, values, intentions, purposes and goals on the one hand, and the coachee's readiness and possibility to act on the other, will emerge (White, 2007).</p>	<p><b>Community psychology</b></p> <p>Specific attention is drawn towards <i>empowerment</i>, where the individual develops new resources through reflective and collaborative processes in the community of practice (in casu: the coaching group) that will enable coachees to think and act in new ways (Orford, 2008).</p>

**Figure 16.1** Theoretical pillars of narrative-collaborative group coaching, following Stelter, R. (2014). *A guide to third generation coaching – Narrative-collaborative theory and practice* (Dordrecht: Springer Science + Business Media).



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

coherence to stories – the source of meaning-making – and as a result of this process life makes sense and becomes meaningful. Narratives establish temporal coherence and shape how events, actions, other persons and the individual himself/herself can be experienced and perceived as sensible and meaningful.

The plot of every story forms the basis for the development of an inner structure and drama (Sarbin, 1986). By telling stories and listening to one another in the group, the participants cause their life-stories to become meaningful and interrelated. In that sense the story can have an impact both on the storyteller and the group participants who listen to it. The individual participant gains a sense of being part of a cultural context with specific, shared values and meanings. This process of collaborative meaning-making is furthered by applying specific coaching techniques, e.g., outsider witnessing (White, 2007), and collaborative reflection on what a group member has said. On the basis of the theoretical foundation a number of guidelines were developed to ensure the greatest possible methodological overlap of the five coaches involved in the project.

## **Narrative-collaborative practice: some central assumptions and guidelines**

- Both coach and coachee(s) are conversational partners.
- Every participant contributes to the joint process of meaning-making and the production of knowledge.
- All participants strive to be flexible and willing to change, thereby making mutual development possible and allowing them to redefine their perspective and position.
- Being attentive to others and to differences can be very



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

fruitful for one's own development and learning.

- All participants value the contributions of others to the dialogue and the knowledge that unfolds co-creatively, but at the same time value possible and enduring differences.
- Generous listening is central for mutual inquiry, where interested and sometimes naïve wondering helps to develop generative conversations.
- Paraphrasing remarks or reflections made by the coachee, and interpreting or shaping these reflections on own premises, including associative comments on specific reflections ('When you say that, it makes me think of . . .').
- Flexible attitudes make it possible to redefine own and other positions; one is thereby open for further development and for learning from others.
- Using questions (as the coach) that invite the participant(s) to a change of perspective. Employing different types of circular questions, as used in systemic coaching.
- Inviting the coachee to use metaphors, and using metaphors as coach to unfold sensual reflections and expand the dimensions of actions, perceptions and thoughts through language.
- Coupling landscapes of action (perspectives of purpose, goals and action) and landscapes of consciousness/identity (values, focus on identity, aspiration, dreams and wishes) and vice versa.
- Coupling specific values that are or might have been important to the coachee. In this process the stories grow in richness and complexity, and can develop in a new direction (alternative storyline). This lets the coach strengthen the coachee's sense of identity – the process of scaffolding – to bridge the coachee's learning gap by recruiting lived



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

experiences.

- Encouraging the use of narrative documents: poems, short essays, pictures, concrete reflections or retelling of stories either by the coach or the coachee(s).
- Outsider witness procedure: others reflect on a story told by a coachee in order to cast light on its value and meaning for the storyteller and listeners

## Case study

To illustrate the above ideas and the links from these to the theoretical stance outlined above, a case from a coaching session with altogether six participants from different fields of sport is used. They were all around 16–17 years of age and go to a high school that has a special track for elite sport talents. The coaching session took place in a meeting room at the school. In the following I will focus on a sequence where Maria and Patrick play a central role. The four others are mainly listening in this phase.

### ***The case: 'It's about believing in yourself!'***

I perceive 16-year-old Maria as an incredibly goal-oriented and ambitious student, and elite athlete. She is clearly aiming for an international career and has already taken part in several European championships in her age group. In a later coaching session, her classmates say with a smile that the previous year, their first year, she could sometimes be a little 'too intense', almost desperate in her desire to be one of the best students, and best in her sport. At times she was unapproachable. She confirms this assessment now, as the others describe their impressions in a group conversation. During this period in the first year, she had a stress-related breakdown, and the school's Team Denmark



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

coordinator was very supportive of her during this time. As a result of the breakdown, Maria has in fact begun to tone down her ambitions as a student. But she is still uncompromising in her sport. At one point during that day's session, Maria articulates her expectations of her sports coach:

It's really important for me that my coach considers me a talent. If I'm not told that I am a talent, I'll quit!

Patrick, a very reflective, talkative and outspoken athlete, responds immediately to Maria's intense statement. He thinks that she is being too defeatist:

No, you have to believe in yourself. I don't understand why you make yourself so dependent on what your sports coach thinks and says. The main thing is that you think you can make it!

At first, though, Maria sticks to her expectations of her sports coach:

No, it's just important to me. I need to have the sense that things are working for me, and that my coach can see that I'm doing well, and that I'll be able to compete.

Patrick insists and becomes increasingly engaged:

But you know it better than anyone. You just have to believe in yourself! No one can tell how things are going to



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

develop...

As coach of the session, I notice Patrick's engagement, which goes beyond merely reasoning about what was said. He almost seems to want to convince Maria to embrace his own conviction. In order to take the conversation in a new direction I say to him:

Patrick, I can tell that you're very involved in Maria's story. What does that involvement say about you and who you are?

Patrick picks up the ball and runs with it; he starts with a detailed and gripping story about his school days when he was in the fourth grade of primary school. His telling is very open and honest, although this is only the third time we have met. I am surprised at this frank revelation and impressed that he dares to be so open with his classmates:

When I was in the 4th grade, I had a stammer, couldn't read properly, and I was overweight and didn't look too sharp. Not many people believed that I could ever become the person I am today. I didn't really have any support from home, my mother in particular had had a rough childhood, and at a young age I learned to look after myself. I didn't want to trouble her with my problems. For example, if I locked my bike at training and found that I had left the key at home, I would simply carry the bike home. I kept my reading difficulties to myself. I just couldn't bear to burden my parents with it. The same with the stammer: fortunately, there was this speech therapist who said that she could help



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

me with all that. These experiences and the fact that I was able to handle my problems convinced me that I could fend for myself. I came to trust that things would work out for me. I learned that I could rely on myself, so now I think that I can make it if I want to.

There is a moment's silence after this story, which seems to grip everybody in the room. Patrick has impressed me. He seems unafraid that this story might have negative consequences for him and his reputation. Frank, Patrick's best friend, who is sitting right next to him, is the first to break the silence; with admiration in his voice he says:

. . . and I thought I knew you, Patrick. That's pretty intense! It's hard to imagine that you're the same person now as you were then. (We will hear more from Frank later.)

Maria is fairly astonished by Patrick's story. She is sitting across from him, thinking. The story clearly makes an impression on her. After a while she says, astonished:

I can't believe that it was something I said that started all this. You make me think. It's amazing that you were able to keep believing in yourself.

Later, it becomes evident that this event had a profound effect on Maria's relationship with her sports coach, herself and her approach to her training. She actually revisits Patrick's story in the final sessions. Everybody says that their perception of training has changed. In this connection, Maria says:



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

I have a different approach to discipline now. I used to do things because I had to, because the coaches told me to. Now it's self-discipline. I want to do this. When I fail to see the point with something – what the individual training elements are good for – then I ask my coach. Something has happened to me – to us, actually.

## ***Reflection on the case – different views***

In the following I will present reflections on and interpretations of the case: Maria's, Patrick's and those of Frank, one of Patrick's good friends and participant in the same coaching group, and finally my own. In doing so, we will get a rich understanding of the case's impact on the process of the meaning-making of the different parties. What has been the impact of their conversions on the other members of the group? How can I as a reflective practitioner, and on the basis of my theory, expound on what happen in the session between Maria and Patrick?

## ***Maria's reflections: My sport is who I am – it's my lifestyle***

At first, I was actually a little negative about this process. The idea of sharing a lot of stuff about myself, opening up and sharing things that are really personal, I found it hard. But once we got going, I found it kind of interesting. It was interesting to hear how others deal with their problems. In fact, we've begun to talk more in the group, and I started to pay more attention to the others, like if they're having a bad day, or they've done something great, I ask about it. You could say that we've gotten to know each other in a new way.



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

I think it was a good process, because I learned to think about why I do things instead of just doing them. If I train really hard, I stop to think about why it is I'm doing this; it's because I want to be really good at it. Or sometimes in school, I think, why is it I bother to pay attention in class right now, when I could be chatting with the others instead; it's because I want good marks. I was surprised to be able to learn so much about myself, because I thought that I knew myself really well.

The conversations with the other athletes also made a big impression on me. Like the one with Patrick, where I said that my sports coach did not expect me to be able to qualify for the world championship. Patrick told me to stop worrying about what my coach said, and that if I wanted to be in that group, I simply had to train to get in. After that, my training was much better than it used to be, and it just sort of became natural for me to train to get in, so I told him, and he said, 'well, do it, then'. That helped me a little.

Also Laura, who had injured her elbow and needed surgery; she was wondering whether sport was really worth it, because she also wanted to be able to hold a baby of her own one day. That got me thinking, like, 'hey, think about how much time you're spending on this; you really have to want it. Just think about what any other teenager would be doing on a normal Tuesday, and there I am, training again tonight.' That has made me more conscious of why I do certain things. For example, I only eat sweets on Fridays, so all the other days, again I might think, why is it that I'm doing this? It's because I have to do it to excel. I have learned to accept that my sport is not just a sport, it's a lifestyle, and you have to acknowledge that. Before the



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

coaching process I used to think that I would just compete until I didn't enjoy it anymore. But now I think that I'm doing this because I love this lifestyle. But that has its drawbacks too, because when I have a poor training round, sometimes it can feel like my world is coming to an end, because I do spend so much time training.

But all the training, a lot of homework and time pressure sometimes stress me out. In the past I would just say, 'fuck it', and then I would go to bed, pull the blankets over my head, and then I wouldn't come out until I couldn't sleep any longer. After group coaching I am better at dealing with my problems, and I try to solve them by making a plan. I've become more aware of what it is that I want to achieve with my sport. So I think that I can use it to make the whole thing more structured, like, make a plan – where I used to be more of a mess. I didn't have the time to think about how to deal with a particular problem. Now I'm better at approaching my sports coach and saying, 'I have a problem, and I need to find a solution.' I think that's pretty cool – that I'm not afraid to admit it when I have a problem now. It's cool to admit that sometimes you don't have everything under control – and then ask for help. It takes some of the pressure off if you tell others about your problem. If I tell people at training that I'm tired, it's nice, because then they have a basis for understanding why I am the way I am.

It's been great to receive feedback and to hear the others' opinions, because they're all my age, and they do more or less the same as I do, instead of talking to a sports coach. Like, I only used to talk to the two girls, but now I've begun to talk to the boys as well, and got to know them, compared with the others in class, because we know each other in



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

more of a sports context and in a different way. I mean, I've learned more about how the others think when they train, or when they do really well.

*Patrick's reflections: I have been surprised how I could make a difference*

I think the group had a positive influence and helped us to find out what we want – in a way we wouldn't be able to without listening to others. As one says: two minds think better than one. Sometimes one could be quite surprised about some of the conclusions of our conversations, because it has been about you as a person. You could somehow think about how others understand you. So what I want to say is: without the others I would not have been able to open my eyes for some things about myself, but also in regard to life as an athlete in general.

In the process there has been space to speak about what one felt; you could be really honest; we could use each other. That was really good. After we have started to do coaching, four of us started to use each other more on a daily basis. At school we started to talk more about our sport. I think this is what makes sense, also because I feel that I can give something to others; I believe we will continue with that for a long time. For my part it has been super funky to talk with other athletes, because it motivates me to chat about my sports and my life as an athlete. I felt more and more motivated to do my sport every time we met. I had the impression it was similar for the others. I



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

think a lot of others can benefit from it. Sometimes it can be difficult to talk with your parents or some of your other friends who are not involved in sports. It's quite funky to talk to people who know about the same problems you are talking about, and whom you relate to.

I've got something out of the coaching, and could feel that I could help some of the others. The further we got in the process, the more I felt at home. I developed more courage and felt more and more safe. I remember a special situation, where we talked with one of the girls [Maria]. She was irritated about her sports coach, who did not tell her she was a talent. She was afraid whether things would work out for her. So I said to her in the coaching session, that I don't think that way. She should just think for herself, even though there are tons of others who do not regard her as a talent. So I said to her that I got to know the same stuff, and I also had to struggle with that. And I also said to her that she should not fret over what others say, they don't know her. I got a bit excited about that she had to struggle so much with that. And I gave her a long story about different kinds of stuff from my life, and next time she came and said that she really used the things I had said. Also, later people mentioned this episode as a kind of humdinger of an event in regard to how people can benefit from the group. I was actually quite surprised about my own abilities, so to say. I did not expect that I could make a difference.

*Frank's reflections – from the perspective of a participant not directly involved in the dialogue*

From the beginning I only knew one person in the group.



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

Now I talk with them all. I have got to know them both privately and as athletes. Patrick, who I knew beforehand – I also got to know him better now, even though I thought I knew him completely. It has been really nice to be in the group. Every time after a meeting I thought, it's really nice to be there and to be part of it. I am about 10–20 percent happier at present. We have talked about things we usually might not have talked about. We have opened up. There was not too much focus on me. On one occasion we talked about Maria, because she had a bad day. She got to know from her sports coach that she could not do this and that. But Patrick explained to her: 'there should not be anybody who says that you can do it'. I really took it in, although it wasn't me who he talked to. Patrick is really good at finding words for what he feels, and by that, helping other people when they feel stuck with something. It has been really helpful. Some of the others have also been helpful, but especially Patrick, he has been helpful to get us going if one of us had a negative episode. I did not have a negative episode in this phase, but I have listened to what others have said to Maria, and I took it in, and it kept me going. The coaching process helped me to 'open my mind'. I look more open-minded on my training and my goals. I didn't even know that I had goals before we started this process. I became clear that I have actually been goal-focused through the feedback of others. I actually had goals, but hadn't really thought it over.

## *My own personal reflections on the case*

Maria opens with an honest and open but also rather direct and uncompromising statement. Her statement appears to have a strong spontaneous effect on Patrick, who has proved to be an



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

engaged and active participant in the process, also in the two previous coaching sessions. Patrick's statement, however, can be perceived as equally direct and straightforward. Essentially, this clash of two positions may pose problems for a witnessing process, which has a very different purpose from a discussion. In a discussion each party wants to present their best arguments, and use their rhetorical skills to persuade the counterpart and other discussion participants to embrace their point of view. Group coaching and witnessing, on the other hand, have nothing to do with a debate. Witnessing is an invitation to reflect on what is said, based on one's own values and the meaning and consequences that the other person's story might hold for oneself, or the person who told the story. The participants act as a resonance or sounding board for each other. They resonate with each other and enrich the dialogue by offering their own reflections without presenting any assessment or judgement of what the other person said. These reflections focus mainly on values and on the way in which the statement makes sense as viewed from the point of view of one's own life universe. Without much complication, this approach can also be applied in larger meetings: the only requirements are that the person chairing the meeting introduces the procedure carefully and that all the participants accept it.

My comment to Patrick and my follow-up question to him should be understood in this perspective. First, I express my basic appreciation of his contribution and engagement. Next, I express my interest in hearing more from him by asking, 'What does that involvement say about you and who you are?' Here I ask him to shift his perspective from assessment to self-reflection – a reflection in the identity landscape where he is invited to focus on personal values, convictions, aspirations, dreams and wishes that



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

form the foundation of his own self-perception and identity. And Patrick accepts the invitation in a way that surprises all the participants. The intensity and the frankness in Patrick's story and its meaning for him, his self-perception and his fundamental action orientation affect all the participants in the coaching session. Patrick's story describes his most fundamental beliefs. His story becomes a living expression of his identity; an identity that has given him confidence, personal strength and goal direction, and which is ultimately the source of his impressive athletic achievements. The other participants know him in many ways but mainly through his more visible actions and achievements. In his reply to my question he presents a story that not even his closest friend is familiar with. In Patrick's engaging and gripping story, the participants perceive a degree of authenticity that has a contagious effect on all the participants.

Authenticity means being real and being oneself; it reflects a personal experience of one's own stance, attitude and behaviour, which others perceive as directly proportional with their own level of reflection in their experience and appreciation of this state. Thus, the more aware one is of one's feelings and goals in relation to others, the more authentic one can be. This type of authenticity forms the basis of relational attunement, which I consider a prerequisite of developing reflective processes among two or more participants in a co-creative coaching process. Sharing like this creates a reflective learning and developmental space, where new knowledge is co-created, knowledge that is meaningful to the individual and which can be shared with others. The development of this shared reflection space and co-created universe of meaning is a characteristic feature of the witnessing process.



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

## Final practitioner reflections and concluding remarks

Comparing the reflections of the three participants with my own, the differences in their perceptions of the situation is, maybe, the most interesting. As a reflective practitioner I had been quite absorbed to form the dialogue in a specific way, when Patrick presented his position. My focus was on shaping a context for co-creation of meaning-making (Stelter, 2007). Through my way of asking Patrick questions about him, and how Maria's case affected his own way of thinking about himself, I made his position interesting and meaningful for the other participants. The reflections from the three participants make clear how valuable and meaningful Patrick's story has become (in a sense) from their own differing perspectives. Although my intervention can be seen as a basic invitation for Patrick to tell us about himself, the three only retained the essence and the impact of the whole event on their meaning-making in relation to their own lives and career choices. In their memory the situation appeared to be reduced to the core plot of the story 'Believe in yourself!'

I was fascinated by working with these 'kids'. I was fascinated by their open-mindedness to share their lives. When I worked with this coaching research project, my daughter was about the same age as these young athletes. Although I regard myself as a good father, I hardly ever had had a conversation of such existential significance with my own daughter. When I shared these thoughts in one of the coaching groups during the final session the participants could understand me. They said:

If you want to share issues we reflected on here with your parents, they are either worried or they try to make you change your mind. But with you, Reinhard, we can come up



# REFLECTIVE PRACTICE IN TALENT DEVELOPMENT: A NARRATIVE INQUIRY OF A COACHING PSYCHOLOGY INTERVENTION

Excerpted from *Reflective Practice in the Sport and Exercise Sciences*

with anything we want, you are always accepting.

As a group coach, I consider myself as a sharing partner, a fellow-human, in the group. On the other side I have a big responsibility by facilitating the dialogical process and giving voice to different position, by inviting the participants to view things from another perspective, by encouraging them to re-narrate their stories after having listened to the stories of others. The participants learn how their life world unfolds in an increasingly multifaceted and meaningful way. They learn to share their life with others in a way that helps them to sense a common core in their attempt to grow as a talented athlete and human being in general.

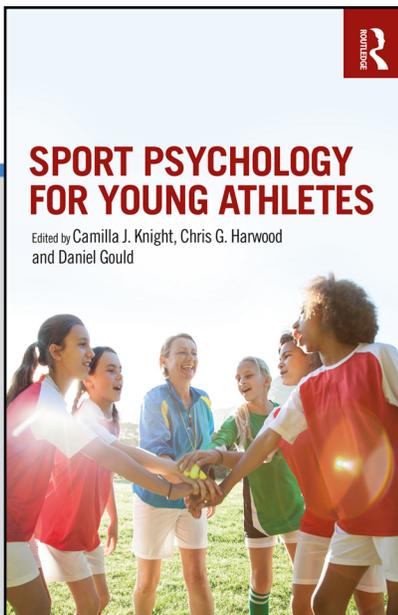
Finally, I would like to broaden the theoretical stance of my coaching psychological intervention by connecting it to sociological and political theory: group coaching as a narrative-collaborative practice becomes a forum where participants feel empowered and develop a personal strength that is based on the development of social capital (Bourdieu, 1983; Putnam, 2000), a form of social coherence, built up by a social network created on the basis of every single coaching session. This approach can be used in many different contexts with young participants with social challenges, to adults trying to improve a healthy lifestyle to patients in their process of recovering from serious illness.



CHAPTER

3

# STRESS, COPING AND EMOTION IN YOUTH SPORT



This chapter is excerpted from

*Sport Psychology for Young Athletes*

Edited by Camilla J. Knight, Chris G. Harwood and  
Daniel Gould.

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# STRESS, COPING AND EMOTION IN YOUTH SPORT

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Millions of adolescents are involved in organised competitive sport throughout the world. Competitive sport, by its very nature, imposes many threats and challenges on these young people. There are many sources of stress, including high training demands, injury and fear of injury, interpersonal conflict with coaches, teammates, officials, and opponents, parental and coach pressure to perform, personal performance expectations, performance errors, poor equipment and training facilities, an over-emphasis on winning, sport organisation politics, as well as conflict between sport and other social and academic goals (Crocker, Tamminen, & Gaudreau, 2014; Nicholls & Polman, 2007). Also we must not lose sight of the fact that adolescence is a period characterised by physical and cognitive maturation, changing social roles and obligations, increased curiosity about and involvement in romantic relationships, growing peer relationships, and increasing independence from parental control (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Seiffge-Krenke, 2011) (see Chapters 4 and 5). These events result in many conflicts with social and personal goals that activate a range of positive and negative cognitions, emotions, and behaviours. Thus, effective stress and emotional regulation skills are necessary if the adolescent athlete is to successfully manage the many challenges thrown their way.

The purpose of this chapter is to provide an overview of the current knowledge about the importance of the stress, emotion, and coping process in adolescent athletes. In the first section we will focus on theoretical and conceptual issues that underpin research, intervention, and best practices in facilitating successful adaptation in competitive sport. We cover select research that examines questions related to how athletes cope, the effectiveness of coping skills interventions, and the role of



# STRESS, COPING AND EMOTION IN YOUTH SPORT

Excerpted from *Sport Psychology for Young Athletes*

parents and significant others in shaping how adolescent athletes cope. In the second section we present a case study of an athlete, Marcella, to illustrate how to translate research into practice.

## Stress, coping, and emotion

### *Conceptual foundations*

Sport research over the last 30 years investigating stress, coping, and emotion has emphasised a cognitive-evaluation viewpoint (Vallerand & Blanchard, 2000). A prominent theoretical framework is Richard Lazarus' cognitive-motivational-relational (CMR) theory (Lazarus, 1999, 2000; Nicholls & Thelwell, 2010). Lazarus (2000) argued that stress is an unfolding and dynamic transactional process between the athlete and the situation. CMR theory holds that an adolescent athlete will appraise athletic demands in relation to their potential impact on personal and social goals and values. Athletes may perceive situations as threatening, harmful, challenging, or beneficial. Another aspect of appraisal is deciding what can be done to manage the demands (coping options). The evaluation of demands and coping options will generate emotions and influence attempted actions (coping) to change the situation and/or regulate emotional responses.

As adolescent athletes achieve or are thwarted in their pursuit of important goals, they will experience a range of emotions. Emotions are a complex psycho-neuro-physiological reaction and represent a critical feature of the stress process that motivate and regulate cognitions, physiology, action tendencies, and behaviours (Lazarus, 1999). Emotions can be considered in two categories: primary emotions and self-conscious emotions. Primary or basic emotions are thought to represent those states



# STRESS, COPING AND EMOTION IN YOUTH SPORT

Excerpted from *Sport Psychology for Young Athletes*

that were largely shaped by evolution, and have specific neural, expressive, and physiological mechanisms and responses (Ekman & Cordaro, 2011). Basic emotions often include fear, happiness/joy, sadness, anger, surprise, anxiety, and disgust (see Crocker, 2015). In contrast, self-conscious emotions are dependent on self-awareness and require more elaborate cognitive processing than basic emotions. Common self-conscious emotions present in sport are pride, shame, guilt, envy, jealousy, and embarrassment (see Sabiston & Castonguay, 2015). Overall, both basic and self-conscious emotions need to be regulated to help adolescent athletes achieve successful functioning in demanding sport environments because emotions can have an impact on performance and social functioning (Hanin, 2000).

An example of how emotions are generated and influence the experiences of adolescent athletes is the case of fear. Fear is a common emotion in situations that are potentially dangerous. Years ago the first author worked with high-performance youth gymnasts. One gymnast had a bad fall while performing a backflip on the balance beam but she did not sustain any serious injuries. In subsequent training attempts on the beam the athlete could not initiate the skill. She stated that she knew she had the physical skill but she was so afraid of falling. Fear was evident in her face. Her pupils were dilated, respiration rate was high, and she was shaking; when she stepped off the beam it was soaking wet where she was standing. She wanted to do any other gymnastic skill except the backflip on beam. This example captures many of the key features of the stress and emotion process. The fall triggered the realisation that there was a real physical risk and threat to her personal physical wellbeing. Going back on the beam and being required to attempt the skill automatically generated fear appraisals, producing prototypical facial expressions as well as



# STRESS, COPING AND EMOTION IN YOUTH SPORT

Excerpted from *Sport Psychology for Young Athletes*

the neural-physiological reactions and action tendencies associated with fear. The athlete also considered her coping options, such as disengaging from the task. Such instances of emotional reactions are not uncommon in competitive sport and highlight the need to help adolescent athletes regulate such emotions and develop effective stress and emotion management skills.

If young athletes are to effectively manage the stressful demands of competitive sport then they must develop, modify, or enhance various coping and emotion regulation skills (Crocker et al., 2015). Many different types of automatic and controlled processes can be used in emotional regulation. A central process that is extensively studied in sport is coping (Uphill & Jones, 2012). Coping refers to a conscious, effortful process that involves cognitive and behaviour responses used to regulate not only emotions but also cognitions, behaviour, and the environment during stressful transactions (Lazarus, 2000). Although not extensively studied in sport, it is thought that developmental changes in adolescence will result in a shift towards a greater use of cognitive strategies by middle adolescence, ages 15 to 18 years (Holt, Hoar, & Fraser, 2005). This is likely due to maturation of cognitive systems and social cognitive skills such as increased use and organisation of abstract thinking and perspective taking (Seiffge-Krenke, 2011). Developmental maturation should increase the likelihood that older adolescents will more effectively handle the stressful demands of competitive sport (Nicholls, Perry, Jones, Morley, & Carson, 2013).

There are numerous coping strategies that adolescent athletes use in a purposeful goal-directed manner to manage stress. These strategies include, but are not restricted to, increasing effort, seeking social support, avoidance, cognitive reappraisal,



# STRESS, COPING AND EMOTION IN YOUTH SPORT

Excerpted from *Sport Psychology for Young Athletes*

distraction, imagery, wishful thinking, changing tactics, confrontation, arousal control, breathing control, suppression of thoughts, and planning (see Crocker et al., 2015; Nicholls & Polman, 2007). Given the large number of potential specific coping strategies, researchers have attempted to classify these strategies into more macro-analytic categories. Although these classification systems vary widely, in sport research there are three common systems. The most dominant classification includes problem-focused, emotion-focused, and avoidance coping (Lazarus, 1999; Crocker et al., 2015). Problem-focused coping functions to change the environmental demands and/or the response of the athlete; emotion-focused coping functions to regulate emotional distress; and avoidance coping involves attempts to remove oneself mentally or physically from the stressful situation. A second popular classification is a three-dimensional model proposed by Gaudreau and Blondin (2004), who proposed task-oriented coping (strategies that deal with situation and cognitions/emotions associated with the stress process), disengagement-oriented coping (avoidance and active withdrawal strategies), and distraction-oriented coping (focusing on information unrelated to the stressful situation).

What makes the study of stress and coping in adolescent athletes so challenging is that there are countless specific strategies that can be used in each stressful encounter. It is apparent that all of these strategies may not be adaptive over extended periods of time; yet athletes may use any of these strategies to either change a troubled athlete–person environment or modify the emotional experience. For example, a swimmer may avoid thinking about a poor race to reduce the distress associated with failing to achieve an important achievement goal. Although this strategy may provide temporary relief, it is likely to be maladaptive over the



# STRESS, COPING AND EMOTION IN YOUTH SPORT

Excerpted from *Sport Psychology for Young Athletes*

long term because the athlete fails to learn from the experience and may neglect to develop effective strategies to enhance race performance. Even strategies that intuitively appear to be adaptive may be maladaptive in some cases. For example, many athletes report increasing effort to deal with performance difficulties. However, changing individual or team tactics might be the better option in some situations. Athletes are often able to anticipate upcoming stressors and can engage in anticipatory coping such as planning ahead, time management, increasing effort, or prioritising tasks and goals (see McDonough et al., 2013; Tamminen & Holt, 2010). These strategies might not be effective if something unexpected occurs.

Coping can also be studied from a team-based perspective. Communal coping (Lyons, Mickelson, Sullivan, & Coyne, 1998) requires that the team members believe that they must act together to manage a stressor, act to communicate strategies, and work together for the overall team benefit (see Tamminen & Gaudreau, 2014). Another form of team-based coping is extrinsic emotional regulation that deals with how athletes regulate their own and others' emotions (Tamminen & Crocker, 2013). An athlete's emotional expressions and reactions are likely to impact team-mates' (and opponents') emotions and behaviours; coaches' emotional reactions are also likely to directly impact the emotions and performance of their athletes. Being aware of how emotional reactions influence others can lead to the thoughtful regulation of one's own emotional displays to facilitate team performance and social functioning (Tamminen & Crocker, 2013).

As adolescence is a period of development where athletes face increasing demands in their personal and competitive lives, researchers have examined changes in the stressors and coping that young athletes report across brief competitive periods



# STRESS, COPING AND EMOTION IN YOUTH SPORT

Excerpted from *Sport Psychology for Young Athletes*

(Nicholls, 2007) and across an entire competitive season (McDonough et al., 2013; Tamminen & Holt, 2010). This research indicates that stressors and coping fluctuate over time and in conjunction with important competitive periods. Researchers have also found that coping in sport is associated with the developmental status of athletes, such that older adolescent athletes with greater conscientiousness and greater emotional maturity use more task-oriented coping in sport (Nicholls et al., 2013; Nicholls, Levy, & Perry, 2015). These differences in coping likely reflect increases in adolescents' cognitive capacity for coping and increases in the diversity of coping strategies.

The research literature shows clear relationships between coping, emotions, and wellbeing in adolescent athletes. Researchers have shown that coping skills training can help adolescent athletes manage stress. For example, Crocker, Alderman, and Smith (1988) found that an eight-week coping skills programme reduced negative thoughts to a video-taped performance stressor and led to increased service reception performance in high-performance Under 19 volleyball players. Nicholls (2007) also described a coping training programme with an adolescent international golfer that educated the athlete about coping strategies and developing awareness about effective and ineffective coping strategies. The athlete perceived the programme improved coping in competition. Another study of a six-session experiential training programme intervention demonstrated significant improvements in the coping self-efficacy, positive affect, and overall happiness of rugby athletes during their transition from high school to university (Laureano, Grobbelaar, & Nienaber, 2014).

Understanding the role of important others such as coaches and parents can help us understand how athletes learn to cope more



# STRESS, COPING AND EMOTION IN YOUTH SPORT

Excerpted from *Sport Psychology for Young Athletes*

effectively with stressors in sport. Tamminen and Holt (2012) reported that athletes learned about effective coping in sport through trial and error and by reflecting on their past coping attempts. Parents and coaches supported athletes' learning about coping by establishing a supportive relationship with the athlete, prompting athletes to think about ways of coping with stressors, questioning and reminding athletes about past coping efforts, initiating informal conversations about coping, and by sharing their own experiences with the athlete. This research highlights the value of improving social relationships between athletes, coaches, and parents as a means to helping athletes deal with stress and enjoy more positive sport experiences (see Chapters 10, 18, 19, and 27 for further details).

The importance of parental support, pressure, and the socialisation of coping among youth athletes was revealed in a recent study by Tamminen, McEwen, and Crocker (2016). Parents' socialisation of task-oriented or engagement coping (e.g. providing explicit instructions about using engagement coping strategies to deal with sport stressors) was associated with athletes' use of engagement coping. Disengagement coping, on the other hand, was associated with athletes' perceptions of parental pressure, and negatively associated with perceptions of parental support. Furthermore, athletes with the lowest disengagement coping scores reported high parental support and their parents also reported low socialisation of disengagement coping. Clearly parental behaviour has a major impact on how adolescent athletes manage stressful sport events.

Coaches also play an important role in helping athletes deal with stressors in sport (Tamminen & Holt, 2012). Athletes' perceptions of coach autonomy support are associated with task-oriented coping and goal achievement, while perceptions of unsupportive



# STRESS, COPING AND EMOTION IN YOUTH SPORT

Excerpted from *Sport Psychology for Young Athletes*

coaching are associated with the use of disengagement-oriented coping (Nicolas, Gaudreau, & Franche, 2011). Chapter 19 provides more evidence of the importance of supportive behaviours by coaches in the lives of adolescent athletes. Thus, emphasising supportive coach and parental behaviours in helping athletes cope with stressors in sport will improve the sport experiences of young athletes.

## Application of research in practice

To illustrate the complexity of the stress and coping process in youth sport, we provide the experiences of an elite high school soccer player named Marcella. This case study is based on the first author's experiences with several athletes who have experienced very similar stress experiences. Following the case study, we discuss some intervention strategies that could have helped Marcella effectively manage stress and provide suggestions for practitioners working with adolescent athletes.

### *Case study*

Marcella is a 17-year-old high school senior who plays soccer at an elite level on an age-graded team of 16 to 18 year olds. Marcella's coaches have told her that she has a shot at a university varsity sport scholarship if she continues to work on developing her skills. This means a lot to Marcella; if she does not get a scholarship, she might not be able to attend university. Marcella's parents are pushing her to train hard so she gets a scholarship. They insist that she put in extra hours of training so that she can better impress the scouts who come watch her play. They continuously remind her that she needs to outplay her teammates



# STRESS, COPING AND EMOTION IN YOUTH SPORT

Excerpted from *Sport Psychology for Young Athletes*

to show that she is the best. Marcella has mixed feelings about all this pressure. At one level she feels like she would rather play soccer for fun, but at another level she does not want to let her parents down and miss the chance to go to university. She often feels overwhelmed and anxious about these goals. Her parents notice that Marcella does not seem to be acting like herself, but she brushes them off and tells them she is fine.

Because of her skill level, Marcella's coaches have assigned her to be the team captain for the season. When she suggests to them that she might not be ready for this role, they tell her that she will experience challenges, but that this is ok and they will help her deal with these difficulties. Marcella is ambivalent; she is excited to take on this new challenge, but fears that she will let her coaches down. Marcella lacks confidence in her ability to be a captain and fears some teammates do not respect her. There have been several conflicts with teammates; when this happened, Marcella broke down, started crying, and left practice. Marcella tried talking to her teammates to make amends, but they were not receptive. Since then, she has been extra cheerful at practice in hopes that her teammates will respond positively. She also tries to avoid her teammates outside of practice and games when possible. The pressure causes her to ruminate often, get distracted at school, and she frequently wakes up in the middle of the night. Marcella does not know what she should do, so she distracts herself by keeping busy and training harder.

From our experiences, Marcella's case is not that unusual in elite sport. Many athletes face multiple stressors related to performance, role, and social expectations. In Marcella's case there are several interrelated environmental stressors coupled with her lack of effective coping skills that prevent her from effectively managing the stress process. She is feeling great



# STRESS, COPING AND EMOTION IN YOUTH SPORT

Excerpted from *Sport Psychology for Young Athletes*

pressure to get a scholarship and this pressure is compounded by her role as a captain. Clearly she is evaluating these pressures as being very threatening. In addition, there are a number of social relationships (with parents, coaches, and teammates) that are appraised as threatening. Overall, the coping strategies she is using are primarily avoidance in nature and are not effective.

## ***Intervention strategies***

Based on our experiences with similar cases, we provide some suggestions that can help athletes like Marcella deal with these performance and social stressors. Clearly Marcella is having difficulties in managing dysfunctional thoughts and emotions. We have developed an intervention for her guided by the cognitive-motivational-relational framework (Lazarus, 2000) as well as the empirical literature on effective stress management strategies in sport (Crocker et al., 2015; Rumbold, Fletcher & Daniels, 2012). The first step in the intervention would be to educate Marcella about the transactional stress, emotion, and coping process. This psycho-education component involves educating her about the general factors (appraisal, coping, and emotion) in terms that she can understand and are directly relevant to her situation. For example, explaining that stress is a process that involves physiological (e.g. increases in arousal, muscle tension), psychological (e.g. perceptions of threat, negative rumination, changes in confidence), emotional (e.g. anxiety, guilt), and behavioural (e.g. avoidance, trying too hard) components. It is helpful to normalise her reactions, emphasising that her stress reactions are typical in difficult sport situations (Meichenbaum, 2007). Having Marcella recognise how her thoughts and coping responses impact her personal stress process



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is a critical step in enabling her to develop awareness of the (in)effective coping strategies she has employed, allowing her to think about how she might proceed in the future when similar stressors reoccur.

Marcella would need to develop new and enhanced coping and emotion regulation strategies (see Rumbold et al., 2012). This consists of developing problem and emotion-focused coping strategies that would be most effective. For example, to help her cope with the goal of obtaining a university sport scholarship, Marcella could practice goal-setting to manage her emotions (Burton & Weiss, 2008). She could develop new challenging yet realistic short-term and process-oriented goals for practices and competitions (e.g. increasing shooting accuracy from 15–20 metres by 20 per cent over the next month by improving technical skill), which would allow her to more effectively focus on her training efforts. This form of goal-setting will help her gain control over her actions and focus on what needs to be done. Removing a focus that is solely on an outcome (e.g. getting the scholarship) can result in less performance pressure.

To reduce the stress associated with the captaincy role, the coaches might provide some education and reading materials about being an effective captain. The National Federation of State High School Association in the US, for example, offer a free online course to provide leadership training for high school sport captains (<https://nfhslearn.com/courses/61028/captains-course>). Marcella could also develop specific coping skills such as self-talk, imagery, and arousal control (see Rumbold et al., 2012). For example, Marcella could keep track of how she speaks to herself when facing challenges pertaining to being the captain of the team, followed by attempts to reframe negative self-talk to neutral and positive instructional and motivational self-talk. Using



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imagery skills, she could imagine scenarios in which she would successfully lead her teammates in a practice drill or even have everyday conversations with them. To manage the anxiety she experiences, which often leads to negative thoughts and behaviours, Marcella could also practise arousal regulation techniques such as breathing exercises and progressive muscle relaxation. Collectively, these coping strategies could help Marcella effectively manage her stressors.

A third step of the intervention could include sessions with Marcella's parents and coaches with the aim of educating them about the stressors often faced by adolescent athletes, as well as on the role they could play in modelling effective coping behaviours (Nicolas, Gaudreau, & Franche, 2011; Tamminen & Holt, 2012). Especially important would be getting these significant others to reduce the frequency they talk about the importance of earning a scholarship while simultaneously reducing uncertainty about doing so, as importance and uncertainty have been found to be two key sources of stress for young athletes (Gould, Horn, & Spreemann, 1983; Martens, 1987). Educating significant others is often a difficult step as it involves the cooperation of coaches and parents, and also involves the consent of Marcella. From our experiences, involving parents and coaches is an important step in successful interventions. Her parents and coaches could be guided in how to initiate informal conversations with Marcella where they could provide her with the opportunity to discuss the challenges she is facing, ask her how she has coped with stressors in the past and whether these strategies have been (un)helpful, and to suggest ways in which she can think about coping. Depending on the social dynamics and cooperation of coaches, it might also be possible to work with the team to learn how to use communal coping strategies to deal with



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team-level stressors. This can help reduce the pressure on Marcella and also increase the performance and social functioning of the team.

Collectively, the coping skills learnt by Marcella, her parents, and coaches should provide Marcella with an opportunity to learn how to effectively deal with stressors in (and outside) the sport domain. It is likely that Marcella's coping efforts will change and develop over time as a result of her ongoing personal and skill development and thus the learning of coping skills will need to be continuous (see Nicholls et al., 2013).

## Conclusion

This chapter has provided an overview of some of the main theories and current research on stress, emotion, and coping among adolescent athletes. It is important for practitioners, coaches, and parents to remember that adolescence is a time of learning and development, and that adolescent athletes are being confronted with a number of new situations and stressors as they begin competing at higher levels, as they train and compete with new teammates and coaches, and as they face more intense competition demands. These stressors will generate different types of basic and self-conscious emotions that will impact performance, social functioning, and wellbeing; thus athletes need to develop effective stress and emotion regulation strategies. Athletes should try to use a variety of coping strategies to deal with the pressures they face in sport, some of which will be effective, while others will not be, depending on the situational demands. It is important that athletes are supported in trying new coping strategies and that they are able to reflect on their coping efforts to develop an awareness about what coping



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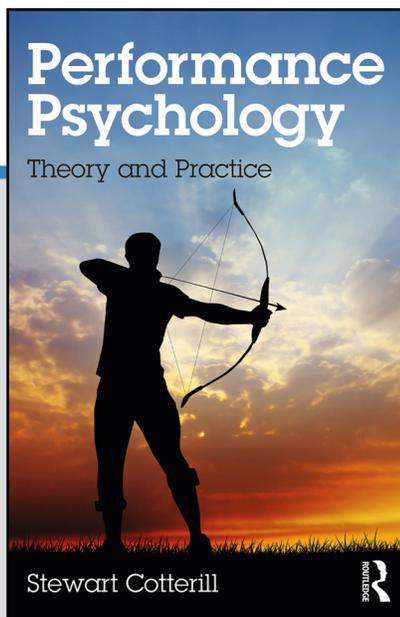
strategies are effective for them in dealing with stress. Helping athletes to reflect and develop awareness of their coping abilities can ultimately lead to better coping and emotional regulation, better performance and goal achievement, and importantly, happier and healthier athletes.



CHAPTER

4

# PSYCHOLOGICAL STRATEGIES TO ENHANCE PERFORMANCE UNDER PRESSURE



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*[Performance Psychology: Theory and Practice*  
by Stewart Cotterill.

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# PSYCHOLOGICAL STRATEGIES TO ENHANCE PERFORMANCE UNDER PRESSURE

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## Introduction

While there are many performance-focused interventions that are used by sport and performance psychologists in practice, evidence suggests a key set of skills that can help to underpin performance. These skills ideally should be embedded in development programmes to ensure they are as well developed as the motor skills ultimately underpinning performance. The structured approach adopted to the development of these skills is referred to as psychological skills training, and the systematic development of relevant psychological skills has been associated with enhanced performance outcomes (Behncke, 2004; Birrer & Morgan, 2010).

This chapter will explore what mental skills training is and considers the evidence supporting the development of imagery, cognitive restructuring, self-talk, relaxation techniques, goal setting, and concentration/focusing strategies.

### ***Psychological skills training***

Psychological skills training (PST) refers to the systematic and consistent practice of mental or psychological skills for the purpose of enhancing performance, increasing enjoyment, or achieving greater sport and physical activity self-satisfaction (Weinberg & Gould, 2007, p. 250). Based on this perspective, PST should be developed in a systematic, goal-oriented, planned, controlled, and evaluated manner (Seiler & Stock, 1994). Some authors (Seiler & Stock, 1994; Vealey, 2007) who have focused on PST have differentiated between psychological skills as the desired outcome (e.g. increased self-confidence and enhanced attentional focus) and psychological methods or techniques (e.g.



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imagery and self-talk) as the means to promote the desired outcomes through the systematic application of these techniques. Research across a number of domains has shown that psychological skills training can be effective in enhancing the individual's performance and positively influencing cognitive and affective states (Williams & Krane, 2001).

In the last two decades, a variety of specific intervention techniques have been promoted to help performers develop psychological skills to enhance their performance (Weinberg & Williams, 2001). Employing a combination of intervention techniques has been shown to be particularly effective in sports including: tennis (Daw & Burton, 1994), cricket (Spittle & Morris, 1997), and gymnastics (Kazemi, Khaberi, & Farokhi, 2003).

A range of specific psychological skills have been cited in a range of studies as having the potential to mediate the effect that performing under pressure can have on the individual performer including: imagery, cognitive restructuring, self-talk, relaxation techniques, goal setting, and focusing/concentration.

## ***Imagery***

Imagery is one of the most popular psychological skill techniques utilized by performers and coaches/mentors to enhance performance. The frequent use of imagery has been reported to be a characteristic of those most successful performers in the domain of sport (Cumming & Williams, 2013; Martin, Moritz, & Hall, 1999). It has been described as an experience that reflects actual experience in a variety of senses (e.g. sight, taste, sound) without experiencing the real thing (White & Hardy, 1998). Holmes and Calmels (2008) in seeking to further clarify the concept defined imagery as a top-down, knowledge-driven



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process involving the generation or regeneration of parts of a brain representation or neural network. They further explain that imagery is primarily under the conscious control of the individual. This allows individuals to experience or re-experience situations in their mind by retrieving information from long-term memory (Cumming & Williams, 2013).

Imagery ability is defined as “an individual’s capability of forming vivid, controllable images and retaining them for sufficient time to effect the desired imagery rehearsal” (Morris, Spittle, & Watt, 2005, p. 60). Hall (1998) explained that everyone has the ability to generate an image, but this may differ between individuals in terms of vividness, controllability, kinesthetic feelings, ease, and emotional experience. Studies confirm that imagery abilities are not universal across individuals and patterns of activation move from the frontal area to more posterior parts of the brain in good imagers (Debarnot, Sperduti, Di Rienzo, & Guillot, 2014). Individuals may have varying capacities to generate images depending on imagery mode (Goss, Hall, Buckolz, & Fishburne, 1986; Guillot et al., 2009) and/or perspective (Williams et al., 2012). Studies have also shown that mental imagery is an ability that improves with practice, and, as initially proposed by Paivio (1985) it is a function of experience interacting with genetic (biological) variability (i.e. physiological differences among individuals and within the same individual overtime).

Motor imagery can be described as the mental execution of a movement without any overt movement or muscle activation (Lotze & Halsband, 2006). Several studies have reported improvements in performance with motor imagery practice (Feltz & Landers, 1983; Holmes & Calmels, 2008; Murphy, 1994; Stevens & Stoykov, 2003).



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Within performance domains, the two main (but not the only) modalities of movement imagery that performers use to enhance performance outcomes are visual and kinaesthetic. Visual imagery involves seeing the movement and can be experienced from two different perspectives: external and internal. External visual imagery involves watching yourself perform the movement as if from another person's point of view. Whereas, internal visual imagery involves viewing the movement through your own eyes as if actually performing the movement (Morris et al., 2005). Kinaesthetic imagery refers to imaging the feelings and sensations associated with the movement. Although internal, external, and kinaesthetic imagery have been identified as separate constructs (Roberts, Callow, Hardy, Markland, & Bringer, 2008; Williams et al., 2012), combining visual and kinaesthetic imagery is thought to be most beneficial for enhancing performance (Williams et al., 2012).

## ***Cognitive restructuring***

This technique refers to a structured, collaborative therapeutic approach in which distressed individuals are taught how to identify, evaluate, and modify the faulty thoughts, evaluations, and beliefs that are considered responsible for their psychological disturbance (Dobson & Dozois, 2010; Hollon & Dimidjian, 2009).

Cognitive restructuring techniques have been applied across a broad range of contexts and have been shown to reduce depression (Marcotte, 1997); increase self-esteem (Schilder, 2002); and reduce anxiety (Sud, 1993). Cognitive restructuring is a useful method for controlling symptoms of depression (and anxiety) and is based on the premise that what causes these feelings is not the situation itself but, rather, the interpretation of



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the situation. So, by changing the interpretation of the system the individual can then influence their associated thoughts and behaviours. Indeed, Meyers, Whelan, and Murphy (1996) highlighted the effectiveness of cognitive restructuring in enabling sports performers to achieve higher levels of performance.

Burns (1989) outlined a six-step process to implementing cognitive restructuring. First, to identify the problematic or upsetting situation. Second, to record the associated negative feelings. Third, record your automatic thoughts. Fourth, to analyse these thoughts. Fifth, to construct realistic and balanced thoughts. Sixth, to evaluate this restructuring process.

## ***Self-talk***

Self-talk techniques are based on the use of specific verbal cues that aim to facilitate learning and enhancing performance, through the activation of appropriate responses. Such techniques have been implemented in a variety of motor and performance tasks ranging from fine (Van Raalte et al., 1995) to gross (Hamilton, Scott, & MacDougall, 2007). A recent meta-analysis (Hatzigeorgiadis, Zourbanos, Galanis, & Theodorakis, 2011) more emphatically stressed the effectiveness of self-talk interventions in sport. An overall effect size of 0.48 was identified, indicating that self-talk can meaningfully facilitate learning and enhance performance in sport tasks.

Hardy and colleagues (2009) proposed a conceptual framework that theorized the factors believed to underpin the self-talk–performance relationship. Adopting a throughput perspective, the authors argued that self-talk improves motor skill



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execution via four possible mechanisms (cognitive, motivational, behavioural, and affective). Cognitive mechanisms were described as encompassing informational processing and attentional control. Performers have reported using self-talk for a variety of attention-based outcomes (e.g. concentration; Chroni, Perkos, & Theodorakis, 2007), and in addition, experimental studies have indicated that manipulating self-talk may be a useful adjunct strategy to alter attentional foci (Bell & Hardy, 2009) and decrease interfering thoughts (Hatzigeorgiadis, Theodorakis, & Zourbanos, 2004). Motivational mechanisms relate to a focus on self-efficacy (Bandura, 1997) and persistence or long-term goal commitment. Self-talk use has been associated with persistence and subsequent higher performance on challenging tasks (Chiu & Alexander, 2000).

Behaviour mechanisms refer to the direct impact of self-talk on behaviour. Researchers have identified improvements in both subjectively and objectively assessed technique resulting from self-talk (Anderson, Vogel, & Albrecht, 1999; Edwards, Tod, & McGuigan, 2008). It has also been suggested that during early phases of skill learning, novices may 'talk' themselves through movements (Coker & Fischman, 2010; Fitts & Posner, 1967). Affective mechanisms relate to the potential impact that affect can have on performance. A number of studies have highlighted a link between cognitive content and affect (e.g. Beck, 1976; Lazarus, 1991), and in turn, affect and performance (e.g. Beedie et al., 2000). Evidence suggests that self-talk may also serve to increase self-confidence in performers (Johnson, Hrycaiko, Johnson, & Hallas, 2004; Landin & Hebert, 1999; Perkos, Theodorakis, & Chroni, 2002).



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## ***Relaxation techniques***

Relaxation techniques can be divided into two specific categories: muscle to mind, and mind to muscle. Muscles to mind techniques include breathing exercises and Jacobson's progressive muscular relaxation approach. Mind to muscle techniques include meditation, autogenic approaches, and imagery approaches, each of which is unique, but also have the same effect on physiological variables in the body (Alwan, Zakaria, Rahim, Hamid, & Fuad, 2013). Procedures like progressive muscular relaxation, autogenic training, imagery, and meditation seek to decrease oxygen consumption, heart rate, and respiration (Cox, 2007; Dusek et al., 2008; Stefano, Fricchione, Slingsby, & Benson, 2001). Described as the 'gold standard' of relaxation techniques (Weinberg, 2010a), progressive muscle relaxation seems best suited to self-paced activities where there are natural breaks in performance. Davidson and Schwartz's (1976) matching hypothesis reinforces the appropriateness of such a technique to address the muscular tension and increased heart rate that can be present in pressured environments. The major criticisms of progressive muscle relaxation have predominantly focused on the technique's lack of utility in a performance environment (Balague, 2005; Morris & Thomas, 1995). However, this criticism is perhaps a little superficial as once the technique is well learnt, performers should be able to scan their bodies for feelings of tension and subsequently relax specific muscles (Batey & Symes, 2016).

## ***Goal setting***

Goal setting has been advocated as "a highly consistent and a robust performance enhancement strategy" (Burton & Naylor, 2002, p. 463). Research suggests that goal setting is particularly



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effective in enhancing performance and positively affecting behaviour when focusing on a combination of outcome, performance, and process goals (Filby, Maynard, & Graydon, 1999; Gould, 2001). There is evidence that goal setting can be highly effective in influencing behaviour, motivation, and performance. Indeed a number of meta-analyses in the psychology literature (Burton, Naylor, & Holliday, 2001; Kyllö & Landers, 1995) have consistently reported strong to moderate effects of goal-setting use on overall performance. Goal setting is particularly effective as it influences performance in four distinct ways. First, goals direct attention to important elements of the skills and tasks being performed. Second, goals prolong the efforts of the individual and team. Third, goals prolong player and team persistence. Finally, goals foster the development of new learning and problem-solving strategies (Weinberg & Gould, 2007).

Within the goal-setting literature there are generally two main classifications of goals. First, goals are either classified as being outcome, performance, or process focused. Second, goals are referred to as being short-term or long-term. Outcome goals focus on the ultimate outcomes linked to a positive performance, and are in the main, focused on winning. Unfortunately achieving this type of goal is not necessarily within the performer's control as the outcome also depends on a range of environmental factors, including the performance of others. Performance goals are linked to the explicit performance of individual performers. Process goals are usually focused on how a particular skill is executed. This type of goal is equally useful in both practice and the performance domain. There is evidence to suggest that using a combination of goal strategies (outcome, performance, and process goals) can produce significantly better results than just relying on one type of goal (Filby et al., 1999). As well as the three



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different types of goals outlined above, there is also a distinction drawn between short-term and long-term goals. Long-term goals are seen as ultimate goals. For Olympic athletes it could be winning a medal at the next Olympics in four years' time. Short-term goals are more immediate and provide the stepping-stones for achieving the long-term goals. Burton (1992) made reference to a goal-setting 'staircase' with the short-term goals helping you to climb closer to the ultimate long-term goals. A successful performer should set a mixture of both short-term and long-term goals to be most effective. Indeed, research has revealed that both short-term and long-term goals are needed to maintain motivation and performance in the long-term (Weinberg, Butt, & Knight, 2001).

Research across performance domains has clearly demonstrated that just setting goals alone does not necessarily ensure improvements in performance or productivity. Instead, it is recognized that certain principles need to be followed to maximize the effectiveness of the goals that may have been set. Weinberg (2010b) highlighted the following findings from a range of performance-related goal-setting research in seeking how to be most effective in using goal setting to enhance performance:

- Performance is enhanced when goals are moderately difficult and challenging, but also realistic.
- Goal setting can help to provide a focus for both the teams and the individual team members.
- Motivation and commitment are higher if the team accepts the set goals.
- Goals, and feedback relating to these goals, produce better performances than just setting goals.



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- Barriers to goal achievement are usually categorized as physical, psychological, or external.
- Goals should be prioritized (either order of importance or preference).
- Performance and process goals should be emphasized the most.
- A number of factors negatively affect goal achievement including time pressure, stress, tiredness, and social relationships.
- Both short-term and long-term goals are important.

A number of sources within the broader psychology literature advocate the SMART approach to goal setting (Bull, Albinson, & Shambrook, 1996), referring to effective goals as being specific (S), measurable (M), action-related (A), realistic (R), and timetabled (T). Possibly the most important, and often overlooked, aspect of goal setting is the evaluation and re-evaluation of progress and achievement. This evaluation allows current progress to be monitored and for changes to be made if required, maximizing the potential for the goal(s) to be realized.

## ***Concentration/focusing***

Concentration is an attentional process that involves the ability to focus on the task at hand while ignoring a range of competing stimuli (distractions). Cognitive research has consistently the importance of concentration and shows that it is vital in any field of skilled performance (Moran, 2012). According to Wulf (2007) and Wulf, Shea, and Lewthwaite (2010), the accuracy and quality of skilled actions depend significantly on what the performer focuses on while executing their skills.



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Concentration/focusing strategies are another core component of many psychological skills development programmes. The general rationale here is that distractions should be kept to a minimum or eliminated with only relevant information allowed into the performer's attentional space (Kimiecik & Jackson, 2002).

It is important where possible to adopt a positive rather than a negative strategy in this regard. Examples of negatively focusing strategies include the notion of 'thought stopping', a process of stopping negative thoughts and replacing them with positive ones. While a number of authors have advocated this approach (Sheard & Golby, 2006; Zinsser et al., 2006) it is very difficult to do. So, instead of focusing on what not to get distracted by performers should focus on what to concentrate on. A subtle but important difference. That said it is still important to understand the sources of distraction, which in turn can help to foster effective concentration strategies. Many attentional researchers (e.g. Johnston & Dark, 1986) distinguish between 'external' (data-driven or bottom-up) and 'internal' (concept-driven or top-down) processes. The former involve sensory activity while the latter entail cognitive processing (Howe, Warm, & Dember, 1995). 'External' distractions are described as stimuli from the environment, which diverts the performer's attention away from its intended direction. Typical distractors in this category include (i) visual distraction, (ii) noise, (iii) weather and playing conditions, and (iv) the behaviour and tactics of opponents. Indeed, Dalloway (1993) suggested mastery over thoughts, fears and worries (i.e. internal noise) frequently poses a greater challenge than overcoming external distractions. Moran (1996) in his 'losing concentration in sport' chapter highlighted five aspects to internal distraction, these are: (i) regrets, (ii) fortune telling, (iii) inadequate motivation, (iv) fatigue, and (v) anxiety.



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In order to counter these distractions Kremer and Moran (2008) highlighted five key principles for effective concentration: decide to concentrate (it won't just happen); focus on one thought at a time; do exactly what you are thinking; focus only on factors you can control; and focus outward when you get nervous. A range of practical strategies have been developed to improve the performer's ability to concentrate including: pre-performance routines (for further detail see Chapter 3); trigger words (a form of self-talk); visualization (imagery); goal setting, and simulation training. Simulation training (i.e. practising under conditions that replicate key aspects of an impending challenge) has been suggested to help skilled performers to concentrate (Moran, 2012) more effectively in the real performance domain.

## **Summary**

While specific situations often demand individualized psychological solutions the development and implementation of the broad strategies and techniques in this chapter can go a long way to ensuring performers are well prepared to cope with the challenges that their specific performance domain holds. As with the development of motor skills these psychological skills need to be developed and practised on a regular basis to ensure that they are well learnt and almost habitual in their deployment. Environments that are designed to help foster the performers of the future should seek to embed the development and understanding of these key psychological skills to ensure future performers are as well prepared as they can be to cope with the challenges they will face.



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## Study Questions

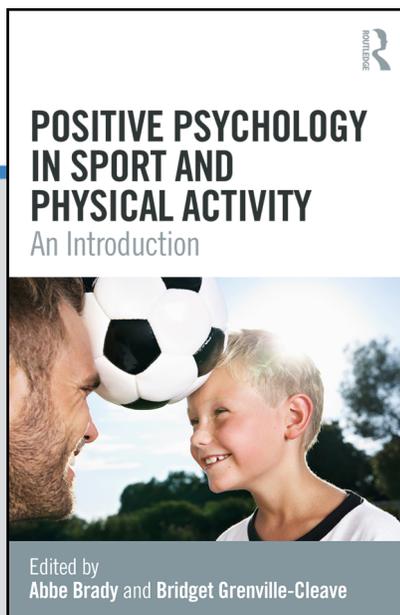
1. To what extent do you believe the key psychological skills should be embedded in performance development environments?
2. What factors could limit the effectiveness or application of imagery-focused interventions in a wider context?
3. While many individuals are aware of the importance of effective goal-setting practice is still variable. What factors impact upon the application of goal-setting theory for performance?



CHAPTER

5

# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY



This chapter is excerpted from

*Positive Psychology in Sport and Physical Activity: An Introduction*

Edited by Abbe Brady and Bridget Grenville-Cleave.

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## Introduction

Sport and many physical activities (PA) are renowned for being designed to extend the adaptive efforts and capacities required of participants and engagement in these activities has been recognised as a facilitator of adaptation and resilience in individuals (Hefferon & Boniwell, 2011). However, some situations in sport and PA can be perceived as threatening or harmful (e.g. injury, making a weight, dehumanising culture, defeat, deselection or an unrelenting win at all costs ethos) and may require considerable resiliency and resourcefulness (Kavanagh & Brady, 2014; Sagar, Laval-lee, & Spray, 2009; Theberge, 2008). Recent research has shown that experiences of stress and adversity in sport and life have the potential to be rich developmental opportunities if they are carefully managed (Collins & McNamara, 2012; Sarkar, Fletcher, & Brown, 2015). Whether in elite sport, school, the park or the gym, resilience has particular value for understanding how participants may withstand or bounce back or even thrive when facing the inevitable challenges associated with the physical, mental and social demands of their activity as well as in life.

This chapter outlines the key concepts associated with fixed and growth mindsets and the consequences of holding such beliefs for resilience. This chapter frames the discussion using key resilience concepts proposed by Yates, Tyrell, and Masten (2015). Examples are used to illustrate how having a particular mindset across sport and physical activity-related situations can yield quite divergent responses to our experiences of adversity, challenges, failure and success, with stark consequences for resilience and also for learning, motivation and well-being. Considerations for practice are presented to be applicable for a range of contexts in sport and



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PA. Techniques and interventions to support the development of growth mindset and resilience are offered, and recommendations are presented for future research and practice.

## **Introduction to the concept of resilience**

Psychological resilience is defined in various ways relating in some way to how a person withstands and/or responds to pressure. At a broad level, Masten, Best, and Garmezy (1990, p.436) define resilience as 'the process of, capacity for or outcome of successful adaptation despite challenging or threatening circumstances', and focusing on a capacity account, Hefferon and Boniwell (2011, p. 115) define resilience as 'the flexibility in response to changing situational demands, and the ability to bounce back from negative emotional experiences'. In the sport literature, Fletcher and Sarkar (2016) distinguish between robust resilience (maintaining well-being and performance) and rebound resilience (regaining well-being and performance).

Resilience is best viewed as a complex process when the person's dynamic adaptive systems (developed within the person, through their relationships and their environment) work effectively to maintain or restore the person's competence and functioning (Masten, 2007). One of the fundamental adaptive systems underlying resilient adaptation relates to mastery-motivational systems (Yates, Egeland, & Sroufe, 2003). Dweck's mindset theory contributes to our understanding of mastery-motivational adaptation and as such it has particular value because it can aid understanding about the important constructs and mechanisms related to resilience. Importantly, when viewed as a process we are invited to recognise, we can develop resilience intentionally through particular activities as well as through reflecting on one's



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accumulating life experiences.

Particular personal characteristics and skills have been recognised as assets facilitating the resiliency process such as, realistic optimism, conscientiousness, extra-version, empathy, confidence, self-esteem, connecting with others, emotional and arousal regulation, attentional control, accurate causal analysis, problem-solving skills and self-awareness (Jackson & Watkin, 2004; Fletcher & Sarkar, 2016; Yates & Masten, 2004). In stressful situations, positive emotions contribute to the ability to achieve effective emotion regulation (e.g. more rapid recovery of indices of cardiovascular and negative emotional arousal), and positive emotions also help by supporting the finding of constructive meaning from the adversity (Tugade & Fredrickson, 2004). These processes reflect how positive emotions help in the moment by encouraging a broader thinking which contributes to problem-solving and over time, this contributes to the person's personal resources by expanding his or her thought action-repertoire (Fredrickson, 2001).

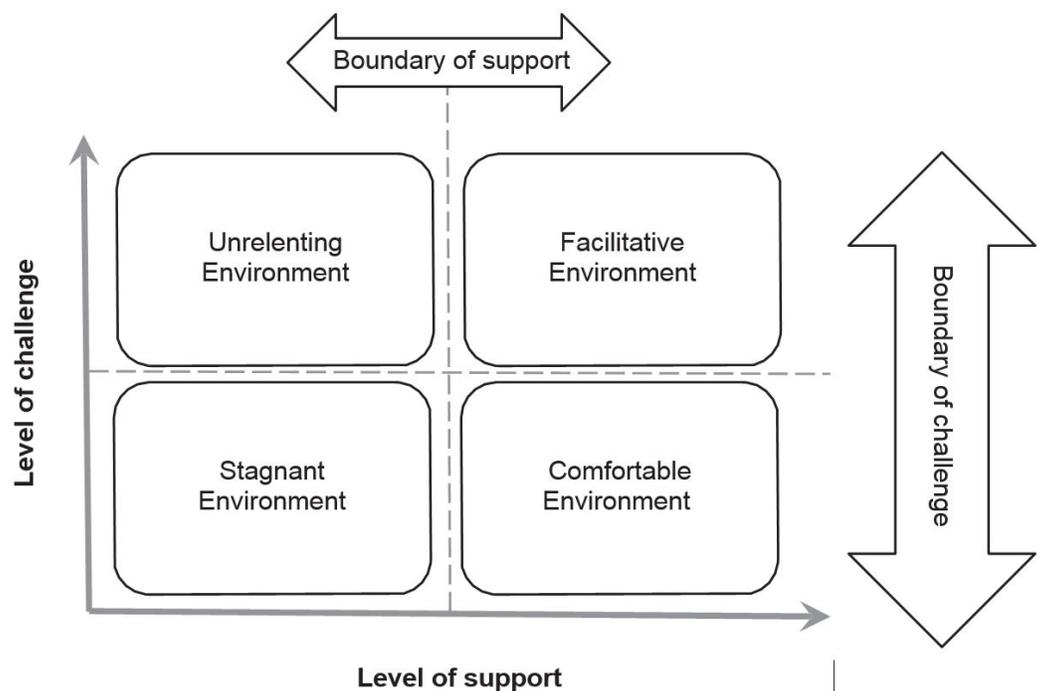
Crust and Clough (2011) suggest that the inevitable setbacks and failures that naturally occur in sport and high-investment activities should be the source of growth through reflective learning and development. Naturally occurring life events and artificially generated challenging times can both offer unique developmental opportunities if they are carefully supported and cultivated for growth (Collins & McNamara, 2012). Fletcher and Sarkar (2016) present a helpful way of identifying environments that may be more or less conducive to cultivating resilience through their 2 × 2 challenge-support matrix (Figure 8.1). A facilitative environment is characterised by an appropriate amount of support over time for the level of challenge presented, and it is proposed that most resilience is developed in this



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environment. Importantly, these environments should not be framed by rigid or static boundaries but consciously cultivated and adapted to meet the particular needs of participants in the given context at the time.



**FIGURE 8.1** A challenge-support matrix for describing environments which may influence the development of resilience

Source: Adapted from Fletcher and Sarkar (2016)

## ***Mindsets – contemporary research and key findings***

The concept of *mindset* is acknowledged by many leading positive psychologists as making an important contribution toward understanding human achievement behaviors (Biswas-Diener, 2010; Hefferon & Boniwell, 2011). Stanford University Professor



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

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Carol Dweck describes a person's mindset as the implicit beliefs about the stability or malleability of personal attributes and behaviors (Dweck, 1999). Implicit beliefs about ability form a crucial element of many other major motivation theories (Li & Lee, 2004). Beliefs about ability and how to achieve success, in turn, can have stark consequences for a person's resilience as well as their aspirations, motivation, the learning strategies they adopt and the enjoyment and satisfaction they experience, both in the short term and long term (Dweck & Leggett, 1988; Dweck, 2006; Yeager & Dweck, 2012). A good example of how beliefs influence our achievements is reflected in how, once the myth of the four-minute mile had been broken, a flurry of other runners also soon achieved that feat.

Research supports the existence of two distinct frameworks of implicit belief viewpoints known as *entity* or *incremental self-theories* (Dweck, 1999). In achievement situations, people are presented as theorists with tacit alignment to one of these positions. Entity theorists (those with a fixed mindset) believe that their ability and attributes are largely innate and relatively stable over time regardless of environment or personal factors. By contrast, incremental theorists (those with a growth mindset) believe that their ability and attributes are relatively malleable and can be developed through both contextual factors such as the environment and feedback, and personal factors such as learning and effort (Dweck, 2006; Jowett & Spray, 2013).

Findings across diverse contexts show repeated distinctions and adaptive or maladaptive consequences associated with fixed and growth mindset beliefs about the malleability or static nature of many personal attributes such as intelligence, personality, parenting, musicality, artistic ability, mathematical or linguistic ability, relationships, sporting ability, social skills and creativity



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

Excerpted from *Positive Psychology in Sport and Physical Activity*

(Dweck, 2017).

Existing research in sport and PA settings have found that a growth mindset predicts or is positively associated with positive affect, higher self-efficacy and enjoyment of physical activity, skill acquisition, performance, task orientation, interest and persistence (Biddle, Wang, Chatzisarantis, & Spray, 2003; Jourden, Bandura, & Banfield, 1991; Kasimatis, Miller, & Marcussen, 1996; Van Yperen & Duda, 1999).

Research in sport settings has found the coexistence of fixed and growth mind-sets, as well as different antecedents of acquirable and stable abilities which stemmed from personal factors and also from layers of socio-cultural factors within the sport environment (Jowett & Spray, 2013; Slater, Spray, & Smith, 2012). Olympic hopefuls noted that to be successful an element of talent is preferable; however, all placed more emphasis on the need to work hard through practice and learning to acquire the physical and psychological attributes needed for success (Jowett & Spray, 2013). These aspirant athletes also found ways of reframing setbacks such as injury or deselection, and they held the view that the 'adversity was teaching them the vital skills and attributes needed for their psychological development within the sport' (ibid, p. 152).

Though they recognised the malleable nature of many sport abilities and the capacity to build on talent, Olympic hopefuls also identified the fixed nature of some sport abilities based on physiological factors (e.g. fast twitch fibers in sprinters) (ibid). Research with cricket coaches and players showed how people can hold different mindset-related beliefs about different aspects of the game, with both groups believing that technical and physical attributes were malleable but that psychological and



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

Excerpted from *Positive Psychology in Sport and Physical Activity*

tactical skills were far less amenable to change (Frith & Sykes, 2016). Chase, Galli, Myers, and Machida (2008) examined the mindset beliefs of high school coaches and found that whilst most coaching abilities were viewed as learned rather than innate, game strategy ability was considered more innate than learned. These findings support the coexistence of entity and incremental beliefs and that particular sport/coaching abilities may be viewed as more or less malleable, according to the sport and context. Such findings have implications for how coaches and teachers may approach designing developmental opportunities.

Chase (2010) proposed that coach education and leadership training should focus on helping coaches and leaders develop a growth mindset about their leadership abilities rather than trying to find an elusive formula for leadership. Similarly, Wang and Koh (2006) recommended that for effective physical education (PE) teaching, pre-service training for PE teachers should include information about the importance of PE for promoting autonomy, mastery climate and incremental beliefs. Based on a review of literature and with the aim of facilitating positive motivational, behavioral and affective outcomes for young participants, Vella, Cliff, Okely, Weintraub and Robinson (2014) proposed a model of instructional strategies to promote incremental beliefs in youth sport based on six key areas of theoretical development, that is, focus on effort and persistence, appropriate challenge, value of failure, perceptions of success, promotion of learning and high expectations.

Drawing from basic mindset ideas (Dweck, 1999) and using generalised physical ability as an example, an adolescent exhibiting an entity belief (fixed mindset) about physical ability holds the belief that it is a relatively static ability with little or no propensity for growth and so s/he perceives they have limited



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

Excerpted from *Positive Psychology in Sport and Physical Activity*

control over developing this aspect of the self. This may result in the view that investing effort is futile (if physical ability cannot be changed) and instead s/he might accept that they have a set level of ability. This may impact on motivation and behavior in challenging achievement situations such as a PE lesson or competition (which s/he may not enjoy) as s/he may not try so hard or give up easily and ignore feedback opportunities because trying is pointless. Instead s/he may focus on trying to coast, which may require avoiding challenges, criticism and situations which may expose or threaten perceived physical competence. The limited meaningful engagement in the session and with feedback and information may reduce learning opportunities which may, in turn, affect competency development which may be used to confirm a lack of ability.

By comparison, an adolescent adopting an incremental belief (growth mindset) about physical ability believes it is a malleable attribute which fosters motivation and behavioral tendencies characterised by commitment to goals, persistence in the face of obstacles, pursuing challenges, identifying effort as necessary to the path of mastery, embracing feedback, learning from criticism and finding inspiration from the success of others (Dweck, 2017). The development of a growth mindset fosters a more constructive attitude toward practice, learning and making mistakes which are conducive to developing and maintaining resilience (Jowett & Spray, 2013). When participants are encouraged to view important abilities as those that can be developed over time with effort, appropriate strategies and support, they are more likely to be resilient when they encounter tough challenges in that setting (Yeager & Dweck, 2012).

In an experimental test of mindset theory in sport, Spray, Wang, Biddle, Chatzisarantis, and Warburton (2006) found that whilst



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

Excerpted from *Positive Psychology in Sport and Physical Activity*

incremental beliefs supported mindset theorisation, there seemed to be less evidence for the maladaptive effects of entity beliefs. They proposed in some conditions (e.g. when coexisting high incremental beliefs offset the effect) entity beliefs are not universally maladaptive, and may for some people, in some contexts, lead to adaptive outcomes.

A concern associated with mindset theory is that its ideas are applied too rigidly and so it is important to appreciate the following points:

- Mindset theory is not stating 'everyone can be anything' because there are many factors that contribute to someone realizing their potential in sport and physical activity; however, without a growth mindset, achieving one's potential is less likely (Frith & Sykes, 2016, p. 51).
- Findings from sport research show that people can hold both types of belief and that these can be evoked in different ways by personal or environmental factors (Slater et al., 2012; Jowett & Spray, 2013).
- *False growth mindset* is a relatively new phenomenon, and Dweck (2017) relates it to misunderstandings about mindset theory in four key areas:
  - mindset is wrongly self-ascribed as if it is an enduring trait rather than a process of believing and acting in a manner consistent with a growth mindset;
  - the assumption that it is all about effort and praising effort – when actually it is about appreciating the process involving hard work, trying new strategies and seeking input from others. Also problematic is praising effort as a consolation when there is no learning, when it's more important to find out why there was no learning;



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

Excerpted from *Positive Psychology in Sport and Physical Activity*

- suggesting that 'anyone can do anything' without also framing this and helping them to gain the skills and resources to progress towards their goal;
- labelling someone (especially children) as having a fixed (or a growth) mindset and blaming this for their lack of learning or engagement.

Research from neuroscience about the brain's plasticity has provided evidence for the value of engaging in challenging learning activities for its impact on brain activity and adaptation, and this has been highly effective at supporting engagement with ideas about mindsets through initiatives such as Brainology (Dweck, 2017). The brain's capacity for development can also become a focus for intentional shaping and various activities such as mindfulness and cognitive reframing, and other mental skills have been found to be effective in inducing changes in the brain and enhancing resilience (Davidson & Schuyler, 2015).

There are a number of ways that mindsets may serve to enhance or compromise resilience, and drawing on core constructs central to understanding resilience proposed by Yates et al. (2015) we describe some key ideas as follows:

- Having a growth mindset is likely to be an important protective factor supporting resilience if the person believes that s/he can develop resilience. Conversely, believing that resilience is a relatively stable trait not amenable to much meaningful development may be a *vulnerability* moderator of resilience in times of stress if one perceives him/herself to be lacking this trait.
- A growth mindset is closely linked to resilience through the central theme of facilitating *competence* and *adaptivity*. A



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

Excerpted from *Positive Psychology in Sport and Physical Activity*

growth mindset supports adaptivity because it reflects the belief that the person can develop competency and thus it encourages effortful engagement and openness to learning which, in turn, increases exposure to opportunities to participate and gain information about the quality and nature of one's performance.

- *Competence* and *adaptivity* are further achieved via a growth mindset through helping the person see challenges, setbacks and failures as problems to be solved rather than as evidence of incompetence and a signal to give up or withdraw (Molden & Dweck, 2006). Compared to those with a fixed mindset, those with a growth mindset coped more effectively with setbacks and were more likely to attribute failures to flexible factors within their control (e.g. low effort or attention), rather than more global judgements of ability (Hong, Chiu, Dweck, Lin, & Wan, 1999). Similarly, when responding to failure, those with growth mindset orientations were less defensive and were more proactive in using effective strategies (Blackwell, Trzesniewski, & Dweck, 2007).
- Adopting a growth mindset is likely to support the development of particular personal and interpersonal *assets* such as self-awareness, realistic optimism, problem-solving and accurate causal analysis developed through experience and knowledge gained by actively pursuing self-referenced improvement goals for learning. Through reflection the person is likely to have a good sense of themselves, the situation and their progress in relation to goals and attributions at the time.
- In situations that are characterised by uncertainty, criticism or failure, a fixed mindset may become a *risk* factor or a



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

Excerpted from *Positive Psychology in Sport and Physical Activity*

source of *vulnerability* since, to preserve an image of oneself as talented or competent performers, the person may ignore discrepant or unfavourable feedback or remove him-or herself from situations in which s/he might fail or risk looking incompetent. This may encourage a self-imposed 'comfort zone' (i.e. a stagnant or comfortable personal development environment) through which they trigger a causation of experiencing less challenge and adaptation, thereby gaining less learning-related information, with implications for future goal-setting and perceived ability judgements.

- Linked to the *assets* of self-awareness, realistic optimism and a belief in the value of effort in overcoming challenges, those with a growth mindset are less likely to be thrown off course by setbacks and because they are more likely to reframe the situation by viewing it as offering something developmentally meaningful, see the situation as a challenge and persist (Jowett & Spray, 2013).
- Intentionally viewing a stressful situation as a challenge (as opposed to a threat) may be a helpful *protective strategy* adopted to overcome a particular setback and may also encourage more positive emotions associated with constructively framed goals and attributions about the challenge.
- In achievement situations, a *risk* factor for those with fixed mindsets concerns how goals may relate to proving ability and achieving validation in the present. By comparison, the way those with growth mindsets frame goals may be viewed as an *asset* because they focus on improving abilities for the future and can thus encourage the person to be more patient linked to a meaningful self-referenced development



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

Excerpted from *Positive Psychology in Sport and Physical Activity*

goal (Sevinver, Kluge, & Oettingen, 2014).

Beliefs and behaviours associated with a growth mindset	Key concepts in learning and development	Beliefs and behaviours associated with a fixed mindset
With effort, good strategies and help, people can change and develop most qualities and abilities	<b>Success</b>	People's qualities and abilities are largely predetermined, inherited and/or unchangeable once developed
Doing one's best; trying hard Learning and improving Many types of success	<b>Motivation</b>	Establishing superiority with least effort Being gifted or a natural Success as winning
Sees the bigger picture Is patient; sees progress in steps Uses self-referenced goals	<b>Challenges</b>	Wants immediate results Seeks quick fixes Compares self to others
Relishes challenge Seeks hard but realistic tasks	<b>Effort</b>	Avoids challenge if risky Seeks easier or unrealistic tasks
Sees effort as investment (effort essential for learning and achievement)	<b>Obstacles</b>	Not cool to show effort (effort needed by those struggling to achieve)
Persists and finds new ways Engages in problem-solving	<b>Criticism</b>	Demotivated, lose focus, may feel or act helpless
Views criticism as valuable feedback	<b>Failure</b>	Ignores, disputes or denigrates criticism
Informative; a wake-up call Stimulates constructive reflection Can be motivating	<b>Successes of others</b>	Threat to self-esteem and identity Prolonged anger, despair, blame May lead to withdrawal
Draws inspiration and ideas from others' successes	<b>Resilience</b>	Feels threatened or demoralised by the successes of others
Regains composure and rebounds from setbacks Can maintain robustness during uncertain periods	<b>Support-seeking</b>	Struggles to retain composure and rebound from setbacks Struggles to maintain robustness during tough times
Actively asks for advice/help Looks to build network, gains insights and learns from others	<b>Openness to experience</b>	Uncomfortable asking for help May remain isolated or hide uncertainty/confusion
More open to experience/new ideas because of beliefs that people can change and find learning and insights from many situations		Less inclined to be open to experience/new ideas because one's predetermined capacities have dictated what can be learned and how

**FIGURE 8.2** Characteristic beliefs and behaviours associated with a fixed or growth mindset linked to key concepts in learning and development in sport and physical activity

Source: Adapted from Brady and Hughes (2013)



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

Excerpted from *Positive Psychology in Sport and Physical Activity*

## Techniques and interventions to support resilience through a growth mindsets

Jackson and Watkin (2004) distinguish between strategies that build enduring protective resources and those that are real-time resilience or 'fast skills' to use during stressful situations. What follows in Table 8.1 are some suggestions for activities to support the development of enduring and also the real time resilience and growth mindset beliefs.

**TABLE 8.1** Strategies for promoting growth mindset, adaptation and resilience in sport and physical activity

1. Develop self-awareness of mindsets because recognizing it in yourself is an important first step in appreciating that we all have tendencies to adopt different mindset-related behaviors in particular situations. Identifying when and why you tend to be growth or fixed mindset oriented can be very helpful for getting a realistic appreciation about the prevalence of fixed mindset mentalities in us all.
2. Recognizing the coexistence of entity and incremental beliefs about different physical, psychological, technical and tactical aspects of athletic and coaching performance, consider identifying what aspects of performance are viewed as most and least amenable to change. See Frith and Sykes (2016) *The Growth Mindset Coaching Kit* for a range of great resources to help promote growth mindset potential.
3. Raise self-awareness and provide access to information about; mindsets, resilience as a process that can be developed, brain plasticity and potential to adapt in response to learning challenges and training to develop



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

Excerpted from *Positive Psychology in Sport and Physical Activity*

personal skills to support resilience. Consider using Dweck's (2006, 2017) Brainology resources and also access the brain scan images showing how learned skills result in changed brain morphology and activity patterns e.g. as demonstrated with musicians and taxi drivers. Maybe engagement with particular sports or physical activities are also associated with particular areas of brain activity and development.

4. Promote engagement in activities that support brain activity associated with resilience e.g. mindfulness and cognitive reframing.
5. Hone the mental skills needed to deal with negative emotions and stressors in the moment through the 3D activity- Distract Distance Dispute. These support resilience by shifting thinking away from the adverse event (distracting), metaphorically stepping back from the immediacy of a stressful situation or event to gain perspective (distancing), and then using a more balanced frame of mind to use reflective self-questioning about the adverse event and finding alternative ways of viewing the situation (disputing).
6. Identify context appropriate activities through which to promote positive emotions to a, buffer/offset the impact of negative stressors, b, to encourage better problem-solving and creativity and c, for problem-setting and the design of activities that offer the right amount and sequence of stretch for adaptation and support.
7. Develop your own bank of evidence, by reflecting on times when you have overcome a difficult period, bounced back from a tough or pressured situation.
8. Acknowledge and praise the efforts of yourself and others



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

Excerpted from *Positive Psychology in Sport and Physical Activity*

- to stretch themselves through trying new or more challenging strategies.
9. To develop a growth mindset achievement climate use Vella et al.'s (2014) model of instructional strategies i.e. focus on effort and persistence; appropriate challenge; value of failure; perceptions of success, promote learning and high expectations.
  10. Emphasize the importance of self-referenced learning goals rather than outcome goals.
  11. Encourage opportunities to reflect on experiences to make learning and progress visible and acknowledged.
  12. Encourage participants to share ideas, learn from others, seek social support and also become problem-setters as well as problem-solvers.
  13. Practitioners to model desired behaviors including being aware of how language and behaviors will convey beliefs about mindset, adaptation and resilience.
  14. Carefully consider the ways in which challenge is cultivated and support is provided (particularly when things seem tough) with a view to creating a suitably flexible facilitative environment

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Notwithstanding the risk of oversimplifying the vast array of rigorous and sometimes complex and contentious evidence bases for mindset research, sometimes it is helpful to have a seemingly simple aide memoire to hand. So as a helpful resource drawn from mindset-based research, Figure 8.2 illustrates some of the distinctions proposed to characterize fixed and growth mindset responses in achievement contexts such as in sport and PA.



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

Excerpted from *Positive Psychology in Sport and Physical Activity*

## Conclusion

Research examining how perceptions of resilience may be constrained or enabled by athletes, exercisers and coaches and trainers with particular mindset orientations may provide valuable insights for context-specific interventions. Similarly, following the example of Dweck and her colleagues, rigorously examining the impact of various mindset interventions on adaptive behaviors and well-being are important avenues for future research in sport and PA. Specific areas ripe for inquiry include examining how coaches'/trainers' beliefs about ability and about resilience affect their own coaching behaviors and well-being and the experience and well-being of their participants. There is potential also to examine the dyadic and collective contagion effect associated with mindset and resilience beliefs between various leader-followers and also in peer groups among practitioners and athletes/exercisers.

What we believe is possible for us to achieve in any particular life domain has considerable influence on how we think, feel and act in the present, how we interpret the past and how we may form ideas about our possible futures. Believing one is capable of developing in a particular activity may encourage greater investment and connectedness with the activity and its community, more openness to learning, more enjoyment and heightened adherence. In addition, in the face of setbacks and adversity, believing in one's abilities may be reflected in greater resilience through focused problem-solving, persistence, effective adaptation and also seeing the adversity as meaningful. Given the potential impact of mindsets to either broaden or constrain a person's beliefs about ability, with consequences for adaptive behavior and the development of resilience, it is



# RESILIENCE AND GROWTH MINDSET IN SPORT AND PHYSICAL ACTIVITY

Excerpted from *Positive Psychology in Sport and Physical Activity*

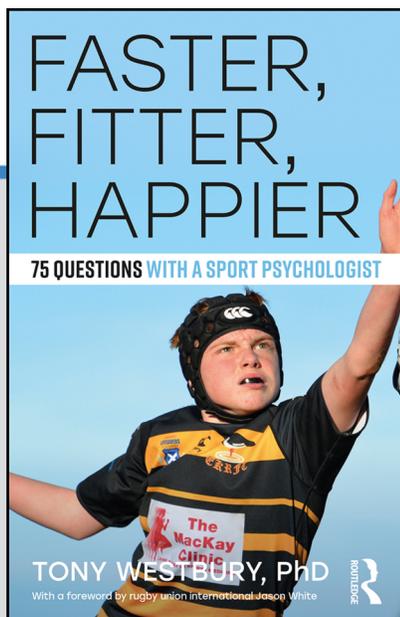
imperative that as practitioners in sport and physical activity we consider how to model and facilitate growth mindset behaviors and suitably challenging and supportive environments.



CHAPTER

6

# CAN SPORT PSYCHOLOGY STOP ME BEING SICK WITH NERVES BEFORE I PLAY?



This chapter is excerpted from

*Faster, Fitter, Happier: 75 Questions With A Sport Psychologist*

by Tony Westbury.

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# CAN SPORT PSYCHOLOGY STOP ME BEING SICK WITH NERVES BEFORE I PERFORM?

Excerpted from *Faster, Fitter, Happier*

You can practise the sport – it's more difficult to practise the emotion. There are few areas of life where the control of emotion can have such a profound effect on whether you achieve your goals as sport. At the highest level of performance, where individuals and teams are well matched for fitness and skill, the ability to harness positive emotions and regulate negative ones often becomes the deciding factor.

Tuesday 7 July 2014, Belo Horizonte.

Brazil's footballers are playing in the semi-final of the World Cup. Expectations are high. The proud soccer nation demands success. The euphoria and pride of being the World Cup host quickly turned to shock, guilt and shame as the German team systematically dismantled them, scoring five unanswered goals in the first half-hour. Germany eventually won the game 7–1. The team were humiliated and as a country Brazil entered a state of national despair. What had gone wrong? How could this collection of the world's finest players, playing in their home country, have failed so dismally?

They also had on their staff a sport psychologist, Regina Brandão, a professor from the São Judas Tadeu University in São Paulo. Her role was to help the players relax and remain focused in the highly pressured environment of the world's highest-profile football competition. However, even in the lead-up to the semi-final, there were signs that emotional cracks were appearing. In the quarter-final penalty shoot-out three players were seen in tears even before any spot kicks were taken. The team captain Thiago Silva declined to take one of the penalty kicks. This lack of emotional control was noted in the Brazilian press. Antero Greco



# CAN SPORT PSYCHOLOGY STOP ME BEING SICK WITH NERVES BEFORE I PERFORM?

Excerpted from *Faster, Fitter, Happier*

wrote: 'I see a team that is visibly nervous, I see a team that is tense, I see a team that is a bit desperate'. Another Brazilian sport psychologist, John Ricardo Cozac, was quoted that in the build-up to the semi-final that the team had 'demonstrated a dangerous lack of emotional control'.

That's sport. It has happened countless times before and will happen countless times in the future. The psychological skill of regulating emotion, of thriving under pressure, becomes the deciding factor in competition.

This story looks like a failure for sport psychology. The Brazilian team psychologist was employed to help players manage their emotions: did she fail or did the team fail? Or is it just more evidence that emotional control is perhaps the biggest challenge in sport performance?

People playing sport, at every level, experience a degree of emotional engagement it is difficult to reproduce in any other context. It is certainly extremely difficult to create such levels of engagement in laboratory settings, where psychologists do their research. However, because we are unable to produce the levels of emotional engagement in the 'clean and controlled' environment of the laboratory, it makes it very difficult to determine exactly how heightened emotion impacts on our thinking and ultimately on our behaviour.

The majority of this book so far has placed a great emphasis on the role that our thinking has on performance. In this chapter I will turn the focus on to feelings and emotions, positive and negative, and look at how what we feel can change our behaviour. The nature of emotion has been a key question for psychologists for over a century, and just like the problems we encountered in defining motivation in the previous chapter, despite all this attention there



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is no real consensus as to what emotion is and how it should be defined.

Pragmatically it is useful to view emotion in the following way:

- Emotions:
  - are feelings which sometimes are difficult to describe verbally
  - are in reaction to some event or situation
  - are subjectively experienced – two people experiencing the same event may experience different emotions
  - alter physiological functioning
  - can alter behaviour, i.e. make us play better or worse.

This summary gives us some clues as to why the study of emotion in sport is so important. Challenging situations may be viewed differently by different people. One player in a big event may experience positive emotions such as excitement, whilst another on the same team experiences negative ones, such as fear. Coupled with the fact that emotion has the potential to help us play better or completely undermine us, this shows us that we should not overlook the impact that emotion can have on both our experience of sport and our readiness to perform to our potential.

## How do thoughts and feelings fit together?

Psychologists are often prone to separate the three facets of their discipline – thinking, feeling and behaving. It is usually done in order to simplify the question they are looking at, but there is a danger of looking at them in isolation and consequently offering overly simplistic explanations. A line of theory which aimed to



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show how thinking and feeling fit together was developed by Richard Lazarus (1991) in his cognitive-motivational-relational theory (CMRT).

In his approach Lazarus identified 15 core emotions (Table 4.1).

**Table 4.1 Themes in core emotions and their application to sport**

<i>Core emotion</i>	<i>Theme</i>	<i>Example of provoking situation</i>
<b>Anger</b>	A physical or psychological offence against me or those close to me	An incorrect decision by a match official
<b>Anxiety</b>	Facing an uncertain threat	Nervousness in anticipation of performance
<b>Fear</b>	Facing an immediate danger	Standing at the top of an icy Black run
<b>Guilt</b>	Having broken a moral rule	Retaliated to foul play by an opponent
<b>Shame</b>	Having failed to live up to an ideal	Having failed when expected to succeed
<b>Sadness</b>	Having experienced a significant personal loss	Losing place in starting team ahead of key game
<b>Envy</b>	Wanting what someone else has	Looking at resources another club has to support players
<b>Jealousy</b>	Resenting another person for loss or threat	Losing players to a rival club that can offer greater incentives
<b>Disgust</b>	Taking in or being close to an unacceptable or unpleasant idea	Reaction to discovery of illegal performance-enhancing drug use
<b>Happiness</b>	Making progress towards the achievement of a goal	Satisfaction at block of high-quality training completed
<b>Pride</b>	Enhancement of one's feeling of self through taking credit for an achievement	Coach approval of consistently high levels of commitment
<b>Relief</b>	Conditions have changed for the better	Discovery that an injury is not as serious as imagined
<b>Hope</b>	Fearing the worst but yearning for the best	Emotions at key moments, such as penalty shoot-out
<b>Love</b>	Desiring or giving unconditional affection	Close trusting and respectful relationship with team mates
<b>Compassion</b>	Being moved by the plight of others	Team mate injured leading up to major competition

Adapted from Lazarus (1991)



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It is important to recognize that humans are very complex emotionally. It is unlikely that one emotion is experienced at a time. We weave complex patterns of emotions, some of which may contradict each other. However, at any point in time, there is a dominant emotion. On to this canvas more transient moods may be projected.

## **What causes me to feel a negative emotion rather than a positive one?**

There is considerable debate about the ordering of what causes what in terms of thinking, feeling and behaviour. Some theorists argue that it is the emotion that prompts the thought. Lazarus directly opposes this in identifying the thought processes which generate emotion. He has skilfully integrated existing knowledge on two thinking processes, cognitive appraisal and coping, to present an explanation as to how emotions are generated and regulated.

Cognitive appraisal is viewed as a two-step process: primary appraisals determine whether a situation or event is viewed to be important in terms of achievement goals. If it is viewed to be important, a secondary appraisal is conducted where individuals assess their ability to cope – do they have the skills, are they able to regulate their emotions and maintain control and also to appraise the costs or benefits of the outcome? Lazarus suggests that the emotional response, positive or negative, is based on this process of thinking. Simplistically, If I believe I can execute the skills and there is a personal benefit to me for doing so, then my emotional response is more likely to be a positive excitement. If on the other hand I am confident that I won't be able to perform to the expectations of myself or others, or will not be able to maintain



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composure in performance, then the emotional response is more likely to be negative. This of course assumes that the process is a rational and unbiased one – which may not be the case. Some people are prone to filtering out the objective data indicating that they have coped in the past and therefore experience an elevated sense of threat and anxiety – reminding the practitioner that rational thought may not always dominate.

## **Do I see performance as an opportunity or a threat?**

The work of Jones et al. (2009) casts light upon the question of why performance is viewed sometimes as a challenging opportunity and at others as a threat to be avoided if at all possible. Their work has built on two existing lines of theory – the biopsychosocial model of challenge and threat proposed by Blascovich and Tomaka (1996) and the facilitative/debilitative model of stress and performance developed by Graham Jones and Swain (1995). Blascovich and Tomaka had previously shown that threat and challenge produce very different physiological responses – a challenge is viewed as something that can be coped with, whilst a threat is a task which is believed to be overwhelming to one's ability to cope. It is important here to note that we are talking about your perception of your ability to cope, not your actual objective coping resources – these would be very difficult to quantify. People may be biased in their perceptions – they may make biased judgements of their coping resources, either overestimating or underestimating, and therefore tend always to see things negatively as threat or always see things positively as challenge.

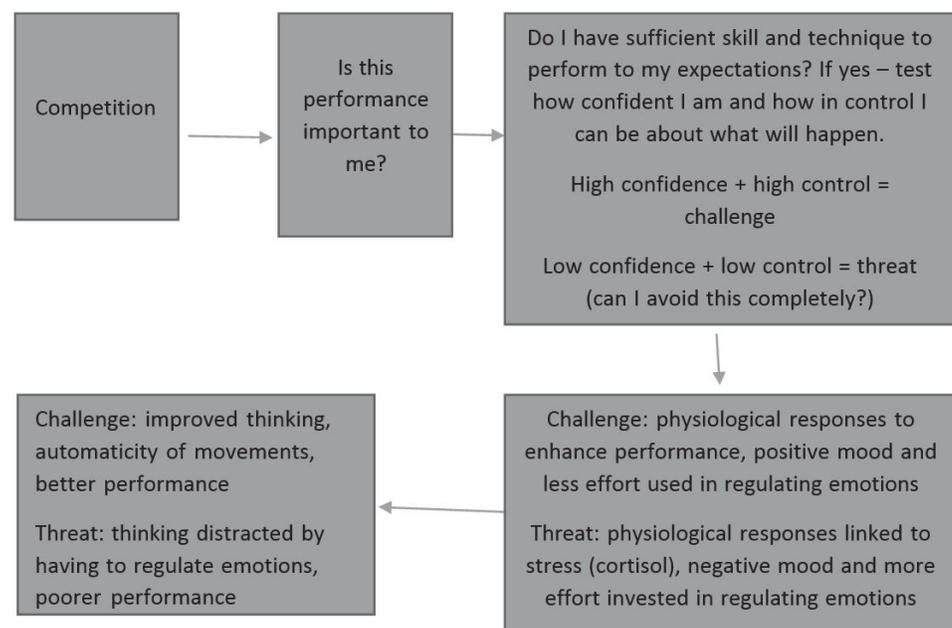


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Excerpted from *Faster, Fitter, Happier*

Jones and Swain's (1995) model reinforced this idea, indicating that for some people the experience of performance anxiety, although it is negative and unpleasant, can have a positive impact on performance. Graham Jones' directional model of stress and performance shows us that a perception of control is central in determining whether performance is positively or negatively affected by stress. This again is more complex than it seems. Control can mean a number of things: a high level of belief in your ability to execute the necessary skill, or a high level of belief in your personal ability to control emotions. The result of this theoretical development is that some key aspects of thinking are linked to whether you view performance to be a threat and experience negative emotions or a challenge and experience positive ones.

I have adapted a figure from the work of Jones et al. (2009) which identifies the stages in the thought process (Figure 4.1).



**Figure 4.1** Challenge versus threat.



# CAN SPORT PSYCHOLOGY STOP ME BEING SICK WITH NERVES BEFORE I PERFORM?

Excerpted from *Faster, Fitter, Happier*

It should however be noted that linear and blocked diagrams fail to capture the complexity of human thinking. In reality, thoughts don't fit into boxes and the arrows can be double-ended.

## How do emotions have an impact on sport performance?

Figure 4.1 gives a clue about the three ways in which emotions impact on performance in sport. Emotions can influence and be influenced by: (1) motivation; (2) physiology; and (3) the type of thinking processes a person engages in. If a performance is not viewed as important or is motivationally neutral, the emotional engagement is low and the consequences unimportant. However, if a performance is viewed as very important, the performer will invest a great deal of physical and mental effort into getting it right and getting the result strived for. Under these conditions, a good performance or a good execution of a skill in performance will generate pride and happiness and lead to wanting to try to do it again and improve. On the other hand, an error may lead to guilt and shame, which may lead to a more complex behavioural response. If confidence is still high, One might seek opportunities to have another go, to make up for the error; this is a positive response. There is a possible negative consequence to the error: if confidence is low, One might avoid the situation and withdraw, fearing more shame and guilt from making a further error.

Physiologically, emotional responses are closely related to the operation of the autonomic nervous system. It is a very complex integrated series of endocrine (hormone-producing) and nervous structures and I don't intend to go into a great deal of detail in this text. For the purposes of this discussion we need to know that it is the autonomic nervous system which regulates the 'fright, flight,



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fight, flee' response and that it is this system which is responsible for the production of key performance-related hormones such as adrenaline, testosterone and cortisol. There is evidence that the physiological events linked to emotion are closely related to the experience of emotion, in particular, the way in which increases in physiological arousal are interpreted and impact on the generation of either positive or negative emotions.

## **We just need to control our arousal levels!**

Physiological arousal is a general term to indicate the level of activity in the central nervous system. The concept of arousal is an important one, but one which still provokes some misunderstanding: for example, In the Euro16 soccer competition, Chris Coleman, the Wales manager, was interviewed about an upcoming match against England. He noted that it was important for his players to control their arousal – a comment which resulted in sniggered asides from the journalists. Coleman was using the term accurately, whilst the journalists focused on the link between the term arousal and sex. Sexual arousal is a subsystem within the physiological arousal process: it is linked to the autonomic nervous system but is very specific and, trust me on this, not directly linked to athletic performance.

There is much debate around the definition of arousal, but broadly, the concept is concerned with how awake or alert you feel. In the early days of sport psychology research a number of theories (now thankfully superseded) presented the startling conclusion that the more awake you felt, the better you played. But if you were too awake you started performing worse again. Understanding has developed since then!



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Increased arousal has the potential to help us run faster, jump higher and lift or punch more powerfully. However, increased arousal has also been shown to result in a loss in coordination, a reduction in the accuracy of fine movements and a loss of efficiency in movement. Coupled with this, increased arousal presents the thinking part of the brain with a great deal of information to process. High arousal can be interpreted as a whole range of things – excitement, fear, joy or terror. In performance we will often encounter increased physiological arousal – increased heart and breathing rate, increased blood sugar levels, sweaty palms and a desire to go to the bathroom. These potentially are positive signs, especially if your performance involves running, jumping or hitting, but only if these symptoms are viewed positively and generate positive emotions.

Understanding emotion is one thing: understanding what emotion does to your sport performance is quite another. All performers should know their ideal performance 'temperature' – without this knowledge, you are unable to self-regulate. You are limiting your ability to thrive under the inevitable pressure of performance.